Source: **T1**

Title: **CR's to TS 34.123-1 v3.2.0 for approval**

Agenda item: **6.1**

Document for: **Approval**

This document contains 5 CRs to TS 34.123-1 v3.2.0. These CRs have been agreed by T1 and are put forward to TSG T for approval.

CRs with routine updates:

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level
34.123-1	048		R99	Idle mode test cases	F	3.2.0	3.3.0	T1-010076
34.123-1	049		R99	Updates to clause 8 of TS 34.123-1 version 3.2.0	F	3.2.0	3.3.0	T1-010106
34.123-1	050		R99	Update to GMM test case.	F	3.2.0	3.3.0	T1-010086
34.123-1	051		R99	Update to 16. SMS test specification	D	3.2.0	3.3.0	T1-010090
34.123-1	052		R99	Annex B: Update of versions of core specifications	F	3.2.0	3.3.0	T1-010091

3GPP TSG-T1 Meeting #10
Copenhagen, Denmark, 8-9 February, 2001

Tdoc T1-010076

3GPP TSG-T1/SIG Meeting #15
Copenhagen, Denmark, 5-7 February, 2001

Tdoc T1S-010004r1

CR-Form-v3

CHANGE REQUEST

⌘ **34.123-1** **CR** **048** ⌘ rev **-** ⌘ Current version: **3.2.0** ⌘

*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:	⌘	Idle mode test cases
Source:	⌘	Ericsson
Work item code:	⌘	9
Date:	⌘	2001-02-02
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(essential 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. Updated test cases to reflect recent changes in core specs: TS 25.304 V3.5.0 (2000-12), TS 23.122 V3.5.0 (2000-12), TS 25.133, V3.4.0 (2000-12)
2. The common requirements in the beginning of clause 6 have been updated
3. Requirements to receive a respons within a given time from a certain stimulus, have at large been removed as a general guard timer of 5 minutes exist. Timing requirements coming from core specifications are maintained.
4. Tables containing parameter test setups have been changed in order to show more clearly how parameters are modified during the test.
5. The following test cases have been removed:
   - "6.1.2.1 Cell Selection": Cell selection has been simplified and is now only a matter of finding a suitable cell and not necessarily the best ranked cell as in previous versions of TS 25.304.
   - "6.1.2.7 Cell reselection due to UE rejection "LA not allowed"": This test already exists in TS 34.123-1, 9.4.2.3 "Location updating / rejected / location area not allowed"
   - "6.1.2.8 Cell reselection due to UE rejection "Roaming not allowed in this LA"": This test already exists in TS 34.123-1, 9.4.2.4 "Location updating / rejected / roaming not allowed in this location area"
   - "6.1.2.10 Immediate cell evaluation": Corresponding spec in TS 25.304 has been removed.
6. New test cases:
   - "6.1.2.7 HCS Cell reselection using reselection timing parameters for the R criterion"

Summary of change:	⌘	Updated test cases to reflect recent changes in core specs.
Consequences if not approved:	⌘	Inconsistencies between T1 and RAN2 specifications

Clauses affected:	⌘	6		
Other specs affected:	⌘	[ ] Other core specifications [X] Test specifications [ ] O&M Specifications	⌘	TS 34.123-2, Clause 4, Table 1 “Idle mode”
Other comments:	⌘			

6 Idle mode operations

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

Since the conformance requirements of most of the tests in this clause cannot be tested explicitly, testing is done implicitly by testing the UE behaviour from its responses to the SS. In some cases, a test is performed in multiple stages in order that the requirements can be tested within the above constraints.

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

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

- the SS is continuously paging the UE on all cells at the start of the test and does not respond to RACH requests from the UE. Where a test specifies that the UE is not paged in a particular cell, only idle paging is transmitted;
- the default values of the system information data fields given in TS 34.108 are used;
- the USIM is in the idle updated state in the default location area with a TMSI assigned at the beginning of each test;

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

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

The PLMN numbers indicated in Table 6.1.3.1 are used in test cases to associate a cell with an MCC and MNC for that cell. If no PLMN is explicitly specified, the default value is PLMN 1.

Table 6.1.3.1: Location Area Information (LAI) in System Information type 3 messages broadcast on the BCCH

PLMN	MCC1	MCC2	MCC3	MNC1	MNC2	MNC3	LAC
1	0	0	1	0	1	F	x
2	0	0	2	1	F	F	x
3	0	0	4	2	F	F	x
4	0	0	5	3	F	F	x
5	0	0	6	4	F	F	x
6	0	0	7	5	F	F	x
7	0	0	8	6	F	F	x
8	0	0	9	7	F	F	x
9	0	1	0	0	F	F	x
10	0	1	1	1	F	F	x
11	0	1	2	2	F	F	x
12	0	1	3	3	F	F	x

NOTE: ‘x’ denotes any value

References: TS 23.122, Annex A and TS 23.003, 2

The test channel numbers indicated in Table 6.1.3.2 and 6.1.3.3 are used in test cases to associate a cell with a frequency for that cell. The frequencies for GSM and DCS cells in Table 6.1.3.3 are identical to those used in GSM 11.10-1, clause 26.3.1. The RF signal levels for GSM cells are given in Table 6.1.3.3 and for UTRAN cells in TS 34.108, Table 6.1.1. If no channel is explicitly specified, the default value is Test Channel 1.

Table 6.1.3.2: UTRA test frequencies

		ITU region 2
Test Channel	**UARFCN (uplink)**	**UARFCN (uplink)**
1	9613	9263
2	9663	9313
3	9713	9363
4	9763	9413
5	9813	9463
6	9863	9513

References: TS 34.108, 5.1.1 and TS 34.121, 4

Table 6.1.3.3: GSM/DCS test frequencies and levels

	GSM 900		DCS 1 800	
Test Channel	**level dBµVemf( )**	**BCCH ARFCN**	**level dBµVemf( )**	**BCCH ARFCN**
1	+65	1	+65	520
2	+63	7	+63	580
3	+61	39	+61	610
4	+55	65	+55	702
5	+59	66	+59	703
6	+57	85	+57	830
7	+55	97	+55	885
8	+53	124		

	GSM 450		DCS 480	
Test Channel	**level dBµVemf( )**	**BCCH ARFCN**	**level dBµVemf( )**	**BCCH ARFCN**
1	+65	259	+65	306
2	+63	261	+63	308
3	+61	267	+61	314
4	+55	268	+55	315
5	+59	281	+59	328
6	+57	288	+57	335
7	+55	291	+55	338
8	+53	293	+53	340

	Multiband 900/1800			
Test Channel	**level dBµVemf( )**	**BCCH ARFCN**		
1	+65	520		
2	+63	7		
3	+61	39		
4	+55	702		
5	+59	66		
6	+57	85		
7	+55	885		
8	+53	124		

	Multiband 450/900		Multiband 480/900	
Test Channel	level dBμVemf( )	BCCH ARFCN	level dBμVemf( )	BCCH ARFCN
1	+65	1	+65	1
2	+63	261	+63	308
3	+61	267	+61	314
4	+55	65	+55	65
5	+59	281	+59	328
6	+57	288	+57	335
7	+55	124	+55	124
8	+53	293	+53	340

	Multiband 450/1800		Multiband 480/1800	
Test Channel	level dBμVemf( )	BCCH ARFCN	level dBμVemf( )	BCCH ARFCN
1	+65	520	+65	520
2	+63	261	+63	308
3	+61	267	+61	314
4	+55	702	+55	702
5	+59	281	+59	328
6	+57	288	+57	335
7	+55	885	+55	885
8	+53	293	+53	340

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

6.1 In a pure 3GPP environment

6.1.1 PLMN selection and reselection

6.1.1.1 PLMN selection of RPLMN, HPLMN, UPLMN and OPLMN; Manual mode

6.1.1.1.1 Definition

Test to verify that the UE can present the available PLMNs in priority order to the user when asked to do so in manual mode and that the displayed PLMNs can be selected / reselected by the user. Forbidden PLMNs shall also by displayed in the list. If available, the RPLMN shall be selected at switch-on, otherwise the displayed list shall include in priority order HPLMN, User-PLMN and Operator-PLMN. The last priority in the list is “Other PLMN/access technology combinations” which is not included in this test.

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

6.1.1.1.2 Conformance requirement

1. At switch on, the MS selects the registered PLMN (if it is available) using all access technologies that the MS is capable of and attempts to perform a Location Registration. The MS shall start its search using the access technology type stored in the RPLMN Last Used Access Technology data field on the SIM. If the RPLMN Last Used Access Technology is not available then an MS capable of GSM access technology shall start its search using GSM access technology.

   On recovery from lack of coverage, the MS selects the registered PLMN (if it is available) using all access technologies that the MS is capable of and, if necessary attempts to perform a Location Registration.

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

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

2. Manual Network Selection Mode Procedure:

   The MS indicates whether there are any PLMNs, which are available using all supported access technologies. This includes "Forbidden PLMNs" and PLMNs which only offer services not supported by the MS.

   If displayed, PLMNs meeting the criteria above are presented in the following order:

   2.1 HPLMN;

   2.2 PLMNs contained in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   2.3 PLMNs contained in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   2.4 Other PLMN/access technology combinations with received high quality signal in random order;

   2.5 Other PLMN/access technology combinations in order of decreasing signal quality.

   The user may select his desired PLMN and the MS then initiates registration on this PLMN using the access technology chosen by the user for that PLMN or using the highest priority available access technology for that PLMN, if the associated access technologies have a priority order. (This may take place at any time during the presentation of PLMNs). For such a registration, the MS shall ignore the contents of the forbidden LAI and PLMN lists.

   If the user does not select a PLMN, the selected PLMN shall be the one that was selected before the PLMN selection procedure started. If no such PLMN was selected or that PLMN is no longer available, then the MS shall attempt to camp on any acceptable cell and enter the limited service state.

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

References

1. TS 23.122, 4.4.3.1
2. TS 23.122, 4.4.3.1.2
3. TS 23.122, 3.1

NOTE: TS 31.102 defines the USIM fields

6.1.1.1.3 Test purpose

1. To verify that if available, the RPLMN is selected at switch-on.
2. To verify that in Manual Network Selection Mode Procedure, the UE presents the HPLMN, UPLMN and OPLMN in a prioritized order.
3. To verify that forbidden PLMNs are also displayed in the list.

6.1.1.1.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

All Radio Access Technology USIM fields and cells are UTRAN.

Cell	Test Channel	PLMN
Cell 1	1	PLMN 1
Cell 2	2	PLMN 2
Cell 3	3	PLMN 3
Cell 4	4	PLMN 4
Cell 5	5	PLMN 5
Cell 6	6	PLMN 6

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

USIM field	Priority	PLMN
EF_{LOCI}		PLMN 1
$EF_{HPLMNwAcT}$	1st	PLMN 2
$EF_{PLMNwACT}$	1st	PLMN 3
	2nd	PLMN 4
$EF_{OPLMNwACT}$	1st	PLMN 5
	2nd	PLMN 6
EF_{FPLMN}	PLMN 3	

NOTE: PLMN 3 is forbidden.

Test procedure

a) The SS activates cells 1-6 and monitors the cells for random access requests from the UE

b) The UE is switched on

c) The SS waits for random access requests from the UE

d) Cell 1 is switched off

e) PLMN 4 shall be selected when the PLMN list is presented

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

g) Cell 4 is switched off

h) PLMN 3 shall be selected when the PLMN list is presented. The SS shall reject the Registration Request from the UE.

i) PLMN 5 shall be selected (the list is already available)

j) The SS waits for random access requests from the UE

k) Cell 5 is switched off

l) PLMN 2 shall be selected when the PLMN list is presented

m) The SS waits for random access requests from the UE

n) Cell 2 is switched off

o) PLMN 6 shall be selected when the PLMN list is presented

p) The SS waits for random access requests from the UE

q) Cell 6 is switched off

6.1.1.1.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1. The displayed PLMN shall be PLMN 1.

2) In step e), the list shall be presented. The priority shall be as follows: PLMN 2, PLMN 3, PLMN 4, PLMN 5, PLMN 6.

3) In step f), the response from the UE shall be on Cell 4. The displayed PLMN shall be PLMN 4.

4) In step h), the list shall be presented. The priority shall be as follows: PLMN 2, PLMN 3, PLMN 5, PLMN 6. After PLMN 3 has been selected, the list shall appear again as the UE cannot perform registration.

6) In step j), the response from the UE shall be on Cell 5. The displayed PLMN shall be PLMN 5.

7) In step l), the list shall be presented. The priority shall be as follows: PLMN 2, PLMN 3, PLMN 6.

8) In step m), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN 2.

9) In step o), the list shall be presented. The priority shall be as follows: PLMN 3, PLMN 6.

10) In step p), the response from the UE shall be on Cell 6. The displayed PLMN shall be PLMN 6.

11) After step q), the UE shall inform that only limited service is possible.

6.1.1.2 PLMN selection of “Other PLMN / access technology combinations”; Manual mode

6.1.1.2.1 Definition

Test to verify that the UE can present the available PLMNs in priority order to the user when asked to do so in manual mode and that the displayed PLMNs can be selected / reselected by the user. Forbidden PLMNs shall also by displayed in the list. In this test are only considered “Other PLMN/access technology combinations” in the priority list.

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

6.1.1.2.2 Conformance requirement

1. At switch on, the MS selects the registered PLMN (if it is available) using all access technologies that the MS is capable of and attempts to perform a Location Registration. The MS shall start its search using the access technology type stored in the RPLMN Last Used Access Technology data field on the SIM. If the RPLMN Last Used Access Technology is not available then an MS capable of GSM access technology shall start its search using GSM access technology.

   On recovery from lack of coverage, the MS selects the registered PLMN (if it is available) using all access technologies that the MS is capable of and, if necessary attempts to perform a Location Registration.

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

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

2. Manual Network Selection Mode Procedure:

   The MS indicates whether there are any PLMNs, which are available using all supported access technologies. This includes "Forbidden PLMNs" and PLMNs which only offer services not supported by the MS.

   If displayed, PLMNs meeting the criteria above are presented in the following order:

   2.1 HPLMN;

2.2 PLMNs contained in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

2.3 PLMNs contained in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

2.4 Other PLMN/access technology combinations with received high quality signal in random order;

2.5 Other PLMN/access technology combinations in order of decreasing signal quality.

The user may select his desired PLMN and the MS then initiates registration on this PLMN using the access technology chosen by the user for that PLMN or using the highest priority available access technology for that PLMN, if the associated access technologies have a priority order. (This may take place at any time during the presentation of PLMNs). For such a registration, the MS shall ignore the contents of the forbidden LAI and PLMN lists.

If the user does not select a PLMN, the selected PLMN shall be the one that was selected before the PLMN selection procedure started. If no such PLMN was selected or that PLMN is no longer available, then the MS shall attempt to camp on any acceptable cell and enter the limited service state.

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

References

1. TS 23.122, 4.4.3.1
2. TS 23.122, 4.4.3.1.2
3. TS 23.122, 3.1

NOTE: TS 31.102 defines the USIM fields

6.1.1.2.3 Test purpose

1. To verify that in Manual Network Selection Mode Procedure, the UE presents “Other PLMN/access technology combinations” in a prioritized order according to conformance requirement 2.4 and 2.5.
2. To verify that forbidden PLMNs are also displayed in the list.

6.1.1.2.4 Method of test

Initial conditions

The UE is in automatic mode.

All Radio Access Technology USIM fields and cells are UTRAN.

Cell	CPICH_Ec/Io [dB]	Test Channel	PLMN
Cell 1	-15	1	PLMN 6
Cell 2	-15	2	PLMN 7
Cell 3	-15	3	PLMN 8
Cell 4	-16	4	PLMN 9
Cell 5	-17	5	PLMN 10
Cell 6	-18	6	PLMN 11

NOTE: Cell 1 is OPLMN 2nd priority. HQ signal [FFS] is on Cell 2-3 but not on Cell 4-6.

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

USIM field	Priority	PLMN
EF_{LOCI}		PLMN 1
$EF_{HPLMNwAcT}$	1st	PLMN 2
$EF_{PLMNwACT}$	1st	PLMN 3
	2nd	PLMN 4
$EF_{OPLMNwACT}$	1st	PLMN 5
	2nd	PLMN 6
EF_{FPLMN}	PLMN 10	

NOTE: PLMN 10 is forbidden.

Test procedure

a) The SS activates cells 1-6 and monitors the cells for random access requests from the UE

b) The UE is switched on

c) PLMN 9 shall be selected when the PLMN list is presented

d) The SS waits for random access requests from the UE

e) Cell 4 is switched off

f) PLMN 7 shall be selected when the PLMN list is presented

g) The SS waits for random access requests from the UE

h) Cell 2 is switched off

i) PLMN 6 shall be selected when the PLMN list is presented

j) The SS waits for random access requests from the UE

k) Cell 1 is switched off

l) PLMN 11 shall be selected when the PLMN list is presented

m) The SS waits for random access requests from the UE

n) Cell 6 is switched off

o) PLMN 10 shall be selected when the PLMN list is presented. The SS shall reject the Registration Request from the UE.

p) Cell 5 is switched off

q) PLMN 8 shall be selected (the list is already available)

r) The SS waits for random access requests from the UE

s) Cell 3 is switched off

6.1.1.2.5 Test Requirements

1) In step c), the list shall be presented. The priority shall be as follows: PLMN 6 followed by PLMN 7, PLMN 8 in random order, followed by PLMN 9, PLMN 10, PLMN 11.

2) In step d), the response from the UE shall be on Cell 4. The displayed PLMN shall be PLMN 9.

3) In step f), the list shall be presented. The priority shall be as follows: PLMN 6 followed by PLMN 7, PLMN 8 in random order, followed by PLMN 10, PLMN 11.

4) In step g), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN 7.

5) In step i), the list shall be presented. The priority shall be as follows: PLMN 6, PLMN 8, PLMN 10, PLMN 11.

6) In step j), the response from the UE shall be on Cell 1. The displayed PLMN shall be PLMN 6.

7) In step l), the list shall be presented. The priority shall be as follows: PLMN 8, PLMN 10, PLMN 11.

8) In step m), the response from the UE shall be on Cell 6. The displayed PLMN shall be PLMN 11.

9) In step o), the list shall be presented. The priority shall be as follows: PLMN 8, PLMN 10. After PLMN 10 has been selected, the list shall appear again as the UE cannot perform registration.

10) In step q), the list shall be presented and shall only contain PLMN 8.

11) In step r), the UE shall respond on Cell 3. The displayed PLMN shall be PLMN 8.

12) After step s), the UE shall inform that no network is available.

6.1.1.3 PLMN selection / reselection; independence of RF level and preferred PLMN; Manual mode

6.1.1.3.1 Definition

Test to verify that in Manual Network Selection Mode, the UE is able to obtain normal service on a PLMN which is neither the better nor a preferred PLMN and that it tries to obtain service on a VPLMN if and only if the user selects it manually.

6.1.1.3.2 Conformance requirement

1. At switch on, the MS selects the registered PLMN (if it is available) using all access technologies that the MS is capable of and attempts to perform a Location Registration. The MS shall start its search using the access technology type stored in the RPLMN Last Used Access Technology data field on the SIM. If the RPLMN Last Used Access Technology is not available then an MS capable of GSM access technology shall start its search using GSM access technology.

   On recovery from lack of coverage, the MS selects the registered PLMN (if it is available) using all access technologies that the MS is capable of and, if necessary attempts to perform a Location Registration.

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

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

2. Manual mode - Here the MS indicates to the user which PLMNs are available. Only when the user makes a manual selection does the MS try to obtain normal service on the VPLMN.3. Manual Network Selection Mode Procedure:

   The MS indicates whether there are any PLMNs, which are available using all supported access technologies. This includes "Forbidden PLMNs" and PLMNs which only offer services not supported by the MS.

   If displayed, PLMNs meeting the criteria above are presented in the following order:

   1.1 HPLMN;

   1.2 PLMNs contained in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.3 PLMNs contained in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.4 Other PLMN/access technology combinations with received high quality signal in random order;

   1.5 Other PLMN/access technology combinations in order of decreasing signal quality.

The user may select his desired PLMN and the MS then initiates registration on this PLMN using the access technology chosen by the user for that PLMN or using the highest priority available access technology for that PLMN, if the associated access technologies have a priority order. (This may take place at any time during the presentation of PLMNs). For such a registration, the MS shall ignore the contents of the forbidden LAI and PLMN lists.

References

1. TS 23.122, 4.4.3.1
2. TS 23.122, 3.1
3. TS 23.122, 4.4.3.1.2

NOTE: TS 31.102 defines the USIM fields

6.1.1.3.3 Test purpose

1. To verify that the selected PLMN at switch-on is the HPLMN
2. To verify that in Manual Network Selection Mode Procedure the UE tries to obtain service on a VPLMN if and only if the user selects it manually
3. To verify that the UE is able to obtain normal service on a PLMN which is neither the better nor a prefered PLMN.

6.1.1.3.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

PLMN 1 is the HPLMN (i.e. IMSI). There is no RPLMN stored in the USIM (i.e. field EF_{BCCH}).

PLMN 2 is not contained in any preferred PLMN list on the USIM.

PLMN 3 is contained in the UPLMN selector list on the USIM and has a different MCC-MNC from PLMN 1.

The UE is equipped with a USIM containing default values.

Step a-d:

Parameter	Unit	Cell 1	Cell 2
Test Channel		1	2
$\hat{I}_{or}/I_{oc}$	dB	2.3	-4.1
CPICH_Ec/Io	dB	-12.0	-15.5
CPICH RSCP	dBm	-77.7	-84.1
Qqualmin	dB	-20	-20
Qrxlevmin	dBm	-100	-100
Squal*	dB	8.0	4.5
Srxlev*	dBm	22.3	15.9
PLMN		1	2

Step e-f:

CPICH_Ec/Io		ON -> OFF	-15.5

Step g-h:

CPICH_Ec/Io		OFF -> -12.0	-15.5
PLMN		1 -> 3	2

Step i-l:

CPICH_Ec/Io		-12	-15.5 -> OFF

Test procedure

a) The SS activates cells 1 and 2

b) The UE is switched on.

c) PLMN 1 is selected

d) The SS waits for random access requests from the UE. A complete Location Update is done.

e) Cell 1 is switched off

f) The SS waits to see if there is any random access requests from the UE

g) Cell 1 is switched on

h) The SS waits to see if there is any random access requests from the UE

i) PLMN 2 is selected manually

j) The SS waits for random access requests from the UE. A complete Location Update is done.

k) Cell 2 is switched off

l) The SS waits to see if there is any random access requests from the UE

6.1.1.3.5 Test Requirements

1) In step d), there shall be a response on Cell 1. The selected PLMN shall be PLMN 1.

2) In step f), there shall be no response from the UE.

3) In step h), there shall be no response from the UE.

4) In step j), there shall be a response on Cell 2. The selected PLMN shall be PLMN 2.

5) In step l), there shall be no response from the UE.

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

6.1.1.4.1 Definition

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

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

6.1.1.4.2 Conformance requirement

1. At switch on, the MS selects the registered PLMN (if it is available) using all access technologies that the MS is capable of and attempts to perform a Location Registration. The MS shall start its search using the access technology type stored in the RPLMN Last Used Access Technology data field on the SIM. If the RPLMN Last Used Access Technology is not available then an MS capable of GSM access technology shall start its search using GSM access technology.

   On recovery from lack of coverage, the MS selects the registered PLMN (if it is available) using all access technologies that the MS is capable of and, if necessary attempts to perform a Location Registration.

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

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

2. Automatic Network Selection Mode Procedure:

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

   2.1 HPLMN (if not previously selected);

   2.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order)

   2.3 Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order)

   2.4 Other PLMN/access technology combinations with received high quality signal in random order

   2.5 Other PLMN/access technology combinations in order of decreasing signal quality

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

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

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

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

References

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

NOTE: TS 31.102 defines the USIM fields

6.1.1.4.3 Test purpose

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

6.1.1.4.4 Method of test

Initial conditions

The UE is in automatic mode.

MCC of HPLMN shall be different from other PLMNs in the network to avoid periodic search for HPLMN.

All Radio Access Technology USIM fields and cells are UTRAN.

Cell	Test Channel	PLMN
Cell 1	1	PLMN 1
Cell 2	2	PLMN 2
Cell 3	3	PLMN 3
Cell 4	4	PLMN 4
Cell 5	5	PLMN 5
Cell 6	6	PLMN 6

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

USIM field	Priority	PLMN
EF_{LOCI}		PLMN 1
$EF_{HPLMNwAcT}$	1st	PLMN 2
$EF_{PLMNwACT}$	1st	PLMN 3
	2nd	PLMN 4
$EF_{OPLMNwACT}$	1st	PLMN 5
	2nd	PLMN 6
EF_{FPLMN}	PLMN 3	

NOTE: PLMN 3 is forbidden.

Test procedure

a) The SS activates cells 1-6 and monitors the cells for random access requests from the UE

b) The UE is switched on

c) The SS waits for random access requests from the UE

d) Cell 1 is switched off

e) The SS waits for random access requests from the UE

f) Cell 2 is switched off

g) The SS waits for random access requests from the UE

i) Cell 4 is switched off

j) The SS waits for random access requests from the UE

k) Cell 5 is switched off

l) The SS waits for random access requests from the UE

m) Cell 6 is switched off

6.1.1.4.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1. The displayed PLMN shall be PLMN 1.

2) In step e), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN 2.

3) In step g), the response from the UE shall be on Cell 4. The displayed PLMN shall be PLMN 4.

4) In step j), the response from the UE shall be on Cell 5. The displayed PLMN shall be PLMN 5.

5) In step l), the response from the UE shall be on Cell 6. The displayed PLMN shall be PLMN 6.

6) After step m), the UE shall inform that only limited service is possible

6.1.1.5 PLMN selection of “Other PLMN / access technology combinations”; Automatic mode

6.1.1.5.1 Definition

Test to verify that in Automatic Network Selection Mode, the UE selects PLMNs in a prioritized order. Forbidden PLMNs shall not be selected. In this test are only considered “Other PLMN/access technology combinations” in the priority list.

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

6.1.1.5.2 Conformance requirement

1. At switch on, the MS selects the registered PLMN (if it is available) using all access technologies that the MS is capable of and attempts to perform a Location Registration. The MS shall start its search using the access technology type stored in the RPLMN Last Used Access Technology data field on the SIM. If the RPLMN Last Used Access Technology is not available then an MS capable of GSM access technology shall start its search using GSM access technology.

   On recovery from lack of coverage, the MS selects the registered PLMN (if it is available) using all access technologies that the MS is capable of and, if necessary attempts to perform a Location Registration.

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

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

2. Automatic Network Selection Mode Procedure:

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

   2.1 HPLMN (if not previously selected);

   2.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order)

   2.3 Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order)

   2.4 Other PLMN/access technology combinations with received high quality signal in random order

   2.5 Other PLMN/access technology combinations in order of decreasing signal quality

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

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

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

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

References

1. TS 23.122, 4.4.3.1

2. TS 23.122, 4.4.3.1.1

3. TS 23.122, 3.1

NOTE: TS 31.102 defines the USIM fields

6.1.1.5.3 Test purpose

1. To verify that in Automatic Network Selection Mode Procedure, the UE selects "Other PLMN/access technology combinations" in a prioritized order according to conformance requirement 2.4 and 2.5.

2. To verify that forbidden PLMNs are not selected.

6.1.1.5.4 Method of test

Initial conditions

The UE is in automatic mode.

MCC of HPLMN shall be different from other PLMNs in the network to avoid periodic search for HPLMN.

All Radio Access Technology USIM fields and cells are UTRAN.

Cell	CPICH_Ec/Io [dB]	Test Channel	PLMN
Cell 1	-15	1	PLMN 6
Cell 2	-15	2	PLMN 7
Cell 3	-15	3	PLMN 8
Cell 4	-16	4	PLMN 9
Cell 5	-17	5	PLMN 10
Cell 6	-18	6	PLMN 11

NOTE: Cell 1 is OPLMN 2nd priority. HQ signal [FFS] is on Cell 2-3 but not on Cell 4-6.

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

USIM field	Priority	PLMN
EF_{LOCI}		PLMN 1
$EF_{HPLMNwAcT}$	1st	PLMN 2
$EF_{PLMNwACT}$	1st	PLMN 3
	2nd	PLMN 4
$EF_{OPLMNwACT}$	1st	PLMN 5
	2nd	PLMN 6
EF_{FPLMN}	PLMN 10	

NOTE: PLMN 10 is forbidden.

Test procedure

a) The SS activates cells 1-6 and monitors the cells for random access requests from the UE

b) The UE is switched on

c) The SS waits for random access requests from the UE

d) Cell 1 is switched off

e) The SS waits for random access requests from the UE

f) The cell associated to the currently shown PLMN shall be switched off

g) The SS waits for random access requests from the UE

h) The cell associated to the currently shown PLMN shall be switched off

i) The SS waits for random access requests from the UE

j) Cell 4 is switched off

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

l) Cell 6 is switched off

6.1.1.5.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1. The displayed PLMN shall be be PLMN 6.

2) In step e), the response from the UE shall be on either Cell 2 or 3. The displayed PLMN shall be the one associated with the cell on which the response was received.

3) In step g), the response from the UE shall be on either Cell 2 or 3 (excluding the cell in step 2). The displayed PLMN shall be the one associated with the cell on which the response was received.

4) In step i), the response from the UE shall be on Cell 4. The displayed PLMN shall be PLMN 9 within.

5) In step k), the response from the UE shall be on Cell 6. The displayed PLMN shall be PLMN 11.

6) After step l), the UE shall inform that only limited service is possible

6.1.1.6 UE will transmit only if PLMN available

6.1.1.6.1 Definition

Test to verify that the UE will not generate any RF output if no PLMN is available.

6.1.1.6.2 Conformance requirement

[FFS: Currently no requirements exist in core specs.]

6.1.1.6.3 Test purpose

1. To verify that the UE does not give any “Service indication” when no PLMN is available
2. To verify that the UE will not generate any RF output when no PLMN is available

6.1.1.6.4 Method of test

Initial conditions

Parameter	Unit	Cell 1	Cell 2	Cell 3
$\hat{I}_{or}/I_{oc}$	dB	14.6	12.1	10.6
CPICH_Ec/Io	dB	-13.0	-15.5	-17
CPICH RSCP	dBm	-65.4	-67.9	-69.4
Qqualmin	dB	-20	-20	-20
Qrxlevmin	dBm	-100	-100	-100
Squal*	dB	7	4.5	3
Srxlev*	dBm	34.6	32.1	30.6

Test procedure

a) The SS activates the cells 1-3 and monitors them for random access requests from the UE

b) The UE is switched on.

c) The SS waits for random access request from the UE

d) Cells 1-3 are switched off

e) The SS shall wait 20 sec. to allow the UE to detect the loss of cells

f) By MMI, an attempt to originate a call is made

g) By MMI, an attempt to originate an emergency call is made (only if UE supports speech)

6.1.1.6.5 Test Requirements

1) In step c), there shall be a response on cell 1

2) In step f) and g), the UE shall not produce any RF output, neither give any “service indication”.

6.1.2 Cell selection and reselection

6.1.2.1 Cell reselection

6.1.2.1.1 Definition

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

6.1.2.1.2 Conformance requirement

1. The UE shall evaluate the cell reselection criteria based on radio measurements, and if a better cell is found that cell is selected, procedure *Cell reselection*. The change of cell may imply a change of radio access technology.
2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.

   2.1 The cell is part of the selected PLMN

   2.2 The cell is not barred

   2.3 The cell is not part of a forbidden registration area

   2.4 The cell selection criteria are fulfilled

   2.5 The SoLSA criteria are fulfilled [SoLSA support is not in the current release]

3. When camped normally, the UE shall execute the cell reselection evaluation process on the following occasions/triggers:

   3.1 UE internal triggers, so as to meet performance as specified in TS 25.133

   3.2 When information on the BCCH used for the cell reselection evaluation procedure has been modified

4. Cell Reselection Criteria:

   4.1 The UE shall perform ranking of all cells that fulfil the S criterion

   4.2 The cells shall be ranked according to the R criteria. The best ranked cell is the cell with the highest R value. If a FDD cell is ranked as the best cell, the UE shall perform cell re-selection to that FDD cell

   4.3 The UE shall reselect the new cell, if the cell reselection criteria are fulfilled during a time interval Treselection.

   4.4 The cell-ranking criterion R is derived from Q, Qhyst, Qoffset, TEMP_OFFSET and PENALTY_TIME. However, TEMP_OFFSET and PENALTY_TIME are only applicable when HCS is applied that is when serving cell belongs to a hierarchical structure.

5. Non-suitable cells (Squal > 0 and Srxlev > 0):

   If the best cell according to cell reselection criteria does not fulfil all requirements for a suitable cell, that cell, together with all cells on that frequency shall be removed as candidate for cell re-selection

6. When cell status "barred" is indicated, the UE shall select another cell according to the following rule:

   6.1 If the "Intra-frequency cell re-selection indicator" IE in Cell Access Restriction IE is set to value "allowed", the UE may select another cell on the same frequency if selection/re-selection criteria are fulfilled.

   6.2 If the "Intra-frequency cell re-selection indicator" IE is set to "not allowed" the UE shall not re-select a cell on the same frequency as the barred cell. For emergency call, the Intra-frequency cell re-selection indicator IE" shall be ignored, i.e. even if it is set to "not allowed" the UE may select another intra-frequency cell.

References

1. TS 25.304, 5.2.2
2. TS 25.304, 4.3
3. TS 25.304, 5.2.5.1
4. TS 25.304, 5.2.6.1.4
5. TS 25.304, 5.2.6.1.3
6. TS 25.304, 5.3.1.1

6.1.2.1.3 Test purpose

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

   1.1 Serving cell becomes barred

   1.2 S<0 for serving cell

2. To verify conformance requirement 5 and 6

NOTE: Reselection triggered by the cell becoming a part of a forbidden registration area is tested in clause 9.4.2.3 “Location updating / rejected / location area not allowed” and 9.4.2.4 “Location updating / rejected / roaming not allowed in this LA”

6.1.2.1.4 Method of test

Initial conditions

Treselection, Qhyst, Qoffset, TEMP_OFFSET and PENALTY_TIME are not used, so the cell-ranking criterion R equals CPICH_Ec/Io.

Step a-c:

Parameter	Unit	Cell 1	Cell 2	Cell 3
Test Channel		1	1	2
$\hat{I}_{or}/I_{oc}$	dB	4.4	2.4	-6.0
CPICH_Ec/Io	dB	-13.0	-15.0	-17.0
CPICH RSCP	dBm	-75.6	-77.6	-86.0
Qqualmin	dB	-20	-20	-20
Qrxlevmin	dBm	-100	-100	-100
Squal*	dB	7.0	5.0	3.0
Srxlev*	dBm	24.4	22.4	14
Intra-frequency cell re-selection indicator		Not Allowed	Not Allowed	Not Allowed
CellBarred		0	0	0

Step d-f:

CellBarred		0->1	0	0

Step g-h:

Intra-frequency cell re-selection indicator		Allowed	Allowed	Allowed
CellBarred		0->1	0	0

Step i:

Qqualmin	dB	-20 -> -10	-20	-20
Squal*	dB	7.0 -> -3.0	5	3

Test procedure

a) The SS activates Cell 1-3 and monitors them for random access requests from the UE.

b) The UE is switched on.

c) The SS waits for random access requests from the UE

d) The SS sets Cell 1 to be barred

e) The SS waits for random access requests from the UE

f) The stored information cell selection list in the UE is deleted and the UE is switched off.

g) Step a-e) is repeated except that “Intra-frequency cell re-selection indicator” is set to “Allowed”

h) The stored information cell selection list in the UE is deleted and the UE is switched off.

i) Step a-e) is repeated except that in step d), Qqualmin is increased to -10 dB, so S will become negative instead of the cell being barred while maintaining the same RF level.

6.1.2.1.5 Test requirements

1) In step c), the UE shall select a cell to camp on and eventually make a reselection to Cell 1

2) In step e), the UE shall respond on Cell 3

3) In step g), the UE shall respond on Cell 2

4) In step i), the UE shall respond on Cell 2

6.1.2.2 Cell reselection using Qhyst, Qoffset and Treselection

6.1.2.2.1 Definition

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

6.1.2.2.2 Conformance requirement

1. When camped normally, the UE shall execute the cell reselection evaluation process on the following occasions/triggers:

   1.1 UE internal triggers, so as to meet performance as specified in TS 25.133

   1.2 When information on the BCCH used for the cell reselection evaluation procedure has been modified

2. When camped normally, the UE shall execute the cell reselection evaluation process on the following occasions/triggers:

   2.1 UE internal triggers, so as to meet performance as specified in TS 25.133

   2.2 When information on the BCCH used for the cell reselection evaluation procedure has been modified

3. Cell Reselection Criteria:

   3.1 The UE shall perform ranking of all cells that fulfil the S criterion

   3.2 The cells shall be ranked according to the R criteria. The best ranked cell is the cell with the highest R value. If a FDD cell is ranked as the best cell, the UE shall perform cell re-selection to that FDD cell

   3.3 The UE shall reselect the new cell, if the cell reselection criteria are fulfilled during a time interval Treselection.

   3.4 The cell-ranking criterion R is derived from Q, Qhyst, Qoffset, TEMP_OFFSET and PENALTY_TIME. However, TEMP_OFFSET and PENALTY_TIME are only applicable when HCS is applied that is when serving cell belongs to a hierarchical structure.

References

1. TS 25.304, 5.2.2
2. TS 25.304, 5.2.5.1
3. TS 25.304, 5.2.6.1.4

6.1.2.2.3 Test purpose

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

6.1.2.2.4 Method of test

Initial conditions

Step a-c:

Parameter	Unit	Cell 1	Cell 2
$\hat{I}_{or}/I_{oc}$	dB	8.6	5.1
CPICH_Ec/Io	dB	-12	-15.5
CPICH RSCP	dBm	-71.4	-74.9
Qqualmin	dB	-20	-20
Qrxlevmin	dBm	-100	-100
Squal*	dB	8	4.5
Srxlev*	dBm	28.6	25.1
$Qhyst2_s$	dB	10	
R_s*	dB	-2	
R_n*	dB	-15.5	

Step d-e:

$\hat{I}_{or}/I_{oc}$	dB	8.6 -> 5.1	5.1 -> 8.6
CPICH_Ec/Io	dB	-12 -> -15.5	-15.5 -> -12
R_s*	dB	-2 -> -5.5	
R_n*	dB	-15.5 -> -12	

Step f-g:

$Qhyst2_s$	dB	10 -> 0	
R_s*	dB	-5.5 -> -15.5	
R_n*	dB	-12	

Step h-j:

$\hat{I}_{or}/I_{oc}$	dB	8.6	5.1
CPICH_Ec/Io	dB	-12	-15.5
$Qoffset2_{s,n}$	dB	10	
R_s*	dB	-12	
R_n*	dB	-25.5	

Step k-l:

$\hat{I}_{or}/I_{oc}$	dB	8.6 -> 5.1	5.1 -> 8.6
CPICH_Ec/Io	dB	-12 -> -15.5	-15.5 -> -12
R_s*	dB	-12 -> -15.5	
R_n*	dB	-25.5 -> -22	

Step m-n:

$Qoffset2_{s,n}$	dB	10 -> 0	
R_s*	dB	-15.5	
R_n*	dB	-22 -> -12	

Step o-p:

$Treselection_s$	s	30	

Test procedure

a) The SS activates Cell 1 and 2 and monitors them for random access requests from the UE.

b) The UE is switched on.

c) The SS waits to see if there is any random access requests from the UE

d) The SS changes the level of Cell 1 and 2

e) The SS waits for random access requests from the UE

f) The SS resets Qhyst for Cell 1

g) The SS waits for random access requests from the UE

h) The stored information cell selection list in the UE is deleted and the UE is switched off

i) The UE is switched on.

j) The SS waits to see if there is any random access requests from the UE

k) The SS changes the level of Cell 1 and 2

l) The SS waits for random access requests from the UE

m) The SS resets Qoffset for Cell 1

n) The SS waits for random access requests from the UE

o) Step h-n) is repeated except that Treselection is 30 sec.

6.1.2.2.5 Test Requirements

1) In step c), the UE shall select a cell to camp on and eventually make a reselection to Cell 1

2) In step e), the UE shall keep responding on Cell 1

3) In step g), the UE shall respond on Cell 2

4) In step j), the UE shall select a cell to camp on and eventually make a reselection to Cell 1

5) In step l), the UE shall keep responding on Cell 1

6) In step n), the UE shall respond on Cell 2

7) In step o), the UE shall respond as in previous steps except that with the reselection to Cell 2, there shall be no response from the UE on Cell 2 within [FFS: Treselection taken into account] seconds of broadcasting Qoffset but the UE shall respond on Cell 2 within [FFS: Treselection taken into account] seconds

6.1.2.3 HCS Cell reselection

6.1.2.3.1 Definition

Test to verify that the UE performs the cell reselection correctly for hierarchical cell structures. This shall be done according to the HCS priority, the received signal quality value Q and the quality level threshold criterion H.

6.1.2.3.2 Conformance requirement

1. When camped normally, the UE shall execute the cell reselection evaluation process on the following occasions/triggers:

   1.1 UE internal triggers, so as to meet performance as specified in TS 25.133

   1.2 When information on the BCCH used for the cell reselection evaluation procedure has been modified

2. Cell Reselection Criteria for hierarchical cells:

   2.1 The quality level threshold criterion H for hierarchical cell structures is used to determine whether prioritised ranking according to hierarchical cell re-selection rules shall apply, and is calculated from the Q, Qhcs, TEMP_OFFSET and PENALTY_TIME parameters.

   2.2 The UE shall perform ranking of all cells that fulfil the S criterion among all cells that have the highest HCS_PRIO among those cells that fulfil the criterion H >= 0.

   2.3 The cells shall be ranked according to the R criteria. The best ranked cell is the cell with the highest R value. If a FDD cell is ranked as the best cell, the UE shall perform cell re-selection to that FDD cell

2.4 The UE shall reselect the new cell, if the cell reselection criteria are fulfilled during a time interval Treselection.

2.5 The cell-ranking criterion R is derived from Q, Qhyst, Qoffset, TEMP_OFFSET, PENALTY_TIME.

References

1. TS 25.304, 5.2.2
2. TS 25.304, 5.2.6.1.4

6.1.2.3.3 Test purpose

1. Verify that the UE ignores cells with H<0 for reselection and that H is calculated from Qhcs. The modification of this parameter on the BCCH shall trigger the cell reselection evaluation process.
2. Verify that the UE ranks cells based on both HCS priority and R. Qhyst, Qoffset, TEMP_OFFSET, PENALTY_TIME and Treselection are not applied so R equals CPICH_Ec/Io

6.1.2.3.4 Method of test

Initial conditions

Step a-c:

Parameter	Unit	Cell 1	Cell 2	Cell 3
$\hat{I}_{or}/I_{oc}$	dB	14.6	12.1	10.6
CPICH_Ec/Io	dB	-13.0	-15.5	-17
CPICH RSCP	dBm	-65.4	-67.9	-69.4
Qqualmin	dB	-20	-20	-20
Qrxlevmin	dBm	-100	-100	-100
Squal*	dB	7	4.5	3
Srxlev*	dBm	34.6	32.1	30.6
HCS priority		6	7	7
$Qhcs_s$	dB	-30	-10	-10
H_s*	dB	17	-5.5	-7

Step d-e:

$Qhcs_s$	dB	-30	-10	-10 -> -30
H_s*	dB	17	-5.5	-7 -> 13

Step f-g:

$Qhcs_s$	dB	-30	-10 -> -30	-30
H_s*	dB	17	-5.5 -> 14.5	13

Test procedure

a) The SS activates the cells 1-3 and monitors them for random access requests from the UE

b) The UE is switched on.

c) The SS waits for random access requests from the UE

d) The SS changes Qhcs for Cell 3

e) The SS waits for random access requests from the UE

f) The SS changes Qhcs for Cell 2

g) The SS waits for random access requests from the UE

6.1.2.3.5 Test requirements

1) In step c), the UE shall select a cell to camp on and eventually make a reselection to Cell 1

2) In step e), the UE shall respond on Cell 3

3) In step g), the UE shall respond on Cell 2

6.1.2.4 HCS Cell reselection using reselection timing parameters for the H criterion

6.1.2.4.1 Definition

Test to verify that the UE performs the cell reselection correctly for hierarchical cell structures using TEMP_OFFSET and PENALTY_TIME applied to the H criterion.

6.1.2.4.2 Conformance requirement

1. When camped normally, the UE shall execute the cell reselection evaluation process on the following occasions/triggers:

   1.1 UE internal triggers, so as to meet performance as specified in TS 25.133

   1.2 When information on the BCCH used for the cell reselection evaluation procedure has been modified

2. Cell Reselection Criteria for hierarchical cells:

   2.1 The quality level threshold criterion H for hierarchical cell structures is used to determine whether prioritised ranking according to hierarchical cell re-selection rules shall apply, and is calculated from the Q, Qhcs, TEMP_OFFSET and PENALTY_TIME parameters.

   2.2 The UE shall perform ranking of all cells that fulfil the S criterion among all cells that have the highest HCS_PRIO among those cells that fulfil the criterion H >= 0.

   2.3 The cells shall be ranked according to the R criteria. The best ranked cell is the cell with the highest R value. If a FDD cell is ranked as the best cell, the UE shall perform cell re-selection to that FDD cell

   2.4 The UE shall reselect the new cell, if the cell reselection criteria are fulfilled during a time interval Treselection.

   2.5 The cell-ranking criterion R is derived from Q, Qhyst, Qoffset, TEMP_OFFSET and PENALTY_TIME.

3. $TEMP\_OFFSET_n$ applies an offset to the H criteria for the duration of $PENALTY\_TIME_n$ after the timer T_n has started for that cell. T_n shall be started from zero when $Q_{meas\_LEV,n} > Qhcs_n$. TEMP_OFFSET is only applied to the H criteria if the cells have different HCS priorities.

References

1. TS 25.304, 5.2.2

2,3. TS 25.304, 5.2.6.1.4

6.1.2.4.3 Test purpose

1. Verify that TEMP_OFFSET is applied to the H criterion for a period of PENALTY_TIME and that the timer is started when $Q_{meas\_LEV,n} > Qhcs_n$ if serving and neighbour cell have different HCS priorities.

6.1.2.4.4 Method of test

Initial conditions

Step a-c:

Parameter	Unit	Cell 1	Cell 2	Cell 3
$\hat{I}_{or}/I_{oc}$	dB	11.6	7.1	7.1
CPICH_Ec/Io	dB	-12.5	-17	-17
CPICH RSCP	dBm	-68.4	-72.9	-72.9
Qqualmin	dB	-20	-20	-20
Qrxlevmin	dBm	-100	-100	-100
Squal*	dB	7.5	3	3
Srxlev*	dBm	31.6	27.1	27.1
HCS priority		2	4	7
$Qhcs_s$	dB	-20		
$Qhcs_{n=2}$	dB	-10		
$Qhcs_{n=3}$	dB	-10		
$TEMP\_OFFSET2_{n=2}$	dB	10		
$TEMP\_OFFSET2_{n=3}$	dB	10		
H_s*	dB	7.5		
$H_{n=2}$*	dB	-7		
$H_{n=3}$*	dB	-7		
$PENALTY\_TIME_{n=2}$	sec	40		
$PENALTY\_TIME_{n=3}$	sec	60		

Step d-e:

$Qhcs_s$	dB	-20		
$Qhcs_{n=2}$	dB	-10 -> -20		
$Qhcs_{n=3}$	dB	-10 -> -20		
H_s*	dB	7.5		
$H_{n=2}$*	dB	-7 -> 3 (after 40 sec)		
$H_{n=3}$*	dB	-7 -> 3 (after 60 sec)		

Test procedure

a) The SS activates the cells 1-3 and monitors them for random access requests from the UE

b) The UE is switched on.

c) The SS waits for random access requests from the UE

d) The SS changes Qhcs for Cell 2 and 3

e) The SS waits for random access requests from the UE

6.1.2.4.5 Test requirements

1) In step c), the UE shall select a cell to camp on and eventually make a reselection to Cell 1

2) In step e), there shall be no response from the UE on Cell 2 within 38 seconds of changing the parameters but the UE shall respond on Cell 2 within 61 seconds. The response on Cell 2 shall be before any response on Cell 3.

NOTE: Minimum time of sec. set by PENALTY_TIME (cell 2) - 2 sec. tolerance. Maximum time of 75 sec. set by PENALTY_TIME (cell 2) + 1280 msec. for DRX cycle + 1280 msec. for system info scheduling + 5 sec. actual reselection time + 1280 msec. for reading neighbour BCCH + 25%.

6.1.2.5 HCS Cell reselection using reselection timing parameters for the R criterion

6.1.2.5.1 Definition

Test to verify that the UE performs the cell reselection correctly for hierarchical cell structures using TEMP_OFFSET and PENALTY_TIME applied to the R criterion.

6.1.2.5.2 Conformance requirement

1. When camped normally, the UE shall execute the cell reselection evaluation process on the following occasions/triggers:

   1.1 UE internal triggers, so as to meet performance as specified in TS 25.133

   1.2 When information on the BCCH used for the cell reselection evaluation procedure has been modified

2. Cell Reselection Criteria for hierarchical cells:

   2.1 The quality level threshold criterion H for hierarchical cell structures is used to determine whether prioritised ranking according to hierarchical cell re-selection rules shall apply, and is calculated from the Q, Qhcs, TEMP_OFFSET and PENALTY_TIME parameters.

   2.2 The UE shall perform ranking of all cells that fulfil the S criterion among all cells, not considering HCS priority levels, if no cell fulfil the criterion H>=0.

   2.3 The cells shall be ranked according to the R criteria. The best ranked cell is the cell with the highest R value. If a FDD cell is ranked as the best cell, the UE shall perform cell re-selection to that FDD cell

   2.4 The UE shall reselect the new cell, if the cell reselection criteria are fulfilled during a time interval Treselection.

   2.5 The cell-ranking criterion R is derived from Q, Qhyst, Qoffset, TEMP_OFFSET, PENALTY_TIME.

3. $TEMP\_OFFSET_n$ applies an offset to the R criteria for the duration of $PENALTY\_TIME_n$ after the timer T_n has started for that cell. T_n shall be started from zero when $Q_{meas\_LEV,n} > Q_{meas\_LEV,s} + Qoffset2_{s,n}$. TEMP_OFFSET is only applied to the R criteria if the cells have identical priorities.

References

1. TS 25.304, 5.2.2

2,3. TS 25.304, 5.2.6.1.4

6.1.2.5.3 Test purpose

1. Verify that TEMP_OFFSET is applied to the R criterion for a period of PENALTY_TIME and that the timer is started when $Q_{meas\_LEV,n} > Q_{meas\_LEV,s} + Qoffset2_{s,n}$ if serving and neighbour cell have identical HCS priorities.

6.1.2.5.4 Method of test

Initial conditions

Step a-c:

Parameter	Unit	Cell 1	Cell 2	Cell 3
$\hat{I}_{or}/I_{oc}$	dB	11.6	7.1	7.1
CPICH_Ec/Io	dB	-12.5	-17	-17
CPICH RSCP	dBm	-68.4	-72.9	-72.9
Qqualmin	dB	-20	-20	-20
Qrxlevmin	dBm	-100	-100	-100
Squal*	dB	7.5	3	3
Srxlev*	dBm	31.6	27.1	27.1
HCS priority		1	1	1
H_s*	dB	-12.5		
$H_{n=2}$*	dB	-17		
$H_{n=3}$*	dB	-17		
R_s*	dB	-12.5		
$R_{n=2}$*	dB	-17		
$R_{n=3}$*	dB	-17		

Step d-e:

$Qoffset2_{s,n=2}$	dB	0 -> -10		
$Qoffset2_{s,n=3}$	dB	0 -> -10		
$TEMP\_OFFSET2_{n=2}$	dB	10		
$TEMP\_OFFSET2_{n=3}$	dB	10		
$PENALTY\_TIME_{n=2}$	sec	40		
$PENALTY\_TIME_{n=3}$	sec	60		
R_s*	dB	-12.5		
$R_{n=2}$*	dB	-17 -> -7 (after 40 sec)		
$R_{n=3}$*	dB	-17 -> -7 (after 60 sec)		

Test procedure

a) The SS activates the cells 1-3 and monitors them for random access requests from the UE

b) The UE is switched on.

c) The SS waits for random access requests from the UE

d) The SS broadcasts Qoffset, TEMP_OFFSET and PENALTY_TIME for Cell 2 and 3

e) The SS waits for random access requests from the UE

6.1.2.5.5 Test requirements

1) In step c), the UE shall select a cell to camp on and eventually make a reselection to Cell 1

2) In step e), there shall be no response from the UE on Cell 2 within 38 seconds of changing the parameters but the UE shall respond on Cell 2 within 61 seconds. The response on Cell 2 shall be before any response on Cell 3.

NOTE: Minimum time of sec. set by PENALTY_TIME (cell 2) - 2 sec. tolerance. Maximum time of 75 sec. set by PENALTY_TIME (cell 2) + 1280 msec. for DRX cycle + 1280 msec. for system info scheduling + 5 sec. actual reselection time + 1280 msec. for reading neighbour BCCH + 25%.

6.1.2.6 Emergency calls

6.1.2.6.1 Definition

Test to verify that the UE shall be able to initiate emergency calls when no suitable cells of the selected PLMN are available, but at least one acceptable cell is available.

6.1.2.6.2 Conformance requirement

1. Acceptable cell:

   An "acceptable cell" is a cell on which the UE may camp to obtain limited service (originate emergency calls). Such a cell shall fulfil the following requirements, which is the minimum set of requirements to initiate an emergency call in a UTRAN network:

   1.1 The cell is not barred

   1.2 The cell selection criteria are fulfilled

2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.

   2.1 The cell is part of the selected PLMN

   2.2 The cell is not barred

   2.3 The cell is not part of a forbidden registration area

   2.4 The cell selection criteria are fulfilled

   2.5 The SoLSA criteria are fulfilled [SoLSA support is not in the current release]

3. If no suitable cell is found, the UE shall attempt to find an acceptable cell of any PLMN, state *Any cell selection*. This state is also entered if a non-access stratum registration procedure is rejected, or if there is no USIM in the UE. If an acceptable cell is found, the UE shall camp on this cell and obtain limited service, state *Camped on any cell*. In this state, the UE shall behave as specified for state *Camped normally*, but typically with a different PLMN. Additionally, the UE shall regularly attempt to find a suitable cell using stored information, trying all radio access technologies that are supported by the UE. If a suitable cell is found, the PLMN is reselected.

   When a cell reselection is triggered, the UE shall evaluate the cell reselection criteria based on radio measurements, and if a better cell is found that cell is selected. The change of cell may imply a change of radio access technology.

References

1. TS 25.304, 4.3
2. TS 25.304, 4.3
3. TS 25.304, 5.2.2

6.1.2.6.3 Test purpose

1. To verify that the UE shall be able to initiate emergency calls when no suitable cells of the selected PLMN are available, but at least one acceptable cell is available.
2. To verify that the UE selects a cell with S>0 (acceptable cell) and CellBarred = 0 when no suitable cells of the selected PLMN are available.
3. To verify that the UE ranks the acceptable cells according to the cell-ranking criterion R which in this test case equals Q as Qhyst, Qoffset, TEMP_OFFSET and PENALTY_TIME parameters are not used. Treselection is not used either.

6.1.2.6.4 Method of test

Initial conditions

In step a-d, Cell 1 and 2 are neither suitable nor acceptable cells. Cell 3 is an acceptable cell but not suitable.

In step e-f, both Cell 1 and 3 are acceptable cells.

Step a-d:

Parameter	Unit	Cell 1	Cell 2	Cell 3
$\hat{I}_{or}/I_{oc}$	dB	12.1	14.6	10.6
CPICH_Ec/Io	dB	-15.5	-13.0	-17.0
CPICH_RSCP	dBm	-67.9	-65.4	-69.4
Qqualmin	dB	-20	-10	-20
Qrxlevmin	dBm	-100	-100	-100
Squal*	dB	4.5	-3	3
Srxlev*	dBm	32.1	34.6	30.6
CellBarred		1	0	0
PLMN		forbidden	forbidden	forbidden

Step e-f:

CellBarred		1 -> 0	0	0

NOTE: All the BCCH cells belong to the same PLMN, which is not the UE's home PLMN and is in the USIM's forbidden PLMN's list.

Test procedure

a) The SS activates the cells. The SS monitors for RA attempts from the UE on cells 1, 2 and 3 for the duration of the test.

b) The UE is switched on.

c) 50 seconds after switch on, an emergency call is initiated on the UE.

d) The SS waits for random access request from the UE.

e) The SS changes the CellBarred of Cell 1 to 0.

f) After 30 seconds an emergency call is initiated on the UE.

g) The SS waits for random access request from the UE.

6.1.2.6.5 Test requirements

1) In step d), the first access from the UE shall be on Cell 3.

2) In step g), the first access from the UE shall be on Cell 1.

6.2 Multi-mode environment (2G/3G case)

[Editor's note: The setting of the RF level for GSM cells are FFS. In comparing GSM and UTRAN cells, mapping needs to be specified.]

6.2.1 PLMN and RAT selection and reselection

6.2.1.1 Selection of the correct combination of PLMN and associated RAT

6.2.1.1.1 Definition

Test to verify that the UE selects the correct combination of PLMN and associated access technology according to the fields on the USIM.

6.2.1.1.2 Conformance requirement

1. At switch on, the MS selects the registered PLMN (if it is available) using all access technologies that the MS is capable of and attempts to perform a Location Registration. The MS shall start its search using the access technology type stored in the RPLMN Last Used Access Technology data field on the SIM. If the RPLMN Last Used Access Technology is not available then an MS capable of GSM access technology shall start its search using GSM access technology.

   On recovery from lack of coverage, the MS selects the registered PLMN (if it is available) using all access technologies that the MS is capable of and, if necessary attempts to perform a Location Registration.

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

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

References

1. TS 23.122, 4.4.3.1

NOTE: TS 31.102 defines the USIM fields

6.2.1.1.3 Test purpose

1. To verify that the UE selects the correct combination of PLMN and associated access technology according to the fields on the USIM.

6.2.1.1.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

Cell	Test Channel	PLMN	Radio Access Technology
Cell 1	1	PLMN 1	GSM
Cell 2	1	PLMN 1	UTRAN
Cell 3	2	PLMN 2	UTRAN
Cell 4	2	PLMN 2	GSM

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

USIM A

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}, $EF_{RPLMNACT}$		PLMN 1	GSM
$EF_{HPLMNwAcT}$	1st	PLMN 1	UTRAN
	2nd		

USIM B

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}, $EF_{RPLMNACT}$		PLMN 2	UTRAN
$EF_{HPLMNwAcT}$	1st	PLMN 2	GSM
	2nd		

Test procedure

a) The SS activates cells 1-4 and monitors the cells for random access requests from the UE. The UE shall have a USIM with settings according to USIM A.

b) The UE is switched on

c) The SS waits for random access requests from the UE

d) The UE is switched off and a USIM with settings according to USIM B is inserted

e) The UE is switched on

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

6.2.1.1.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1. The displayed PLMN shall be PLMN1 (GSM).

2) In step f), the response from the UE shall be on Cell 3. The displayed PLMN shall be PLMN2 (UTRAN).

6.2.1.2 Selection of RAT for RPLMN

6.2.1.2.1 Definition

Test to verify that the UE selects the correct access technology for the registered PLMN at switch-on if a cell with the Last Used Access Technology is not available.

6.2.1.2.2 Conformance requirement

1. At switch on, the MS selects the registered PLMN (if it is available) using all access technologies that the MS is capable of and attempts to perform a Location Registration. The MS shall start its search using the access technology type stored in the RPLMN Last Used Access Technology data field on the SIM. If the RPLMN Last Used Access Technology is not available then an MS capable of GSM access technology shall start its search using GSM access technology.

   On recovery from lack of coverage, the MS selects the registered PLMN (if it is available) using all access technologies that the MS is capable of and, if necessary attempts to perform a Location Registration.

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

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

References

1. TS 23.122, 4.4.3.1

NOTE: TS 31.102 defines the USIM fields

6.2.1.2.3 Test purpose

1. To verify that at switch-on, if a cell with the RPLMN Last Used Access Technology is not available, the UE tries to obtain registration on the same PLMN using other UE-supported RATs.

6.2.1.2.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

Cell	Test Channel	PLMN	Radio Access Technology
Cell 1	1	PLMN 1	UTRAN
Cell 2	2	PLMN 2	UTRAN
Cell 3	1	PLMN 2	GSM

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

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}, $EF_{RPLMNACT}$		PLMN 1	GSM
$EF_{HPLMNwAcT}$	1st	PLMN 2	UTRAN
	2nd		

Test procedure

a) The SS activates cells 1-3 and monitors the cells for random access requests from the UE

b) The UE is switched on

c) The SS waits for random access requests from the UE

6.2.1.2.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1. The displayed PLMN shall be PLMN1 (UTRAN). (The preferred PLMN1 network is not available on GSM so registration is attempted using other UE-supported RATs)

6.2.1.3 Selection of RAT for HPLMN; Manual mode

6.2.1.3.1 Definition

Test to verify that the UE selects the HPLMN RAT according to the HPLMN RAT priority list on the USIM. If no RAT on the list is available, the UE shall try to obtain registration on the same PLMN using other UE-supported RATs.

6.2.1.3.2 Conformance requirement

1. To allow provision for multiple HPLMN codes, the HPLMN access technologies are stored on the SIM using the same format as the User Controlled PLMN Selector with Access Technology and Operator Controlled PLMN Selector with Access Technology data fields. It is assumed in this version of the specification that this HPLMN Selector with Access Technology data field should contain only one PLMN code identical to the HPLMN code included in the IMSI. Although this single code may be duplicated in the list if multiple access technologies with priority is defined.

2. Manual Network Selection Mode Procedure:

   The MS indicates whether there are any PLMNs, which are available using all supported access technologies. This includes "Forbidden PLMNs" and PLMNs which only offer services not supported by the MS.

   If displayed, PLMNs meeting the criteria above are presented in the following order:

   2.1 HPLMN;

   2.2 PLMNs contained in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   2.3 PLMNs contained in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   2.4 Other PLMN/access technology combinations with received high quality signal in random order;

   2.5 Other PLMN/access technology combinations in order of decreasing signal quality.

   The user may select his desired PLMN and the MS then initiates registration on this PLMN using the access technology chosen by the user for that PLMN or using the highest priority available access technology for that PLMN, if the associated access technologies have a priority order. (This may take place at any time during the presentation of PLMNs). For such a registration, the MS shall ignore the contents of the forbidden LAI and PLMN lists.

   If the user does not select a PLMN, the selected PLMN shall be the one that was selected before the PLMN selection procedure started. If no such PLMN was selected or that PLMN is no longer available, then the MS shall attempt to camp on any acceptable cell and enter the limited service state.

NOTE: It is an MS implementation option whether to indicate access technologies to the user. If the MS does display access technologies, then the access technology used should be the access technology chosen by the user for that PLMN. If the MS does not display access technologies, then the access technology chosen for a particular PLMN should be the highest priority available access technology for that PLMN, if the associated access technologies have a priority order.

References

1. TS 23.122, 4.4.3 and 4.4.3.1.1 (f)

2. TS 23.122, 4.4.3.1.2

NOTE: TS 31.102 defines the USIM fields

6.2.1.3.3 Test purpose

1. To verify that,

   1.1 the UE searches for a HPLMN RAT according to the HPLMN Selector with Access Technology data field on the USIM in priority order

   1.2 If no RAT on the priority list is available, the UE tries to obtain registration on the same PLMN using other UE-supported RATs.

6.2.1.3.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

Cell	Test Channel	PLMN	Radio Access Technology
Cell 1	1	PLMN 2	UTRAN
Cell 2	1	PLMN 2	GSM
Cell 3	2	PLMN 3	UTRAN
Cell 4	2	PLMN 3	GSM

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

USIM A

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}, $EF_{RPLMNACT}$		PLMN 1	GSM
$EF_{HPLMNwAcT}$	1^{st}	PLMN 2	UTRAN
	2^{nd}		GSM

USIM B

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}, $EF_{RPLMNACT}$		PLMN 1	GSM
$EF_{HPLMNwAcT}$	1^{st}	PLMN 2	UTRAN
	2^{nd}		

Test procedure

a) The SS activates cells 1-4 and monitors the cells for random access requests from the UE. The UE shall have a USIM with settings according to USIM A.

b) The UE is switched on

c) PLMN2 (UTRAN) shall be selected when the PLMN list is presented

d) The SS waits for random access requests from the UE

e) Cell 1 is switched off

f) PLMN2 (GSM) shall be selected when the PLMN list is presented

g) The SS waits for random access requests from the UE

h) The UE is switched off and a USIM with settings according to USIM B is inserted. All cells except Cell 1 are active.

i) The UE is switched on

j) PLMN2 (GSM) shall be selected when the PLMN list is presented

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

6.2.1.3.5 Test Requirements

1) In step c), the list shall be presented. It shall contain PLMN2 (UTRAN as number 1 on the list and GSM as number 2).

2) In step d), the response from the UE shall be on Cell 1 (1^{st} priority RAT for $EF_{HPLMNwAcT}$). The displayed PLMN shall be PLMN2 (UTRAN).

3) In step f), the list shall be presented. It shall contain PLMN2 (GSM) as number 1.

4) In step g), the response from the UE shall be on Cell 2 (2^{nd} priority RAT for $EF_{HPLMNwAcT}$). The displayed PLMN shall be PLMN2 (GSM).

5) In step j), the list shall be presented. It shall contain PLMN2 (GSM) as number 1.

6) In step k), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN2 (GSM). (PLMN2 is not available on UTRAN so registration on the same PLMN is attempted using other UE-supported RATs).

6.2.1.4 Selection of RAT for UPLMN; Manual mode

6.2.1.4.1 Definition

Test to verify that the UE selects the UPLMN RAT according to the UPLMN RAT priority list on the USIM. If no RAT on the list is available, the UE shall not try to obtain registration on the same PLMN(s) with other RAT(s) but instead search for PLMNs in the OPLMN list.

6.2.1.4.2 Conformance requirement

1. Manual Network Selection Mode Procedure:

   The MS indicates whether there are any PLMNs, which are available using all supported access technologies. This includes "Forbidden PLMNs" and PLMNs which only offer services not supported by the MS.

   If displayed, PLMNs meeting the criteria above are presented in the following order:

   1.1 HPLMN;

   1.2 PLMNs contained in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.3 PLMNs contained in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.4 Other PLMN/access technology combinations with received high quality signal in random order;

   1.5 Other PLMN/access technology combinations in order of decreasing signal quality.

   The user may select his desired PLMN and the MS then initiates registration on this PLMN using the access technology chosen by the user for that PLMN or using the highest priority available access technology for that PLMN, if the associated access technologies have a priority order. (This may take place at any time during the presentation of PLMNs). For such a registration, the MS shall ignore the contents of the forbidden LAI and PLMN lists.

   If the user does not select a PLMN, the selected PLMN shall be the one that was selected before the PLMN selection procedure started. If no such PLMN was selected or that PLMN is no longer available, then the MS shall attempt to camp on any acceptable cell and enter the limited service state.

NOTE: It is an MS implementation option whether to indicate access technologies to the user. If the MS does display access technologies, then the access technology used should be the access technology chosen by the user for that PLMN. If the MS does not display access technologies, then the access technology chosen for a particular PLMN should be the highest priority available access technology for that PLMN, if the associated access technologies have a priority order.

References

1. TS 23.122, 4.4.3.1.2

NOTE: TS 31.102 defines the USIM fields

6.2.1.4.3 Test purpose

1. To verify that,

   1.1 the UE selects the UPLMN RAT according to the UPLMN RAT priority list on the USIM.

1.2 If no RAT on the list is available, the UE does not try to obtain registration on the same PLMN with another RAT but instead searches for PLMNs in the OPLMN list.

6.2.1.4.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

Cell	Test Channel	PLMN	Radio Access Technology
Cell 1	1	PLMN 3	UTRAN
Cell 2	1	PLMN 3	GSM
Cell 3	2	PLMN 4	UTRAN
Cell 4	2	PLMN 4	GSM
Cell 5	3	PLMN 5	UTRAN

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

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}, $EF_{RPLMNACT}$		PLMN 1	GSM
$EF_{HPLMNwAcT}$	1st	PLMN 2	UTRAN
	2nd		GSM
$EF_{PLMNwACT}$	1st	PLMN 3	UTRAN
	2nd	PLMN 4	GSM
$EF_{OPLMNwACT}$	1st	PLMN 5	UTRAN
	2nd	PLMN 6	GSM

Test procedure

a) The SS activates cells 1-5 and monitors the cells for random access requests from the UE

b) The UE is switched on

c) PLMN3 (UTRAN) shall be selected when the PLMN list is presented

d) The SS waits for random access requests from the UE

e) Cell 1 is switched off

f) PLMN4 (GSM) shall be selected when the PLMN list is presented

g) The SS waits for random access requests from the UE

h) Cell 4 is switched off

i) PLMN5 (UTRAN) shall be selected when the PLMN list is presented

j) The SS waits for random access requests from the UE

6.2.1.4.5 Test Requirements

1) In step c), the list shall be presented. It shall contain PLMN3 (UTRAN) as number 1 and PLMN4 (GSM) as number 2.

2) In step d), the response from the UE shall be on Cell 1 (1st priority RAT for $EF_{PLMNwACT}$). The displayed PLMN shall be PLMN3 (UTRAN).

3) In step f), the list shall be presented. It shall contain PLMN4 (GSM) as number 1 and PLMN5 (UTRAN) as number 2.

4) In step g), the response from the UE shall be on Cell 4 (2nd priority RAT for $EF_{PLMNwACT}$). The displayed PLMN shall be PLMN4 (GSM).

5) In step i), the list shall be presented. It shall contain PLMN5 (UTRAN) as number 1.

6) In step j), the response from the UE shall be on Cell 5 (1^{st} priority RAT for $EF_{OPLMNwACT}$). The displayed PLMN shall be PLMN5 (UTRAN).

6.2.1.5 Selection of RAT for OPLMN; Manual mode

6.2.1.5.1 Definition

Test to verify that the UE selects the OPLMN RAT according to the OPLMN RAT priority list on the USIM. If no RAT on the list is available, the UE shall not try to obtain registration on the same PLMN(s) with other RAT(s) but instead search for other PLMN/access technology combinations with received high quality signal in random order.

6.2.1.5.2 Conformance requirement

1. Manual Network Selection Mode Procedure:

   The MS indicates whether there are any PLMNs, which are available using all supported access technologies. This includes "Forbidden PLMNs" and PLMNs which only offer services not supported by the MS.

   If displayed, PLMNs meeting the criteria above are presented in the following order:

   1.1 HPLMN;

   1.2 PLMNs contained in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.3 PLMNs contained in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.4 Other PLMN/access technology combinations with received high quality signal in random order;

   1.5 Other PLMN/access technology combinations in order of decreasing signal quality.

   The user may select his desired PLMN and the MS then initiates registration on this PLMN using the access technology chosen by the user for that PLMN or using the highest priority available access technology for that PLMN, if the associated access technologies have a priority order. (This may take place at any time during the presentation of PLMNs). For such a registration, the MS shall ignore the contents of the forbidden LAI and PLMN lists.

   If the user does not select a PLMN, the selected PLMN shall be the one that was selected before the PLMN selection procedure started. If no such PLMN was selected or that PLMN is no longer available, then the MS shall attempt to camp on any acceptable cell and enter the limited service state.

NOTE: It is an MS implementation option whether to indicate access technologies to the user. If the MS does display access technologies, then the access technology used should be the access technology chosen by the user for that PLMN. If the MS does not display access technologies, then the access technology chosen for a particular PLMN should be the highest priority available access technology for that PLMN, if the associated access technologies have a priority order.

References

1. TS 23.122, 4.4.3.1.2

NOTE: TS 31.102 defines the USIM fields

6.2.1.5.3 Test purpose

1. To verify that,

   1.1 the UE selects the OPLMN RAT according to the OPLMN RAT priority list on the USIM.

1.2 If no RAT on the list is available, the UE does not try to obtain registration on the same PLMN(s) with other RAT(s) but instead searches for "other PLMN/access technology combinations with received high quality signal in random order".

6.2.1.5.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

Cell	"High Quality signal"	Test Channel	PLMN	Radio Access Technology
Cell 1		1	PLMN 5	UTRAN
Cell 2	No	1	PLMN 5	GSM
Cell 3	No	2	PLMN 6	UTRAN
Cell 4		2	PLMN 6	GSM
Cell 5	Yes	3	PLMN 7	UTRAN

NOTE: "High Quality signal" has not yet been defined in 3GPP.

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

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}, $EF_{RPLMNACT}$		PLMN 1	GSM
$EF_{HPLMNwAcT}$	1^{st}	PLMN 2	UTRAN
	2^{nd}		GSM
$EF_{PLMNwACT}$	1^{st}	PLMN 3	UTRAN
	2^{nd}	PLMN 4	GSM
$EF_{OPLMNwACT}$	1^{st}	PLMN 5	UTRAN
	2^{nd}	PLMN 6	GSM

Test procedure

a) The SS activates cells 1-5 and monitors the cells for random access requests from the UE

b) The UE is switched on

c) PLMN5 (UTRAN) shall be selected when the PLMN list is presented

d) The SS waits for random access requests from the UE

e) Cell 1 is switched off

f) PLMN6 (GSM) shall be selected when the PLMN list is presented

g) The SS waits for random access requests from the UE

h) Cell 4 is switched off

i) PLMN7 (UTRAN) shall be selected when the PLMN list is presented

j) The SS waits for random access requests from the UE

6.2.1.5.5 Test Requirements

1) In step c), the list shall be presented. It shall contain PLMN5 (UTRAN) as number 1 and PLMN6 (GSM) as number 2.

2) In step d), the response from the UE shall be on Cell 1 (1^{st} priority RAT for $EF_{OPLMNwACT}$). The displayed PLMN shall be PLMN5 (UTRAN).

3) In step f), the list shall be presented. It shall contain PLMN6 (GSM) as number 1 and PLMN7 (UTRAN) as number 2.

4) In step g), the response from the UE shall be on Cell 4 (2nd priority RAT for $EF_{OPLMNwACT}$). The displayed PLMN shall be PLMN6 (GSM).

5) In step i), the list shall be presented. It shall contain PLMN7 (UTRAN) as number 1.

6) In step j), the response from the UE shall be on Cell 5 (other PLMN/access technology combination). The displayed PLMN shall be PLMN7 (UTRAN).

6.2.1.6 Selection of “Other PLMN / access technology combinations”; Manual mode

6.2.1.6.1 Definition

Test to verify that if neither RPLMN, HPLMN, UPLMN nor OPLMN is available, the UE first tries to obtain registration on “Other PLMN/access technology combinations with received high quality signal in random order” and secondly on “Other PLMN/access technology combinations in order of decreasing signal quality”.

6.2.1.6.2 Conformance requirement

1. Manual Network Selection Mode Procedure:

   The MS indicates whether there are any PLMNs, which are available using all supported access technologies. This includes "Forbidden PLMNs" and PLMNs which only offer services not supported by the MS.

   If displayed, PLMNs meeting the criteria above are presented in the following order:

   1.1 HPLMN;

   1.2 PLMNs contained in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.3 PLMNs contained in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order);

   1.4 Other PLMN/access technology combinations with received high quality signal in random order;

   1.5 Other PLMN/access technology combinations in order of decreasing signal quality.

   The user may select his desired PLMN and the MS then initiates registration on this PLMN using the access technology chosen by the user for that PLMN or using the highest priority available access technology for that PLMN, if the associated access technologies have a priority order. (This may take place at any time during the presentation of PLMNs). For such a registration, the MS shall ignore the contents of the forbidden LAI and PLMN lists.

   If the user does not select a PLMN, the selected PLMN shall be the one that was selected before the PLMN selection procedure started. If no such PLMN was selected or that PLMN is no longer available, then the MS shall attempt to camp on any acceptable cell and enter the limited service state.

NOTE: It is an MS implementation option whether to indicate access technologies to the user. If the MS does display access technologies, then the access technology used should be the access technology chosen by the user for that PLMN. If the MS does not display access technologies, then the access technology chosen for a particular PLMN should be the highest priority available access technology for that PLMN, if the associated access technologies have a priority order.

References

1. TS 23.122, 4.4.3.1.2

NOTE: TS 31.102 defines the USIM fields

6.2.1.6.3 Test purpose

1. To verify that,

   1.1 If neither RPLMN, HPLMN, UPLMN nor OPLMN is available, the UE tries to obtain registration on "Other PLMN/access technology combinations with received high quality signal in random order"

   1.2 If no PLMN is available in test purpose 1.1, the UE tries to obtain registration on "Other PLMN/access technology combinations in order of decreasing signal quality"

2. The "random order" in test purpose 1.1 is not verified

6.2.1.6.4 Method of test

Initial conditions

The UE is in manual PLMN selection mode.

Cell	Signal level [dBm]	"High Quality signal"	Test Channel	PLMN	Radio Access Technology
Cell 1	-80	Yes	1	PLMN 7	UTRAN
Cell 2	-80	Yes	1	PLMN 8	GSM
Cell 3	-85	No	2	PLMN 9	UTRAN
Cell 4	-90	No	2	PLMN 10	GSM
Cell 5	-95	No	3	PLMN 11	UTRAN
Cell 6	-100	No	3	PLMN 12	GSM

NOTE: "High Quality signal" has not yet been defined in 3GPP.

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

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}, $EF_{RPLMNACT}$		PLMN 1	GSM
$EF_{HPLMNwAcT}$	1st	PLMN 2	UTRAN
	2nd		GSM
$EF_{PLMNwACT}$	1st	PLMN 3	UTRAN
	2nd	PLMN 4	GSM
$EF_{OPLMNwACT}$	1st	PLMN 5	UTRAN
	2nd	PLMN 6	GSM
EF_{FPLMN}	PLMN 7		
	PLMN 12		

NOTE: PLMN 7 and PLMN 12 are forbidden.

Test procedure

a) The SS activates cells 1-6 and monitors the cells for random access requests from the UE

b) The UE is switched on

c) PLMN11 shall be selected when the PLMN list is presented

d) The SS waits for random access requests from the UE

e) Cell 5 is switched off

f) PLMN8 shall be selected when the PLMN list is presented

g) The SS waits for random access requests from the UE

h) Cell 2 is switched off

i) PLMN10 shall be selected when the PLMN list is presented

j) The SS waits for random access requests from the UE

k) Cell 4 is switched off

l) PLMN7 shall be selected when the PLMN list is presented. The SS shall reject the Registration Request from the UE.

m) Cell 1 is switched off

n) PLMN9 shall be selected when the PLMN list is presented

o) The SS waits for random access requests from the UE

p) Cell 3 is switched off

q) PLMN12 shall be selected when the PLMN list is presented. The SS shall reject the Registration Request from the UE.

r) Cell 6 is switched off

6.2.1.6.5 Test Requirements

1) In step c), the list shall be presented. The priority shall be as follows: PLMN7, PLMN8 in random order, followed by PLMN9, PLMN10, PLMN11, PLMN12.

2) In step d), the response from the UE shall be on Cell 5. The displayed PLMN shall be PLMN11.

3) In step f), the list shall be presented. The priority shall be as follows: PLMN7, PLMN8 in random order, followed by PLMN9, PLMN10, PLMN12.

4) In step g), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN8.

5) In step i), the list shall be presented. The priority shall be as follows: PLMN7, PLMN9, PLMN10, PLMN12.

6) In step j), the response from the UE shall be on Cell 4. The displayed PLMN shall be PLMN10.

7) In step l), the list shall be presented. The priority shall be as follows: PLMN7, PLMN9, PLMN12. After the PLMN has been selected, the list shall appear again as the UE cannot perform registration.

9) In step n), the list shall be presented. The priority shall be as follows: PLMN9, PLMN12.

10) In step o), the response from the UE shall be on Cell 3. The displayed PLMN shall be PLMN9.

11) In step q), the list shall be presented and shall only contain PLMN12. After the PLMN has been selected, the list shall appear again as the UE cannot perform registration.

13) After step r), the UE shall inform that no network is available

6.2.1.7 Selection of RAT for HPLMN; Automatic mode

6.2.1.7.1 Definition

Test to verify that the UE selects the HPLMN RAT according to the HPLMN RAT priority list on the USIM. If no RAT on the list is available, the UE shall try to obtain registration on the same PLMN using other UE-supported RATs.

6.2.1.7.2 Conformance requirement

1. To allow provision for multiple HPLMN codes, the HPLMN access technologies are stored on the SIM using the same format as the User Controlled PLMN Selector with Access Technology and Operator Controlled PLMN Selector with Access Technology data fields. It is assumed in this version of the specification that this HPLMN Selector with Access Technology data field should contain only one PLMN code identical to the HPLMN code

included in the IMSI. Although this single code may be duplicated in the list if multiple access technologies with priority is defined.

NOTE: In selecting a HPLMN, the MS shall search for all access technologies it is capable of. The MS shall start its search using the access technologies stored in the HPLMN Selector with Access Technology data field on the SIM in priority order.

2. Automatic Network Selection Mode Procedure:

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

   2.1 HPLMN (if not previously selected);

   2.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order)

   2.3 Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order)

   2.4 Other PLMN/access technology combinations with received high quality signal in random order

   2.5 Other PLMN/access technology combinations in order of decreasing signal quality

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

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

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

References

1. TS 23.122, 4.4.3 and 4.4.3.1.1 (f)
2. TS 23.122, 4.4.3.1.1

NOTE: TS 31.102 defines the USIM fields

6.2.1.7.3 Test purpose

1. To verify that,

   1.1 the UE searches for a HPLMN RAT according to the HPLMN Selector with Access Technology data field on the USIM in priority order

   1.2 If no RAT on the priority list is available, the UE tries to obtain registration on the same PLMN using other UE-supported RATs.

6.2.1.7.4 Method of test

Initial conditions

The UE is in automatic mode PLMN selection.

MCC of HPLMN shall be different from other PLMNs in the network to avoid periodic search for HPLMN.

Cell	Test Channel	PLMN	Radio Access Technology
Cell 1	1	PLMN 2	UTRAN
Cell 2	1	PLMN 2	GSM
Cell 3	2	PLMN 3	UTRAN
Cell 4	2	PLMN 3	GSM

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

USIM A

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}, $EF_{RPLMNACT}$		PLMN 1	GSM
$EF_{HPLMNwAcT}$	1^{st}	PLMN 2	UTRAN
	2^{nd}		GSM

USIM B

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}, $EF_{RPLMNACT}$		PLMN 1	GSM
$EF_{HPLMNwAcT}$	1^{st}	PLMN 2	UTRAN
	2^{nd}		

Test procedure

a) The SS activates cells 1-4 and monitors the cells for random access requests from the UE. The UE shall have a USIM with settings according to USIM A.

b) The UE is switched on

c) The SS waits for random access requests from the UE

d) The UE is switched off and a USIM with settings according to USIM A is again inserted. All cells except Cell 1 are active.

e) The SS waits for random access requests from the UE

f) The UE is switched off and a USIM with settings according to USIM B is inserted. All cells except Cell 1 are active.

g) The UE is switched on

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

6.2.1.7.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1 (1^{st} priority RAT for $EF_{HPLMNwAcT}$). The displayed PLMN shall be PLMN2 (UTRAN).

2) In step e), the response from the UE shall be on Cell 2 (2^{nd} priority RAT for $EF_{HPLMNwAcT}$). The displayed PLMN shall be PLMN2 (GSM).

3) In step h), the response from the UE shall be on Cell 2. The displayed PLMN shall be PLMN2 (GSM). (PLMN2 is not available on UTRAN so registration on the same PLMN is attempted using other UE-supported RATs).

6.2.1.8 Selection of RAT for UPLMN; Automatic mode

6.2.1.8.1 Definition

Test to verify that the UE selects the UPLMN RAT according to the UPLMN RAT priority list on the USIM. If no RAT on the list is available, the UE shall not try to obtain registration on the same PLMN(s) with other RAT(s) but instead search for PLMNs in the OPLMN list.

6.2.1.8.2 Conformance requirement

1. Automatic Network Selection Mode Procedure:

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

   1.1 HPLMN (if not previously selected);

   1.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order)

   1.3 Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order)

   1.4 Other PLMN/access technology combinations with received high quality signal in random order

   1.5 Other PLMN/access technology combinations in order of decreasing signal quality

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

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

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

References

1. TS 23.122, 4.4.3.1.1

NOTE: TS 31.102 defines the USIM fields

6.2.1.8.3 Test purpose

1. To verify that,

   1.1 the UE selects the UPLMN RAT according to the UPLMN RAT priority list on the USIM.

   1.2 If no RAT on the list is available, the UE does not try to obtain registration on the same PLMN with another RAT but instead searches for PLMNs in the OPLMN list.

6.2.1.8.4 Method of test

Initial conditions

The UE is in automatic mode PLMN selection.

MCC of HPLMN shall be different from other PLMNs in the network to avoid periodic search for HPLMN.

Cell	Test Channel	PLMN	Radio Access Technology
Cell 1	1	PLMN 3	UTRAN
Cell 2	1	PLMN 3	GSM
Cell 3	2	PLMN 4	UTRAN
Cell 4	2	PLMN 4	GSM
Cell 5	3	PLMN 5	UTRAN

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

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}, $EF_{RPLMNACT}$		PLMN 1	GSM
$EF_{HPLMNwAcT}$	1st	PLMN 2	UTRAN
	2nd		GSM
$EF_{PLMNwACT}$	1st	PLMN 3	UTRAN
	2nd	PLMN 4	GSM
$EF_{OPLMNwACT}$	1st	PLMN 5	UTRAN
	2nd	PLMN 6	GSM

Test procedure

a) The SS activates cells 1-5 and monitors the cells for random access requests from the UE

b) The UE is switched on

c) The SS waits for random access requests from the UE

d) Cell 1 is switched off

e) The SS waits for random access requests from the UE

f) Cell 4 is switched off

g) The SS waits for random access requests from the UE

6.2.1.8.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1 (1st priority RAT for $EF_{PLMNwACT}$). The displayed PLMN shall be PLMN3 (UTRAN).

2) In step e), the response from the UE shall be on Cell 4 (2nd priority RAT for $EF_{PLMNwACT}$). The displayed PLMN shall be PLMN4 (GSM).

3) In step g), the response from the UE shall be on Cell 5 (1st priority RAT for $EF_{OPLMNwACT}$). The displayed PLMN shall be PLMN5 (UTRAN).

6.2.1.9 Selection of RAT for OPLMN; Automatic mode

6.2.1.9.1 Definition

Test to verify that the UE selects the OPLMN RAT according to the OPLMN RAT priority list on the USIM. If no RAT on the list is available, the UE shall not try to obtain registration on the same PLMN(s) with other RAT(s) but instead search for other PLMN/access technology combinations with received high quality signal in random order.

6.2.1.9.2 Conformance requirement

1. Automatic Network Selection Mode Procedure:

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

1.1 HPLMN (if not previously selected);

1.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order)

1.3 Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order)

1.4 Other PLMN/access technology combinations with received high quality signal in random order

1.5 Other PLMN/access technology combinations in order of decreasing signal quality

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

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

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

References

1. TS 23.122, 4.4.3.1.1

NOTE: TS 31.102 defines the USIM fields

6.2.1.9.3 Test purpose

1. To verify that,

   1.1 the UE selects the OPLMN RAT according to the OPLMN RAT priority list on the USIM.

   1.2 If no RAT on the list is available, the UE does not try to obtain registration on the same PLMN(s) with other RAT(s) but instead searches for “other PLMN/access technology combinations with received high quality signal in random order”.

6.2.1.9.4 Method of test

Initial conditions

The UE is in automatic mode PLMN selection.

MCC of HPLMN shall be different from other PLMNs in the network to avoid periodic search for HPLMN.

Cell	“High Quality signal”	Test Channel	PLMN	Radio Access Technology
Cell 1		1	PLMN 5	UTRAN
Cell 2	No	1	PLMN 5	GSM
Cell 3	No	2	PLMN 6	UTRAN
Cell 4		2	PLMN 6	GSM
Cell 5	Yes	3	PLMN 7	UTRAN

NOTE: “High Quality signal” has not yet been defined in 3GPP.

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

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}, $EF_{RPLMNACT}$		PLMN 1	GSM
$EF_{HPLMNwAcT}$	1st	PLMN 2	UTRAN
	2nd		GSM
$EF_{PLMNwACT}$	1st	PLMN 3	UTRAN
	2nd	PLMN 4	GSM
$EF_{OPLMNwACT}$	1st	PLMN 5	UTRAN
	2nd	PLMN 6	GSM

Test procedure

a) The SS activates cells 1-5 and monitors the cells for random access requests from the UE

b) The UE is switched on

c) The SS waits for random access requests from the UE

d) Cell 1 is switched off

e) The SS waits for random access requests from the UE

f) Cell 4 is switched off

g) The SS waits for random access requests from the UE

6.2.1.9.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 1 (1st priority RAT for $EF_{OPLMNwACT}$). The displayed PLMN shall be PLMN5 (UTRAN).

2) In step e), the response from the UE shall be on Cell 4 (2nd priority RAT for $EF_{OPLMNwACT}$). The displayed PLMN shall be PLMN6 (GSM).

3) In step g), the response from the UE shall be on Cell 5 (other PLMN/access technology combination). The displayed PLMN shall be PLMN7 (UTRAN).

6.2.1.10 Selection of “Other PLMN / access technology combinations”; Automatic mode

6.2.1.10.1 Definition

Test to verify that if neither RPLMN, HPLMN, UPLMN nor OPLMN is available, the UE first tries to obtain registration on “Other PLMN/access technology combinations with received high quality signal in random order” and secondly on “Other PLMN/access technology combinations in order of decreasing signal quality”.

6.2.1.10.2 Conformance requirement

1. Automatic Network Selection Mode Procedure:

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

   1.1 HPLMN (if not previously selected);

   1.2 Each PLMN in the "User Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order)

   1.3 Each PLMN in the "Operator Controlled PLMN Selector with Access Technology" data field in the SIM (in priority order)

   1.4 Other PLMN/access technology combinations with received high quality signal in random order

1.5 Other PLMN/access technology combinations in order of decreasing signal quality

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

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

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

References

1. TS 23.122, 4.4.3.1.1

NOTE: TS 31.102 defines the USIM fields

6.2.1.10.3 Test purpose

1. To verify that,

   1.1 If neither RPLMN, HPLMN, UPLMN nor OPLMN is available, the UE tries to obtain registration on “Other PLMN/access technology combinations with received high quality signal in random order”

   1.2 If no PLMN is available in test purpose 1.1, the UE tries to obtain registration on “Other PLMN/access technology combinations in order of decreasing signal quality”

2. The “random order” in test purpose 1.1 is not verified

6.2.1.10.4 Method of test

Initial conditions

The UE is in automatic PLMN selection mode.

Cell	Signal level [dBm]	“High Quality signal”	Test Channel	PLMN	Radio Access Technology
Cell 1	-80	Yes	1	PLMN 7	UTRAN
Cell 2	-80	Yes	1	PLMN 8	GSM
Cell 3	-85	No	2	PLMN 9	UTRAN
Cell 4	-90	No	2	PLMN 10	GSM
Cell 5	-95	No	3	PLMN 11	UTRAN
Cell 6	-100	No	3	PLMN 12	GSM

NOTE: “High Quality signal” has not yet been defined in 3GPP.

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

USIM field	Priority	PLMN	Access Technology Identifier
EF_{LOCI}, $EF_{RPLMNACT}$		PLMN 1	GSM
$EF_{HPLMNwAcT}$	1st	PLMN 2	UTRAN
	2nd		GSM
$EF_{PLMNwACT}$	1st	PLMN 3	UTRAN
	2nd	PLMN 4	GSM
$EF_{OPLMNwACT}$	1st	PLMN 5	UTRAN
	2nd	PLMN 6	GSM
EF_{FPLMN}	PLMN 7		
	PLMN 12		

Test procedure

a) The SS activates cells 1-6 and monitors the cells for random access requests from the UE

b) The UE is switched on

c) The SS waits for random access requests from the UE

d) Cell 2 is switched off

e) The SS waits for random access requests from the UE

f) Cell 3 is switched off

g) The SS waits for random access requests from the UE

h) Cell 4 is switched off

i) The SS waits for random access requests from the UE

j) Cell 5 is switched off

6.2.1.10.5 Test Requirements

1) In step c), the response from the UE shall be on Cell 2. The displayed PLMN8.

2) In step e), the response from the UE shall be on Cell 3. The displayed PLMN shall be PLMN9.

3) In step g), the response from the UE shall be on Cell 4. The displayed PLMN shall be PLMN10.

4) In step i), the response from the UE shall be on Cell 5. The displayed PLMN shall be PLMN11.

5) After step j), the UE shall inform that only limited service is possible.

6.2.2 Cell selection and reselection

6.2.2.1 Cell selection; UTRAN / GSM

6.2.2.1.1 Definition

Test to verify that the UE performs cell selection correctly when both a GSM and UTRA network is available.

6.2.2.1.2 Conformance requirement

1. Cell selection procedure to find a suitable cell to camp on:

   1.1 Create a candidate list of potential cells to camp on, using:

      1.1.1 Initial Cell Selection procedure; or

      1.1.2 Stored Information Cell Selection procedure

   1.2 For each cell on the candidate list, measure the quality value, $Q_{meas,LEV}$

   1.3 For each cell on the candidate list calculate the cell selection value, Squal and Srxlev

   1.4 Rank the cells and select the best cell

   1.5 Select the cell that fulfils the criteria $Q_{map,n} > Q_{map,s} + Q_{offsets,n}$ best. Check if the selected cell fulfils all requirements for a suitable cell. If so, choose this cell to camp on. If this cell does not fulfil all requirements for a suitable cell, this cell and all cells on the same frequency shall be removed as candidates for cell selection in case the barred cell does not accept intra-frequency cell selection and re-selection. On the other hand, in case the barred cell accepts intra-frequency cell selection and re-selection, only the barred cell shall be removed as candidate for cell selection, and step 1.4 shall be repeated for the remaining cells.

2. Different types of measurements are used in different radio access technologies and modes for the cell selection and reselection (CPICH Ec/N0 or CPICH SIR in UTRA FDD, P-CCPCH RSCP in UTRA TDD, RXLEV in GSM). Whenever a direct comparison of these measurements is required, mapping functions shall be applied. Mapping functions are used for mapping a certain range of measurement values Q_{meas_LEV} (CPICH_EC/N0, CPICH_RSCP_LEV, P-CCPCH_RSCP_LEV, RXLEV) to a representing quality value Q_{map} (0..99, step size 1).

3. In the *Initial cell selection* procedure, the UE shall select one radio access technology and search for a suitable cell. If no suitable cell is found, the UE shall select another radio access technology and search for a suitable cell, and so on. In the *Stored information cell selection* procedure, the UE may use stored information about the selected PLMN. The information may contain information from several radio access technologies.

References

1. TS 25.304, 5.2.2.1.1
2. TS 25.304, 7.1
3. TS 25.304, 5.2.1

6.2.2.1.3 Test purpose

To verify that

1. The UE meets conformance requirement 1.
2. The UE meets conformance requirement 2
3. The UE meets conformance requirement 3

6.2.2.1.4 Method of test

Initial conditions

The relative RF signal to total interference ratio at the UE (*CPICH_Ec/Io*) between the cells shall be:

T1: Cell 1 < Cell 2 < Cell 3 < Cell 4 < Cell 5 < Cell 6

T2: Cell 1 > Cell 2 > Cell 3 > Cell 4 > Cell 5 > Cell 6

Cell 2 and 5 have S<0, Cell 3 and 6 are barred.

Parameters changed from the default values in table 6.1.3.1.Parameter	**Unit**	**Cell 1 (UTRAN)**		**Cell 2 (UTRAN)**		**Cell 3 (UTRAN)**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**
Channel Number		UARFCN 1		UARFCN 1		UARFCN 2	
$\hat{I}_{or}/I_{oc}$	dBm	-5.71	3.06	-3.71	0.06	0.02	-7.25
CPICH_Ec/Io	dB	-18	-13	-16	-16	-13	-18
CPICH RSCP	dBm	-86	-77	-84	-80	-80	-87
Qqualmin	dB	-20		-10			
Qrxlevmin	dBm	-100		-100		-100	
Squal	dB	2	7	-6	-6	7	2
Srxlev	dBm	14	23	16	20	20	13
CellBarred		0		0		1	

Parameter	Unit	Cell 4 (GSM)		Cell 5 (GSM)		Cell 6 (GSM)	
		T1	T2	T1	T2	T1	T2
Channel Number		ARFCN 1		ARFCN 2		ARFCN 3	
RF Signal Level	dBm	-70	-95	-60	-100	-50	-105
RXLEV_ACCESS_MIN	dBm	-100		-50		-110	
C1	dBm	30	5	-10	-50	60	5
CellBarred		0		0		1	

Test procedure

a) The SS activates the cells 1-6 according to T1 and monitors cell 1, 2 and 3 for random access request from the UE

b) The UE is switched on.

c) The SS waits for random access request from the UE

d) The UE is switched off.

e) The SS monitors cells 4, 5 and 6 for random access requests from the UE.

f) The UE is switched on.

g) The SS waits to see if there is any random access request from the UE.

h) The stored information cell selection list in the UE is deleted and the UE is switched off.

i) Step a-g) is repeated except that the cells are set according to T2 and Cell 1 is set to another PLMN

6.2.2.1.5 Test Requirements

1) In step c), the first response from the UE shall be on Cell 1 within 33 seconds. (Initial cell selection)

[Editor's note: The 33 seconds is taken from GSM as there is no requirement in UMTS to the initial cell selection time. UMTS should not have worse performance than GSM]

2) In step g), there shall be no response from the UE on either Cell 4, 5 or 6 within 33 seconds. (Stored Information cell selection)

[Editor's note: The 33 seconds is taken from GSM as there is no requirement in UMTS to the stored cell selection time. UMTS should not have worse performance than GSM]

3) In step i), the first response from the UE shall be on Cell 4. (Initial cell selection) and no other responses

6.2.2.2 Cell reselection; UTRAN to GSM

6.2.2.2.1 Definition

Test to verify that the UE performs cell reselection correctly when both a GSM and UTRAN network is available and if the serving cell becomes barred or S<0.

6.2.2.2.2 Conformance requirement

1. The UE shall evaluate the cell reselection criteria based on radio measurements, and if a better cell is found that cell is selected, procedure *Cell reselection*. The change of cell may imply a change of radio access technology.

2. A "suitable cell" is a cell on which the UE may camp on to obtain normal service. Such a cell shall fulfil all the following requirements.

2.1 The cell is part of the selected PLMN

2.2 The cell is not barred

2.3 The cell is not part of a forbidden registration area

2.4 The cell selection criteria are fulfilled

2.5 The SoLSA criteria are fulfilled [SoLSA support is not in the current release]

3. When camped normally, the UE shall execute the cell reselection evaluation process on the following occasions/triggers:

   3.1 UE internal triggers, so as to meet performance as specified in TS 25.133

   3.2 When information on the BCCH used for the cell reselection evaluation procedure has been modified

4. Cell Reselection Criteria:

   4.1 The UE shall perform ranking of all cells that fulfil the S criterion

   4.2 The cells shall be ranked according to the R criteria. The best ranked cell is the cell with the highest R value. If a FDD cell is ranked as the best cell, the UE shall perform cell re-selection to that FDD cell

   4.3 The UE shall reselect the new cell, if the cell reselection criteria are fulfilled during a time interval Treselection.

   4.4 The cell-ranking criterion R is derived from Q, Qhyst, Qoffset, TEMP_OFFSET and PENALTY_TIME. However, TEMP_OFFSET and PENALTY_TIME are only applicable when HCS is applied that is when serving cell belongs to a hierarchical structure.

5. Different types of measurements are used in different radio access technologies and modes for the cell selection and reselection (CPICH Ec/N0 or CPICH RSCP in UTRA FDD, P-CCPCH RSCP in UTRA TDD, RXLEV in GSM). The use of mapping functions is indicated in system information. Mapping functions are used for mapping a certain range of measurement values Q_{meas_LEV} (CPICH_EC/N0, CPICH_RSCP_LEV, P-CCPCH_RSCP_LEV, RXLEV) to a representing quality value Q_{map} (0..99, step size 1).

References

1. TS 25.304, 5.2.2
2. TS 25.304, 4.3
3. TS 25.304, 5.2.5.1
4. TS 25.304, 5.2.6.1.4
5. TS 25.304, 7.1

6.1.2.2.3 Test purpose

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

   1.1 Serving cell becomes barred

   1.2 S<0 for serving cell

6.2.2.2.4 Method of test

Initial conditions

Step a-c:

Parameter	Unit	Cell 1 (UTRAN)
Test Channel		1
$\hat{I}_{or}/I_{oc}$	dB	5.87
CPICH_Ec/Io	dB	-11.0
CPICH RSCP	dBm	-74.1
Qqualmin	dB	-20
Qrxlevmin	dBm	-100
Squal*	dB	9.0
Srxlev*	dBm	25.9
CellBarred		0

Parameter	Unit	Cell 2 (GSM)	Cell 3 (GSM)
Test Channel		1	2
RF Signal Level	dBm	-80	-90
RXLEV_ACCESS_MIN	dBm	-100	-100
C1*	dBm	20	10

Step d-f:

Parameter	Unit	Cell 1 (UTRAN)
CellBarred		0 -> 1

Step g:

Parameter	Unit	Cell 1 (UTRAN)
Qqualmin	dB	-20 -> -5
Squal*	dB	9.0 -> -6

Test procedure

a) The SS activates cells 1, 2, and 3. The SS monitors cells 1, 2 and 3 for random access requests from the UE.

b) The UE is switched on.

c) The SS waits for random access request from the UE

d) The SS sets Cell 1 to be barred

e) The SS waits for random access request from the UE

f) The stored information cell selection list in the UE is deleted and the UE is switched off.

g) Step a-e) is repeated except that in step d), Qqualmin is increased to -5 dB, so S will become negative instead of being barred

6.2.2.2.5 Test Requirements

1) In step c), the UE shall select a cell to camp on and eventually make a reselection to Cell 1

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

3) In step g), the UE shall respond on Cell 2 after Qualmin is increased to –5dB

6.2.2.3 Cell reselection timings; GSM to UTRAN

6.2.2.3.1 Definition

Test to verify that the UE meets the cell reselection timing requirements when both a GSM and UTRAN network is available.

6.2.2.3.2 Conformance requirement

1. If the broadcast neighbour cell list includes UTRAN cells or UTRAN frequencies (with or without scrambling code group information), the UE shall, at least every 5 seconds update the value RLA_C for the serving cell and each of the at least 6 strongest non serving GSM cells.

   1.1 The UE shall then reselect a suitable UTRAN cell if its measured RSCP value exceeds the value of RLA_C for the serving cell and all of the suitable non-serving GSM cells by the value XXX_Qoffset for a period of 5 seconds and, for FDD, the UTRAN cells measured Ec/No value is equal or greater than the value FDD_Qmin.

   - Ec/No and RSCP are the measured quantities
   - FDD_Qmin and XXX_Qoffset are broadcast on BCCH of the serving cell. XXX indicates other radio access technology/mode.

   1.2 In case of a cell reselection occurring within the previous 15 seconds, XXX_Qoffset is increased by 5 dB.

   1.3 Cell reselection to UTRAN shall not occur within 5 seconds after the UE has reselected a GSM from an UTRAN cell if a suitable GSM cell can be found.

   1.4 If more than one UTRAN cell fulfils the above criteria, the UE shall select the cell with the greatest Qmeas value.

2. The UE shall be able to identify and select a new best UTRAN cell, which is part of the neighbour cell list, within 30 seconds after it has been activated under the condition that there is only one UTRAN frequency in the neighbour cell list. The allowed time is increased by 30 seconds for each additional UTRAN frequency in the neighbour cell list. However, multiple UTRAN cells on the same frequency in the neighbour cell list does not increase the allowed time.

NOTE: Definitions of measurements are in 3G TS 25.215 and 3G TS 25.101, 3.2 and GSM 05.08, 6.1.

References

1. GSM TS 05.08, 6.6.4
2. GSM TS 05.08, 6.6

6.1.2.3.3 Test purpose

1. To verify that

   1.1 The UE meets conformance requirement 1.1 and additionally, that no reselection is performed if the period is less than 5 sec.

   1.2 The UE meets conformance requirement 1.2

   1.3 The UE meets conformance requirement 1.3

6.2.2.3.4 Method of test

Initial conditions

Step a-e:

Parameter	Unit	Cell 1 (GSM)
Test Channel		1
RF Signal Level	dBm	-75
RXLEV_ACCESS_MIN	dBm	-100
MS_TXPWR_MAX_CCH	dBm	Max. output power of UE
FDD_Qmin	dBm	-20
XXX_Qoffset	dBm	5

Parameter	Unit	Cell 2 (UTRAN)
Test Channel		1
$\hat{I}_{or}/I_{oc}$	dB	-4.74
CPICH_Ec/Io	dB	-16
CPICH_RSCP	dBm	-85
Qqualmin	dB	-20
Qrxlevmin	dBm	-100
Squal*	dB	4
Srxlev*	dBm	15

Step f-g:

Parameter	Unit	Cell 1 (GSM)
RF Signal Level	dBm	-75 -> -95 (4sec) -> -75

Step h-i:

Parameter	Unit	Cell 1 (GSM)
RF Signal Level	dBm	-75 -> -95 -> -75

Step k:

Parameter	Unit	Cell 1 (GSM)
RF Signal Level	dBm	-75 -> -95 -> -75

Test procedure

NOTE: Step a-c): Test purpose 1.3. Step d-g): test purpose 1.1. Step h-k): test purpose 1.2

a) The SS activates the channels. The UE is not paged on any of the cells.

b) The UE is switched on.

c) After 50 seconds, the SS starts paging continuously on cells 1 and 2 for 20 seconds. The SS monitors cells 1 and 2 for random access requests from the UE.

d) The SS stops paging on cells 1 and 2 and waits for 20 seconds. (The UE should revert to Cell 1 due to cell reselection).

e) The SS starts paging continuously on Cell 2.

f) The SS decreases the transmit level of Cell 1 to –95dBm for a period of 4 s (RSCP will then exceed RXLEV by more than XXX_Qoffset) and then changes the level back to the original value.

g) The SS waits to see if there is any random access requests from the UE on Cell 2

h) The SS decreases the transmit level of Cell 1 to –95dBm and waits for the UE to access on Cell 2. The SS records the time t from the decrease in the level of Cell 1 to the first response from the UE.

i) The SS stops paging on Cell 2 and changes the transmit level of Cell 1 back to the original value.

j) The SS waits 20 seconds. (The UE should revert to Cell 1 due to cell reselection).

k) The SS decreases the transmit level of Cell 1 to –95dBm. After t+2 seconds, the SS starts paging continuously on Cell 1, changes the level of Cell 1 back to the original level and waits to see if there is any random access request on Cell 1.

6.2.2.3.5 Test Requirements

1) In step c), the UE shall select a cell to camp on and eventually make a reselection to Cell 1

2) In step g), there shall be no access on Cell 2 within 34 seconds of decreasing the level of Cell 1.

3) In step h), the UE shall respond on Cell 2.

4) In step k), there shall be no response on Cell 1 within 11 seconds after the level of Cell 1 is changed back to the original level.

NOTE: The 11 seconds is derived from (t+15) seconds minimum cell reselection timer minus (t+2) seconds from the start of step k) up to the increase of the level of Cell 1. A further 2 seconds are subtracted to cover for any uncertainty introduced by the random access process occurring after step g).

3GPP TSG-T1 Meeting #10 ***Tdoc T1-010086***
Copenhagen, Denmark, 8-9 February, 2001

3GPP TSG-T WG1/SIG SWG Meeting #15 ***Tdoc T1S-010024***
Copenhagen, Denmark, 5th-7th February 20001

CR-Form-v3

CHANGE REQUEST

⌘ **34.123-1** **CR** **050** ⌘ rev **-** ⌘ Current version: **3.2.0** ⌘

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

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

Title:	⌘	Update to GMM test case.
Source:	⌘	SONY
Work item code:	⌘	***Date:*** ⌘ 5th Feb 2001
Category:	⌘ **F**	***Release:*** ⌘ R99

Use one of the following categories:
F *(essential 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 - modify the Expected Sequence for UMTS. - insert Specific message contents to keep consistency with other test items - correct some editorial mistakes.
Summary of change:	⌘	1) Modification of Packet paging procedure in the Expected Sequence. 2) Modification of CS signaling connection setup procedure in the Expected Sequence. 3) Removal of the sub-clause 12.6.2 “Test of ciphering mode setting”. 4) Modification of the “Network operation mode”. 5) Removal of the “UE operation mode B”. 6) Change the expression for the reference document. 7) Addition of the Specific message contents.
Consequences if not approved:	⌘	Inconsistencies with the core specification and other test items are left. Editorial mistakes are left.

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

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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 this document.

The terms 'PS/CS mode of operation' and 'PS mode of operation' are not used in this specification 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

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 ~~3G~~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

~~3G~~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~~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 only attached' Mobile identity = IMSI
4	<-		ATTACH ACCEPT	Attach result = 'PS attach' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	<-		~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = P-TMSI-2
7	->		~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~Service type = "paging response"
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	<-		~~PACKET PAGING REQUEST Or PAGING REQUEST TYPE 1~~PAGING TYPE1	Mobile identity = P-TMSI-2 ~~Both paging orders are for TBF establishment.~~ ~~PACKET PAGING REQUEST (used for NW mode III)~~ ~~PAGING REQUEST TYPE 1~~PAGING TYPE1 (used for NW-mode II).
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	<-	~~PACKET PAGING REQUEST Or PAGING REQUEST TYPE 1~~PAGING TYPE1	Mobile identity = P-TMSI-1 ~~Both paging orders are for TBF establishment. PACKET PAGING REQUEST (used for NW mode III)~~ PAGING ~~REQUEST~~ TYPE 1 (used for NW-mode II).
23	->	~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~Service type = "paging response"
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 27	SS UE		The SS is set in network operation mode II. 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

UE shall:

- initiate the PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on
- 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 is the IMSI and the Mobile identity in the ATTACH ACCEPT message is the P-TMSI.

  UE shall:

  - acknowledge the P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the P-TMSI.

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

  UE shall:

  - acknowledge the new P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the other P-TMSI.

  Case 3) The Mobile identity in the ATTACH REQUEST is the P-TMSI and the Mobile identity in the ATTACH ACCEPT message is the same P-TMSI.

  UE shall:

  - acknowledge the same P-TMSI by sending ATTACH COMPLETE message. Further communication UE - SS is performed by the same P-TMSI.

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.

Reference

~~3G~~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, cell B in MCC1/MNC1/LAC2/RAC1, cell C in MCC2/MNC1/LAC1/RAC1.

All three cells are operating in network operation mode II (in case of UE operation mode A)~~, or in network operation mode III (in case of UE operation mode C)~~.

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		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C ~~or B~~ (see ICS).
2	SS			The SS is set in network operation mode II ~~or III~~ 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 REJECT	GMM cause = 'Illegal UE'.
				The following messages are sent and shall be received on cell B.
6	SS			The SS deactivates cell A and activates cell B.
7	UE			Cell B is preferred by the UE.
8	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
9	UE			The UE initiates an attach by MMI or by AT command.
10	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell C.
11	SS			The SS deactivates cell B and activates cell C.
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 and initiates an attach (see ICS).
18	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
19	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
20	->		ATTACH COMPLETE	
21	UE			The UE is switched off or power is removed (see ICS).
22	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

Specific message contents

None.

12.2.1.2.5 Test requirements

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on
- check the GMM cause which is contained in the ATTACH REJECT message and stop timer T3310.
- set the PS update state to GU3 ROAMING NOT ALLOWD and delete stored P-TMSI, P-TMSI signature, RAI and PS ciphering key sequence number.
- not send the ATTACH REQUEST message to SS, even if there is an instruction of attach request from MMI or from AT command.

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

~~3G~~ 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) and cell B in MCC2/MNC1/LAC1/RAC1.
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		
				The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell A.
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 16.
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'
				The following messages are sent and shall be received on cell B.
6		SS		The SS deactivates cell A and activates cell B.
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				The SS deactivates cell B and activates cell A.
17	UE			The UE is set in UE operation mode A(see ICS) and the test is repeated from step 3 to step 15.

Specific message contents

None.

12.2.1.3.5 Test requirements

UE shall:

- initiate a PS attach procedure with information elements specified in the above Expected Sequence when UE is powered up or switched on.
- check the GMM cause which is contained in the ATTACH REJECT message and stop timer T3310.

- set the PS update state to GU3 ROAMING NOT ALLOWD.
- delete stored P-TMSI, P-TMSI signature, RAI and PS ciphering key sequence number.

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

~~3G~~ 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

Initial condition

System Simulator:

Four cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC1, cell C in MCC1/MNC1/LAC2/RAC1 and cell D in MCC2/MNC1/LAC1/RAC1. All four cells are operating in network operation mode II (in case of UE operation mode A)~~, or in network operation mode III (in case of UE operation mode C)~~.

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 '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 ~~or B~~ (see ICS).
2	SS			The SS is set in network operation mode II ~~or III~~ 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 REJECT	GMM cause = 'PLMN not allowed'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell B.
7	SS			The SS deactivates cell A and activates cell B.
8	UE			Cell B is preferred by the UE.
9	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell C.
10	SS			The SS deactivates cell B and activates cell C.
11	UE			Cell C is preferred by the UE.
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell D.
13	SS			The SS deactivates cell C and activates cell D.
14	UE			Cell D is preferred by the UE.
15	UE			The UE initiates an attach automatically, by MMI or by AT command.
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'

Specific message contents

None.

12.2.1.4.5 Test requirements

UE shall:

- initiate a PS attach procedure with information elements specified in the above Expected Sequence when UE is powered on or switched on.
- check the GMM cause which is contained in the ATTACH REJECT message and stop timer T3310.
- 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,

  UE shall:

  - not perform PS attach.
  - delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.
  - store the PLMN in the 'forbidden PLMN' list.

  Case2) UE is in the same PLMN, and this PLMN is not selected manually

  UE shall:

  - not perform PS attach.
  - delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.
  - store the PLMN in the 'forbidden PLMN' list.

  Case3) UE is in a new location area.

  UE shall:

  - perform PS attach.

  Case3) UE is in the new PLMN, and this PLMN is selected manually

  UE shall

  - perform PS attach.

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

12.2.1.5.1 Definition

12.2.1.5.2 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

~~3G~~3GPP ~~-~~TS 24.008 clause 4.7.3.1

12.2.1.5.3 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 ~~3G~~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.

12.2.1.5.4 Method of test

12.2.1.5.4.1 Test procedure 1

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1, cell B in

MCC1/MNC/LAC2/RAC1 and cell C in MCC1/MNC1/LAC1/RAC2.

All three cells are operating in network operation mode II~~III~~.

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 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		SS		The SS activates cell A.
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 19.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
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 = 'Roaming not allowed in this area'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell B.
7		SS		The SS Deactivates cell A and activates cell B.
8	UE			Cell B is preferred by the UE.
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-3
12		->	ATTACH COMPLETE	
13	UE			The UE initiates a PS detach (without power off) by MMI or by AT command .
14		->	DETACH REQUEST	Detach type = 'normal detach, PS detach'
15		<-	DETACH ACCEPT	
				The following messages are sent and shall be received on cell C.
16		SS		The SS deactivates cell B and activates cell C.
17	UE			Cell C is preferred by the UE.
18	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
19		SS		The SS is set in network operation mode II.
20	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 3 to step 18.

12.2.1.5.4.2 Test procedure 2

Initial condition

System Simulator:

One cell operating in network operation mode II.

User Equipment:

TheUE 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 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 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 attachupdating 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			The UE is set in UE operation mode C ~~or B~~ (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 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	->		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-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'

12.2.1.5.4.3 Test procedure 3

Initial condition

System Simulator:

Six cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC2/RAC1, cell C in MCC1/MNC1/LAC3/RAC1, cell D in MCC1/MNC1/LAC4/RAC1, cell E in MCC1/MNC1/LAC5/RAC1, cell F in MCC1/MNC1/LAC6/RAC1.
All six cells are operating in network operation mode II (in case of UE operation mode A)~~, or in network operation mode III (in case of UE operation mode C)~~.

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 '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 ~~or III~~ and activates cell A.
2	UE			The UE is set in UE operation mode C ~~or B~~ (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 REJECT	GMM cause = 'Roaming not allowed in this area'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
				The following messages are sent and shall be received on cell B.
7		SS		The SS deactivates cell A and activates cell B.
8	UE			Cell B is preferred by the UE.
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 REJECT	GMM cause = 'Roaming not allowed in this area'
12	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell C.
13		SS		The SS deactivates cell B and activates cell C.
14	UE			Cell C is preferred by the UE.
15	UE			The UE initiates an attach automatically, by MMI or by AT command.
16		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
17		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
18	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell D.
19		SS		The SS deactivates cell C and activates cell D.
20	UE			Cell D is preferred by the UE.
21	UE			The UE initiates an attach automatically, by MMI or by AT command.
22		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
23		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
24	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell E.
25		SS		The SS deactivates cell D and activates cell E.
26	UE			Cell E is preferred by the UE.
27	UE			The UE initiates an attach automatically, by MMI or by AT command.
28		->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
29		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'

30	UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds).
			The following messages are sent and shall be received on cell F.
31	SS		The SS deactivates cell E and activates cell F.
32	UE		Cell F is preferred by the UE.
33	UE		The UE initiates an attach automatically, by MMI or by AT command.
34	->	ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
35	<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
36	UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds)
			The following messages are sent and shall be received on cell E.
37	SS		The SS deactivates cell F and activates cell E.
38	SS		Cell E is preferred by the UE.
39	UE		The UE initiates an attach automatically, by MMI or by AT command.
40	UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds).
			The following messages are sent and shall be received on cell C.
41	SS		The SS deactivates cell E and activates cell C.
42	SS		Cell C is preferred by the UE.
43	UE		The UE initiates an attach automatically, by MMI or by AT command.
44	UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds).
			The following messages are sent and shall be received on cell A.
45	SS		The SS deactivates cell C and activates cell A.
46	SS		Cell A will be preferred by the UE.
47	UE		The UE initiates an attach automatically, by MMI or by AT command.
48	UE		No ATTACH REQUEST sent to SS (SS waits 30 seconds).

12.2.1.5.4.4 Test procedure4

Initial condition

System Simulator:

Two cells, cell A in MCC2/MNC1/LAC1/RAC1 (not HPLMN) and cell B in MCC1/MNC1/LAC1/RAC1 (HPLMN).
Both cells are operating in network operation mode II (in case of UE operation mode A~~), or in network operation mode III (in case of UE operation mode C)~~.

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. Two cells are then available. The cell with the weakest level belongs to the HPLMN. 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 ~~or B~~ (see ICS).
2		SS		The SS is set in network operation mode II ~~or III~~ 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-2
5		<-	ATTACH REJECT	GMM cause = 'Roaming not allowed in this area'
6	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds).
				The following messages are sent and shall be received on cell B.
7		SS		Activate cell B with a lower signal strength than cell A.
8	UE			The RF level of cell A is lowered until cell B is preferred by the UE.
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'

Specific message contents

12.2.1.5.5 Test requirements

UE shall:

- initiate a PS attach procedure with information elements specified in the above Expected Sequence when UE is powered up or switched on.
- check the GMM cause which is contained in the ATTACH REJECT message and stop timer T3310.
- not perform PS attach when UE is in the same location area.
- delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.
- store the LA in the 'forbidden location areas for roaming' list.
- perform PS attach when a new location area is entered.

- search for its HPLMN periodically.

When Switched off or when the USIM is removed,

UE shall:

- reset the 'forbidden location areas for roaming' list.

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

~~3G~~ 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 (access is granted).

12.2.1.6.4 Method of test

12.2.1.6.4.1 Test procedure1

Initial condition

A random access class x (0-15) is selected. 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~~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.
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 2 to step 11.

12.2.1.6.4.2 Test procedure2

Initial condition

A random access class x (0-15) is selected. 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 has access class x barred, cell B in MCC1/MNC1/LAC1/RAC1 has access class x not barred.
Both cells are operating in network operation mode II (in case of UE operation mode A)~~, or in network operation mode III (in case of UE operation mode C)~~.

User Equipment:

The UE has a valid P-TMSI-1, 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 SS			The USIM is programmed with access class x. The following messages are sent and shall be received on cell A.
2	SS			The SS is set in network operation mode II ~~or III~~ and activates cell A.
3	UE			The UE is set in UE operation mode C ~~or B~~ (see ICS).
4	UE			The UE is powered up or switched on and attempts to initiate an attach (see ICS).
5	UE			No ATTACH REQUEST sent to SS, as access class X is barred (SS waits 30 seconds).
				The following messages are sent and shall be received on cell B.
6	SS			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.
7	UE			The UE automatically initiates an attach.
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'

Specific message contents

None.

12.2.1.6.5 Test requirements

UE shall:

- perform the following actions depending on the UE access class X.

Case 1) The UE access class X is barred,

UE shall:

- not perform a PS attach procedure.
- stay in the current serving cell.
- apply normal cell reselection process.

Case 2) The UE access class X is granted or serving cell is changed,

UE shall:

- initiate 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

~~3G~~ 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 and cell B in MCC1/MNC1/LAC1/RAC2.
Both cells are operating in network operation mode II (in case of UE operation mode A)~~, or in network operation mode III (in case of UE operation mode C)~~.

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 ~~or B~~ (see ICS).
2		SS		The SS is set in network operation mode II ~~or III~~ 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		SS		No response to the ATTACH REQUEST message is given by the SS.
		SS		The following messages are sent and shall be received on cell B.
6		SS		The SS deactivates cell A and activates cell B. 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'

Specific message contents

None.

12.2.1.7.5 Test requirements

UE shall:

- abort a PS attach procedure when a change of cell into a new routing area is performed before ATTACH ACCEPT or ATTACH REJECT message is received by the UE.

- re-initiate a 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

~~3G~~ 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~~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	SS			The SS is set in network operation mode II.
8	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

UE shall:

- initiate a PS attach procedure with information elements specified in the above Expected Sequence when UE is powered up or switched on.

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

~~3G~~ 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 ~~or B~~ (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

UE shall:

initiate a PS attach procedure with information elements specified in the above Expected Sequence when UE is powered up or switched on.

Case1) GMM cause is not re-attach

When a 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) GMM cause is re-attach

When a 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

~~3G~~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 REQUEST TYPE 1~~PAGING TYPE1	Mobile identity = IMSI Paging order is for RRC-connection.
7	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
8	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
9	->		RRC CONNECTION SETUP COMPLETE	
~~9~~10	->		PAGING RESPONSE	Mobile identity = IMSI
~~10~~11	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
12	->		RRC CONNECTION RELEASE COMPLETE	
~~11~~13	<-		~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~ ~~Comment: A TBF will be established on lower layers.~~
~~12~~14	->		~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = "paging response" ~~Comment: The TBF will be released on lower layers.~~
~~13~~15	UE			The UE is switched off or power is removed (see ICS).
~~14~~16	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
~~15~~17	UE			The UE is powered up or switched on and initiates an attach (see ICS).
~~16~~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
~~17~~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
~~18~~20	->		ATTACH COMPLETE	
~~19~~21	<-		GMM INFORMATION	Message sent with P-TMSI-2
~~19b~~21b	->		GMM STATUS	Message sent in case the UE does not support reception of GMM information message Cause #97
~~20~~22	<-		~~PAGING REQUEST TYPE 1~~PAGING TYPE1	Mobile identity = TMSI-1 Paging order is for RRC-connection.
~~21~~23	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
~~22~~24	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	

25	->	RRC CONNECTION SETUP COMPLETE	
~~23~~26	->	PAGING RESPONSE	Mobile identity = TMSI-1
~~24~~27	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
28	->	RRC CONNECTION RELEASE COMPLETE	
~~25~~29	<-	~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = P-TMSI-2 ~~Paging order is for TBF establishment.~~
~~26~~30	->	~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~ service type = "paging response"
~~27~~31	<-	~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
~~28~~32	UE		No response from the UE to the request. This is checked for 10 seconds.
~~29~~33	UE		The UE is switched off or power is removed (see ICS).
~~30~~34	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
~~31~~35	UE		The UE is powered up or switched on and initiates an attach (see ICS).
~~32~~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
~~33~~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
~~34~~38	<-	~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = P-TMSI-2 ~~Paging order is for TBF establishment.~~
~~35~~39	->	~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = "paging response"
~~36~~40	UE		The UE is switched off or power is removed (see ICS).
~~37~~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

UE shall:

- initiate a PS attach procedure with information elements specified in the above Expected Sequence when UE is powered up or switched on.

Case 1) SS accept the combined PS attach procedure (signalled by an IMSI) and allocates a P-TMSI.

UE shall

- acknowledge the P-TMSI and continue communication with the P-TMSI.

Case 2) SS accepts the combined PS attach procedure (signalled by P-TMSI) and reallocates a new P-TMSI.

UE shall:

- acknowledge the new P-TMSI and continue communication with the new P-TMSI.

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.

UE shall:

- continue communication with the previously used P-TMSI.

Case 4) SS accepts the combined PS attach procedure and determines that IMSI shall be used in CS operations.

UE shall:

- continue communication with the IMSI for CS operations.

Case 5) SS accepts the combined PS attach procedure and determines that a TMSI shall be used in CS operations.

UE shall:

- continue communication with the TMSI for CS operations.

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

~~3G~~3GPP TS 24.008 clause 4.7.3.2

12.2.2.2.3 Test purpose

Test propose1

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 porpose2

To test the behaviour of the UE 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 porpose1

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 TMSI status = no valid TMSI available
4	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature GMM cause = 'IMSI unknown in HLR'
5	->		ATTACH COMPLETE	
6	<-		~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = IMSI Paging order is for RRC-connection.
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 porpose2

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 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. This 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. CS services are not possible as an IMSI attach procedure is not performed.

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
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 TMSI status = no valid TMSI available
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 TMSI status = no valid TMSI available
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	SS			The SS verifies that the time between the requests are T3311
13	->		ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-4 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available
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 TMSI status = no valid TMSI available

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)
19	<-	~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = IMSI Paging order is for RRC-connection.
20	UE		The UE shall not initiate an RRC connection. This is checked during 3 seconds.
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
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 TMSI status = no valid TMSI available
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 TMSI status = no valid TMSI available
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	SS		The SS verifies that the time between the requests are T3311
34	->	ROUTING AREA UPDATE REQUEST	Update type = 'Combined RA / LA updating with IMSI attach' P-TMSI-4 signature Routing area identity = RAI-1 TMSI status = no valid TMSI available

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	<-	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)
39	SS		The SS verifies that the time between the requests are T3311
40	UE		An automatic MM IMSI attach procedure is initiated.
41	->	~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
42	<-	~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
43	->	RRC CONNECTION SETUP COMPLETE	
~~43~~44	->	LOCATION UPDATING REQ	Location updating type = IMSI attach.
~~44~~45	<-	LOCATION UPDATING ACC	The SS allocates a new TMSI.
~~45~~46	->	TMSI REALLOCATION COMP	Location updating type = IMSI attach.
~~46~~47	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
48	->	RRC CONNECTION RELEASE COMPLETE	
~~47~~49	<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 Paging order is for RRC-connection.
~~48~~50	->	~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
~~49~~51	<-	~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
52	->	RRC CONNECTION SETUP COMPLETE	
~~50~~53	->	PAGING RESPONSE	Mobile identity = TMSI-1
~~51~~54	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
55	->	RRC CONNECTION RELEASE COMPLETE	
~~52~~56	UE		The UE is switched off or power is removed (see ICS).
~~53~~57	->	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

UE shall:

- initiate a Combined PS attach procedure with information elements specified in the above Expected Sequence when UE is powered up or switched on.
- check the GMM cause which is contained in the ATTACH ACCEPT message received from SS.
- perform the following actions depending on the GMM cause.

  Case1) GMM cause = 'IMSI unknown in HLR'

  UE shall

  - delete stored TMSI, LAI, and ciphering key sequence number.
  - consider USIM invalid for non-PS service until power is switching off or USIM is removed.

  Case2) GMM cause = 'MSC temporarily not reachable' or 'Network failure' or 'Congestion',

  UE shall:

  - stop the timer T3310(if running), and shall increment the routing area update attempt counter.
  - perform the following actions depending on the conditions described below.

    Case 2-1) the routing area updating attempt counter is less than 5 and the stored RAI is equal to the RAI of the current serving cell and the GMM update status is equal to GU1 UPDATED:

    UE shall

    - keep the GMM update status GU1 UPDATED.
    - change state to GMM-REGISTERED.ATTEMPTING-TO-UPDATE-MM.
    - start timer T3311. When timer T3311 expires, the combined routing area update procedure indicating "combined RA/LA updating with IMSI attach" is triggered again.

    Case 2-2) the routing area updating attempt counter is greater than or equal to 5

    UE shall

    - start timer T3302 and change state to GMM-REGISTERED.ATTEMPTING-TO-UPDATE-MM

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

~~3G~~ 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 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 attach for non-PS services. The UE does not answer to paging orders for PS. The UE attach for PS services. Paging orders for PS are answered.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode C (see ICS) and configured not to perform a PS attach.
2	UE			The UE is powered up or switched on. No PS attach is performed (see ICS).
3	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
4	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
5	->		RRC CONNECTION SETUP COMPLETE	
~~5~~6	->		LOCATION UPDATING REQ	Location updating type = IMSI attach.
~~6~~7	<-		LOCATION UPDATING ACC	The SS allocates a new TMSI.
~~7~~8	->		TMSI REALLOCATION COMP	Location updating type = IMSI attach.
~~8~~9	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
10	->		RRC CONNECTION RELEASE COMPLETE	
~~9~~11	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
~~10~~12	UE			No response from the UE to the request. This is checked for 10 seconds.
~~11~~13	UE			The UE is triggered to perform a PS attach (in combination with IMSI attach).
~~12~~14	->		ATTACH REQUEST	Attach type = 'PS attach while IMSI attached' Mobile identity =P-TMSI-1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-1 TMSI status = valid TMSI available
~~13~~15	<-		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
~~14~~16	->		ATTACH COMPLETE	
~~15~~17	<-		~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
~~16~~18	->		~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = "paging response"
~~17~~19	UE			The UE is switched off or power is removed (see ICS).
~~18~~20	->		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.

UE shall:

- perform the combined PS attach procedure when UE want to attach for PS service.

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

~~3G~~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, cell B in MCC1/MNC1/LAC1/RAC2, cell C in MCC2/MNC1/LAC1/RAC1.
All three cells are 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
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		
				The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell A.
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = valid TMSI available
5	<-		ATTACH REJECT	GMM cause 'Illegal ME'.
6	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = IMSI Paging order is for RRC-connection.
7	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
8	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
9	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell B.
10		SS		The SS deactivates cell A and activates cell B.
11	UE			Cell B is preferred by the UE.
12	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
13	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = IMSI Paging order is for RRC-connection.
14	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 C.
15		SS		The SS deactivates cell B and activates cell C.
16	UE			Cell C is preferred by the UE.
17	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
18	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = IMSI ~~Paging order is for TBF establishment.~~
19	UE			No response from the UE to the request. This is checked for 10seconds.
20	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
21	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
22	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' 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
24	->		ATTACH COMPLETE	
25	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 Paging order is for RRC-connection.
26	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	

27	<-	~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
28	->	RRC CONNECTION SETUP COMPLETE	
~~28~~29	->	PAGING RESPONSE	Mobile identity = TMSI-1
~~29~~30	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
31	->	RRC CONNECTION RELEASE COMPLETE	
~~30~~32	UE		The UE is switched off or power is removed (see ICS).
~~31~~33	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.2.2.4.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.
- check the GMM cause which is contained in the ATTACH REJECT message and stop the timer T3310.
- set the PS update status to GU3 ROAMING NOT ALLOWED.
- delete the stored P-TMSI, P-TMSI signature, RAI and PS ciphering key sequence number.
- consider USIM invalid for PS and non-PS services until power is switched off or USIM is removed.

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

~~3G~~ 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 and cell B in MCC2/MNC1/LAC1/RAC1.
Both cells are 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 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		
				The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell A.
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = valid TMSI available
5	<-		ATTACH REJECT	GMM cause 'PS services and non-PS services not allowed'
6	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
7	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = IMSI Paging order is for RRC-connection.
8	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
10	->			No response from the UE to the request. This is checked for 10 seconds
11	UE			Cell B is preferred by the UE.
12	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
13	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
14	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = IMSI Paging order is for RRC-connection.
15	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
16	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 ~~Paging order is for TBF establishment.~~
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 on and initiates an attach (see ICS).
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 Mobile identity = TMSI-1 Routing area identity = RAI-2
22	->		ATTACH COMPLETE	
23	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 Paging order is for RRC-connection.
24	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
25	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
26	->		RRC CONNECTION SETUP COMPLETE	
~~26~~27	->		PAGING RESPONSE	Mobile identity = TMSI-1

~~27~~28	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
29	->	RRC CONNECTION RELEASE COMPLETE	
~~28~~30	<-	~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = TMSI-1 ~~Paging order is for TBF establishment.~~
~~29~~31	->	~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~ Service type = "paging response"
~~30~~32	UE		The UE is switched off or power is removed (see ICS).
~~31~~33	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.2.2.5.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.
- check the GMM cause which is contained in the ATTACH REJECT message and stop the timer T3310.
- set the PS update status to GU3 ROAMING NOT ALLOWED.
- delete the stored P-TMSI, P-TMSI signature, RAI and PS ciphering key sequence number.
- consider USIM invalid for PS and non-PS services until power is switched off or USIM is removed.

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

~~3G~~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 and cell B in MCC2/MNC1/LAC1/RAC1.
Both cells are 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 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		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell 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 =P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2 TMSI status = valid TMSI available
4	<-		ATTACH REJECT	GMM cause 'PS services not allowed'
5	UE			An automatic MM IMSI attach procedure is initiated.
6	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
7	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
8	->		RRC CONNECTION SETUP COMPLETE	
~~8~~9	->		LOCATION UPDATING REQ	Location updating type = IMSI attach.
~~9~~10	<-		LOCATION UPDATING ACC	The SS allocates TMSI-2.
~~0~~11	->		TMSI REALLOCATION COMP	Location updating type = IMSI attach.
~~11~~12	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
13	->		RRC CONNECTION RELEASE COMPLETE	
~~12~~14	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-2 Paging order is for RRC-connection.
~~13~~15	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
~~14~~16	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
17	->		RRC CONNECTION SETUP COMPLETE	
~~15~~18	->		PAGING RESPONSE	Mobile identity = TMSI-2
~~16~~19	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS ~~signalling~~` ignaling link.
20	->		RRC CONNECTION RELEASE COMPLETE	
				The following messages are sent and shall be received on cell B.
~~17~~21		SS		The SS deactivates cell A and activates cell B.
~~18~~22	UE			Cell B is preferred by the UE.
~~19~~23	UE			A location updating procedure is initiated.
~~20~~24	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
~~21~~25	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
26	->		RRC CONNECTION SETUP COMPLETE	
~~22~~27	->		LOCATION UPDATING REQ	Location updating type = normal.
~~23~~28	<-		LOCATION UPDATING ACC	The SS allocates TMSI-1.
~~24~~29	->		TMSI REALLOCATION COMP	
~~25~~30	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
31	->		RRC CONNECTION RELEASE COMPLETE	
~~26~~32	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 Paging order is for RRC-connection.
~~27~~33	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	

~~28~~34	<-	~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
35	->	RRC CONNECTION SETUP COMPLETE	
~~29~~36	->	PAGING RESPONSE	Mobile identity = TMSI-1
~~30~~37	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
38	->	RRC CONNECTION RELEASE COMPLETE	
~~31~~39	<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 ~~Paging order is for TBF establishment.~~
~~32~~40	UE		No response from the UE to the request. This is checked for 10seconds.
~~33~~41	UE		If possible (see ICS) switch off is performed. Otherwise the power is removed.
~~34~~42	UE		The UE is powered up or switched on and initiates an attach (see ICS).
~~35~~43	->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
~~36~~44	<-	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
~~37~~45	->	ATTACH COMPLETE	
~~38~~46	<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-2 Paging order is for RRC-connection.
~~39~~47	->	~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
~~40~~48	<-	~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
49	->	RRC CONNECTION SETUP COMPLETE	
~~41~~50	->	PAGING RESPONSE	Mobile identity = TMSI-2
~~42~~51	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
52	->	RRC CONNECTION RELEASE COMPLETE	
~~43~~53	UE		The UE is switched off or power is removed (see ICS).
~~44~~54	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.2.2.6.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.
- check the GMM cause which is contained in the ATTACH REJECT message and stop the timer T3310.
- set the PS update status to GU3 ROAMING NOT ALLOWED.
- delete stored P-TMSI, P-TMSI signature, RAI and PS ciphering key sequence number.
- consider USIM invalid for PS services until power is switched off or USIM is removed.
- perform an MM IMSI attach procedure, if the UE is PS class A.

12.2.2.7 Combined PS attach / rejected / location area not allowed

12.2.2.7.1 Definition

12.2.2.7.2 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'.

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

~~3G~~3GPP ~~-~~TS 24.008 clauses 4.7.3.2

12.2.2.7.3 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.

12.2.2.7.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC2, cell C in MCC1/MNC1/LAC2/RAC1.
All cells are 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 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		The SS activates cell A.
2	UE			The UE is set in UE operation mode A (see ICS).
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
4		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = valid TMSI available
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~~PACKET PAGING REQUEST~~	Mobile identity = TMSI Paging order is for RRC-connection.
8	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9		<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
10		->		No response from the UE to the request. This is checked for 10 seconds
				The following messages are sent and shall be received on cell B.
11		SS		The SS deactivates cell A and activates cell B.
12	UE			Cell B is preferred by the UE.
13	UE			No ATTACH REQUEST sent to SS (SS waits 30 seconds)
14	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
15		<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = IMSI Paging order is for RRC-connection.
16	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
17		<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 ~~Paging order is for TBF establishment.~~
18	UE			No response from the UE to the request. This is checked for 10seconds.
19	UE			The UE initiates an attach by MMI or AT command.
20				No attach is performed by the UE. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell C.
21		SS		The SS deactivates cell B and activates cell C.
22	UE			Cell C is preferred by the UE.
23		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
24		<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-3
25		->	ATTACH COMPLETE	
26		<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 Paging order is for RRC-connection.
27		->	~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	

28	<-	~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
29	->	RRC CONNECTION SETUP COMPLETE	
~~29~~30	->	PAGING RESPONSE	Mobile identity = TMSI-1
~~30~~31	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
32	->	RRC CONNECTION RELEASE COMPLETE	
~~31~~33	<-	~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = TMSI-1 ~~Paging order is for TBF establishment.~~
~~32~~34	->	~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~ Service type = “paging response”
~~33~~35	UE		The UE is switched off or power is removed (see ICS).
~~34~~36	->	DETACH REQUEST	Message not sent if power is removed. Detach type = ‘power switched off, combined PS / IMSI detach’
			The following messages are sent and shall be received on cell B.
~~35~~37	UE		The SS deactivates cell C and activates cell B. Cell B is preferred by the UE.
~~36~~38	UE		The UE is powered up or switched on and initiates an attach (see ICS).
~~37~~39	->	ATTACH REQUEST	Attach type = ‘Combined PS / IMSI attach’ Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-3 TMSI status = valid TMSI available
~~38~~40	<-	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
~~39~~41	->	ATTACH COMPLETE	
~~40~~42	<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-2 Paging order is for RRC-connection.
~~41~~43	->	~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
~~42~~44	<-	~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
45	->	RRC CONNECTION SETUP COMPLETE	
~~43~~46	->	PAGING RESPONSE	Mobile identity = TMSI-2
~~44~~47	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
48	->	RRC CONNECTION RELEASE COMPLETE	
~~45~~49	<-	~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = TMSI-1 ~~Paging order is for TBF establishment.~~
~~46~~50	->	~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = “paging response”
~~47~~51	UE		The UE is switched off or power is removed (see ICS).
~~48~~52	->	DETACH REQUEST	Message not sent if power is removed. Detach type = ‘power switched off, combined PS / IMSI detach’

Specific message contents

None.

12.2.2.7.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.
- perform the following action depending on UE location.

When in the same location area, UE shall

- check the CMM cause which is contained in the ATTACH REJECT message and stop timer T3310.
- delete any stored LAI, CKSN, TMSI, RAI, PS-CKSN, P-TMSI and P-TMSI signature.
- store the LAI or the PLMN identity in the appropriate forbidden list("forbidden location areas for regional provision of service").

When a new location area is entered, UE shall

- perform combined PS attach when UE entered a new location area.
- delete the list of forbidden LAs when power is switched off.

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' 'IMEI not accepted' 'Illegal ME' '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

~~3G~~ 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

Test procedure

The UE initiates a combined PS attach procedure (attempt counter zero).

The SS rejects the attach with a random cause code.

The UE initiates a new combined PS attach procedure (attempt counter one) after T3311 expires.

The SS rejects the attach with a random cause code.

The UE initiates a new combined PS attach procedure (attempt counter two) after T3311 expires.

The SS rejects the attach with a random cause code.

The UE initiates a new combined PS attach procedure (attempt counter three) after T3311 expires.

The SS rejects the attach with a random cause code.

The UE initiates a new combined PS attach procedure (attempt counter four) after T3311 expires.

The SS rejects the attach with a random cause code.

The UE initiates a new combined PS attach procedure with attempt counter five (after T3311 expires).

The SS rejects the attach with a random cause code. The UE shall not perform a new successful attach procedure after 15 seconds.

The UE initiates a combined PS attach procedure with attempt counter zero after T3302 expires without P-TMSI, P-TMSI signature, PS CKSN and RAI.

T3302; set to 10 minutes.

T3311; 15 seconds.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity =P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = valid TMSI available
4	<-		ATTACH REJECT	Random GMM cause
5	SS			The SS verifies that the time between the attach requests is T3311
6	->		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
7	<-		ATTACH REJECT	Random GMM cause
8	SS			The SS verifies that the time between the attach requests is T3311
9	->		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
10	<-		ATTACH REJECT	Random GMM cause
11	SS			The SS verifies that the time between the attach requests is T3311
12	->		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
13	<-		ATTACH REJECT	Random GMM cause
14	SS			The SS verifies that the time between the attach requests is T3311
15	->		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
16	<-		ATTACH REJECT	Random GMM cause
17	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
18	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI Paging order is for RRC-connection.
19	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
20	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 ~~Paging order is for TBF establishment.~~
21	UE			No response from the UE to the request. This is checked for 10seconds.
22	SS			The SS verifies that the UE does not attempt to attach for T3302 .
23	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
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~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 Paging order is for RRC-connection.
27	->	~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
28	<-	~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
29	->	RRC CONNECTION SETUP COMPLETE	
~~29~~30	->	PAGING RESPONSE	Mobile identity = TMSI-1
~~30~~31	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
32	->	RRC CONNECTION RELEASE COMPLETE	
~~31~~33	<-	~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = TMSI-1 ~~Paging order is for TBF establishment.~~
~~32~~34	->	~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~ Service type = “paging response”
~~33~~35	UE		The UE is switched off or power is removed (see ICS).
~~34~~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

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.
- 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

  UE shall:

  - repeat the combine PS attach procedure after the timer T3311 timeout.

  Case2) A combined PS attach procedure is rejected with the attempt counter five

  UE shall:

  - delete the stored TMSI, LAI, CKSN, P-TMSI, P-TMSI signature, PS CKSN and RAI and
  - start the timer T3302.

  Case3) The T3302 expires

  UE shall:

  - re-initiate a new combined PS attach procedure.

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

~~3G~~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 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 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. CS services are not possible as an IMSI attach procedure is not performed.

The UE initiates a combined PS attach procedure. The SS does not answer the combined PS attach procedure, but initiates a combined PS detach procedure (cause re-attach). The UE shall ignore the combined PS detach procedure and continue with the combined PS attach. CS services are also possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode B (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
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	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = IMSI Paging order is for RRC-connection.
8	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
9	UE			The UE is attached by MMI or AT command
10	->		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
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 TMSI status = valid TMSI available
15	->		ATTACH COMPLETE	
16	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-2 Paging order is for RRC-connection.
17	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
18	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
19	->		RRC CONNECTION SETUP COMPLETE	
~~19~~20	->		PAGING RESPONSE	Mobile identity = TMSI-2
~~20~~21	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
22	->		RRC CONNECTION RELEASE COMPLETE	
~~21~~23	<-		~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = TMSI-2 ~~Paging order is for TBF establishment.~~
~~22~~24	->		~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~ Service type = "paging response"
~~23~~25	UE			The UE is switched off or power is removed (see ICS).
~~24~~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

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.
- perform the following actions depending on the Detach type described below.

  Case1) Detach type is not re-attach

  UE shall:

  - terminate the combined PS attach procedure.
  - continue with the combined PS detach procedure.

  Case2) Detach type is re-attach

  UE shall:

  - ignore the combined PS detach procedure.
  - continue with the combined PS attach procedure.

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

~~3G~~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

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After the PS attach procedure is completed, 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

~~3G~~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~~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 and activates a PDP context.

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 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	No new mobile identity assigned. P-TMSI and P-TMSI signature not included. Attach result = 'PS only attached' 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, PS detach'
8	<-		DETACH ACCEPT	
9	<-		PAGING TYPE1~~PACKET PAGING REQUEST Or PAGING REQUEST TYPE 1~~	Mobile identity = P-TMSI-1 ~~Both paging orders are for TBF establishment.~~ PAGING TYPE1~~PACKET PAGING REQUEST (used for NW mode III)~~ ~~PAGING REQUEST TYPE 1~~ (used for NW-mode II).
10	UE			No response from the UE to the request. This is checked for 10 seconds.
11	SS			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 2 to step 10.

Specific message contents

None.

12.3.1.2.5 Test requirements

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After the PS attach procedure is completed, UE shall:

- sends the DETACH REQUEST message(without power off) to SS.
- start timer T3321.

When UE receives the DETACH ACCEPT message from SS before the timer T3321 is not expired, UE shall:

- stop timer T3321.

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

~~3G~~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~~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 C Yes/No
UE operation mode A 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 T3311 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 T3311 expires. The SS does not answer with DETACH ACCEPT message before T3321 timeout.

The UE initiates a new PS detach procedure (attempt counter three) after T3311 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 T3311 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 T3311 expires). 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.

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 22.
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	->		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, PS detach'
8	SS			No response is given from the SS.
9	SS			The SS verifies that the time between the detach requests is 15 seconds
10	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
11	SS			No response is given from the SS.
12	SS			The SS verifies that the time between the detach requests is 15 seconds
13	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
14	SS			No response is given from the SS.
15	SS			The SS verifies that the time between the detach requests is 15 seconds
16	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
17	SS			No response is given from the SS.
18	SS			The SS verifies that the time between the detach requests is 15 seconds
19	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
20	SS			No response is given from the SS.
	SS			The SS verifies that the time between the detach requests is 15 seconds
21	->		DETACH REQUEST	Detach type = 'normal detach, PS detach'
22	SS			No response is given from the SS.
23	SS			The SS is set in network operation mode II.
24	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 2 to step 22.

Specific message contents

None.

12.3.1.3.5 Test requirements

UE shall:

- initiate a PS attaché procedure with the information elements specified in the above Expected Sequence when the UE is powered up or switched on.

After the PS attach procedure is completed, UE shall:

- initiate a PS detach procedure(without power off).
- start timer T3321.

When a T3221 expires with the attempt counter less than five, UE shall:

- initiate a new PS detach procedure.
- increment the attempt counter.
- re-start timer T3321.

When a T3221 expires with the attempt counter five, UE shall:

- not repeat the 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

~~3G~~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 UE performs a PS attach.

The UE initiates a PS detach. The SS initiates a P-TMSI REALLOCATION COMMAND message, a GMM STATUS message and a GMM INFORMATION message. The UE shall ignore the GMM common messages and continue with the PS detach procedure.

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 ~~or B~~ (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'
8	SS			The SS sends a P-TMSI REALLOCATION COMMAND message
9	<-		P-TMSI REALLOCATION COMMAND	
10	UE			The UE ignores the message.
11	SS			The SS sends a GMM STATUS message
12	<-		GMM STATUS	
13	UE			The UE ignores the message.
14	SS			The SS sends a GMM INFORMATION message
15	<-		GMM INFORMATION	
16	UE			The UE ignores the message.
17	<-		DETACH ACCEPT	The SS responds to the DETACH REQUEST
18	<-		PAGING TYPE1~~PAGING REQUEST TYPE 1~~	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
19	UE			No response from the UE to the request. This is checked for 10 seconds.

Specific message contents

None.

12.3.1.4.5 Test requirements

UE shall:

- initiate a PS attaché procedure with the information elements specified in the above Expected Sequence when the UE is powered up or switched on.

After the PS attach procedure is completed, UE shall:

- initiate a PS detach procedure(without power off).

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.

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

~~3G~~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

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After the PS attach procedure is completed, UE shall:

- send the DETACH REQUEST message to SS with the Detach type = 'power switched off, combined PS / IMSI detach' after the PS attach procedure is completed.

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

~~3G~~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

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~~PACKET PAGING REQUEST~~	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
10	UE			No response from the UE to the request. This is checked for 10 seconds.
11	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = IMSI Paging order is for RRC connection.
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

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After the combined PS attach procedure is completed, UE shall:

- sends the DETACH REQUEST message(UE not switched off) to SS.
- shall start timer T3321.

When the UE receive the DETACH ACCEPT message from SS before the timer T3321 is not expired, the UE shall:

- stop timer T3321.

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

~~3G~~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
MMI controlled attach / detach procedures for non-PS services 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	<-		~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
10	->		~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = "paging response"
11	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 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'' P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = valid TMSI available
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~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 Paging order is for RRC connection.
18	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
19	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
20	->		RRC CONNECTION SETUP COMPLETE	
~~20~~21	->		PAGING RESPONSE	Mobile identity = TMSI-1
~~21~~22	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
23	->		RRC CONNECTION RELEASE COMPLETE	
~~22~~24	UE			The UE is switched off or power is removed (see ICS).
~~23~~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

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After the combined PS attach procedure is completed, UE shall:

- sends the DETACH REQUEST message(UE not switched off) to SS.
- start timer T3321.

When the UE receives the DETACH ACCEPT message from SS before the timer T3321 is not expired, the UE shall:

- stop timer T3321.

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

~~3G~~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 and cell B in MCC1/MNC1/LAC1/RAC2.
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 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 Ms 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		The SS activates cell A.
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
				The following messages are sent and shall be received on cell B.
10		SS		The SS deactivates cell A and activates cell B. 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' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = valid TMSI available
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	

Specific message contents

None.

12.3.1.8.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After the combined PS attach procedure is completed, UE shall:

- initiate a PS detach.

When a change of cell into a new routing area is performed before DETACH ACCEPT message by the UE, UE shall:

- abort a PS detach procedure.
- re-initiate a PS detach procedure after successfully performing a routing area updating 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

~~3G~~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

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~~PACKET PAGING REQUEST~~	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
12	UE			No response from the UE to the request. This is checked for 10 seconds.
13	<-		PAGING TYPE1~~PAGING REQUEST TYPE 1~~	Mobile identity = TMSI-1 Paging order is for RRC connection.
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

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After the combined PS attach procedure is completed, UE shall:

- initiate a PS detach procedure.

When the UE receive DETACH REQUEST message from SS before UE initiated PS detach procedure has been completed, UE shall:

- send the DETACH ACCEPT message to SS

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

3G3GPP 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), or in network operation mode III (in case of UE operation mode C).

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 ~~or III~~.
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	UE			The UE initiates a PS detach (without power off) by MMI or AT command.
8		<-	DETACH REQUEST	Detach type = 're-attach not required'
9		->	DETACH ACCEPT	
10		<-	PAGING TYPE1~~PACKET PAGING REQUEST Or PAGING REQUEST TYPE 1~~	Mobile identity = P-TMSI-1 ~~Both paging orders are for TBF establishment.~~ PAGING TYPE1 ~~PACKET PAGING REQUEST (used for NW mode III)~~ ~~PAGING REQUEST TYPE 1~~ (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

UE shall:

- initiate PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

When UE receives the DETACH REQUEST message from SS and the detach type IE indicates 're-attach not required', the UE shall

- deactivate the PDP context and the logical link(s).
- send DETACH ACCEPT message to SS.

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

~~3G~~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 order 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) and cell B in MCC2/MNC1/LAC1/RAC1.
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		
				The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell A.
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 19.
3	UE			The UE is powered up or switched on and initiates an attach (see ICS). Cell A is preferred by the UE.
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	
				The following messages are sent and shall be received on cell B.
9		SS		The SS deactivates cell A and activates cell B.
10	UE			Cell B is preferred by the UE.
11	UE			No ATTACH REQUEST sent to the SS (SS waits 30 seconds).
12	UE			If possible (see ICS) USIM removal is performed. Otherwise if possible (see ICS) switch off is performed. Otherwise the power is removed.
13	UE			The UE gets the USIM replaced, is powered up or switched on and initiates an attach (see ICS).
14	->		ATTACH REQUEST	Attach type = 'PS attach' Mobile identity = IMSI
15	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-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'
19				The SS deactivates cell B and activates cell A.
20	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 3 to step 18.

Specific message contents

None.

12.3.2.2.5 Test requirements

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After the completion of the PS attach procedure, and when UE receives the DETACH REQUEST message (Detach type = 're-attach not required', Cause = 'PS services not allowed') from SS, UE shall:

- delete the stored P-TMSI, P-TMSI signature, RAI and PS ciphering key sequence number.
- consider the USIM as invalid for PS service until power is switched off or USIM is removed.

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

~~3G~~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
MMI controlled attach / detach procedures for non-PS services 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	<-		~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
10	->		~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = "paging response"
11	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = IMSI 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 (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 TMSI status = no valid TMSI available
15	<-		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
16	->		ROUTING AREA UPDATE COMPLETE	
17	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 Paging order is for RRC-connection.
18	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
19	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
20	->		RRC CONNECTION SETUP COMPLETE	
~~20~~21	->		PAGING RESPONSE	Mobile identity = TMSI-1
~~21~~22	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
23	->		RRC CONNECTION RELEASE COMPLETE	
~~22~~24	UE			The UE is switched off or power is removed (see ICS).
~~23~~25	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.3.2.3.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After the completion of the PS attach procedure, UE shall:

- receive DETACH REQUEST message(Detach type = 'IMSI detach') from SS.
- not deactivate the PDP context.
- and send the DETACH ACCEPT message to SS.

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

~~3G~~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 detach for PS and non-PS services. The UE automatically performs a new combined PS attach procedure (for PS and non-PS services) and PS and CS services are again possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is set in UE operation mode A (see ICS).
2	UE			The UE is powered up or switched on and initiates an attach (see ICS).
3	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1 TMSI status = valid TMSI available
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 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-1 TMSI status = valid TMSI available
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	<-		~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = P-TMSI-2 ~~Paging order is for TBF establishment.~~
13	->		~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = "paging response"
14	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 Paging order is for RRC-connection.
15	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
16	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
17	->		RRC CONNECTION SETUP COMPLETE	
~~17~~18	->		PAGING RESPONSE	Mobile identity = TMSI-1
~~18~~19	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
20	->		RRC CONNECTION RELEASE COMPLETE	
~~19~~21	UE			The UE is switched off or power is removed (see ICS).
~~20~~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

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After the completion of the combined PS attach procedure, UE shall:

- deactivate the PDP context and the logical link(s).
- send DETACH ACCEPT message to SS.

After UE completed PS detach procedure, UE shall:

- initiate a combined PS attach procedure.

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

~~3G~~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 MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC2, cell C in MCC1/MNC1/LAC2/RAC1.
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		The SS activates cell A.
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		<-	DETACH REQUEST	Detach type = 're-attach not required' Cause 'Location Area not allowed'
8		->	DETACH COMPLETE	
9	UE			No LOCATION UPDATING REQ with type 'IMSI attach' is sent to the SS (SS waits 30 seconds).
10		<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = IMSI Paging order is for RRC-connection.
11	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
12		<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
13		->		No response from the UE to the request. This is checked for 10 seconds
				The following messages are sent and shall be received on cell B.
14		SS		The SS deactivates cell A and activates cell B.
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~~PACKET PAGING REQUEST~~	Mobile identity = IMSI Paging order is for RRC-connection.
20	UE			The UE shall not initiate an RRC connection. This is checked during 3 seconds.
21		<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
22				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.
23		SS		The SS deactivates cell B and activates cell C.
24	UE			Cell C is preferred by the UE.
25	UE			The UE initiates an attach automatically, by MMI or by AT command.
26		->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available

27	<-	ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI1 P-TMSI-1 signature Mobile identity = TMSI-1 Routing area identity = RAI-3
28	->	ATTACH COMPLETE	
29	<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 Paging order is for RRC-connection.
30	->	~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
31	<-	~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
32	->	RRC CONNECTION SETUP COMPLETE	
~~32~~33	->	PAGING RESPONSE	Mobile identity = TMSI-1
~~33~~34	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
35	->	RRC CONNECTION RELEASE COMPLETE	
~~34~~36	<-	~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
~~35~~37	->	~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = "paging response"
~~36~~38	UE		The UE is switched off or power is removed (see ICS).
~~37~~39	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'
			The following messages are sent and shall be received on cell B.
~~38~~40	UE		The SS deactivates cell C and activates cell B. Cell B is preferred by the UE.
~~39~~41	UE		The UE is powered up or switched on and initiates an attach (see ICS).
~~40~~42	->	ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-3 TMSI status = valid TMSI available
~~41~~43	<-	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
~~42~~44	->	ATTACH COMPLETE	
~~43~~45	<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-2 Paging order is for RRC-connection.
~~44~~46	->	~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
~~45~~47	<-	~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
48	->	RRC CONNECTION SETUP COMPLETE	
~~46~~49	->	PAGING RESPONSE	Mobile identity = TMSI-2
~~47~~50	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
51	->	RRC CONNECTION RELEASE COMPLETE	
~~48~~52	<-	~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = P-TMSI-2 ~~Paging order is for TBF establishment.~~
~~49~~53	->	~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = "paging response"
~~50~~54	UE		The UE is switched off or power is removed (see ICS).

~~51~~55	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.3.2.5.5 Test requirements

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After the completion of the PS attach procedure, and when UE receive the DETACH REQUEST message (Detach type = 're-attach not required', Cause = 'Location Area not allowed') from SS, UE shall:.

- perform the following action depending on UE location.

  When in the same location area, UE shall:

  - not perform combined PS attach.
  - delete the stored RAI or LAI, P-TMSI, P-TMSI signature and PS ciphering key sequence number
  - store the LA in the 'forbidden location areas for regional provision of service'.

  When a new location area is entered, UE shall:

  - perform combined PS attach.
  - delete the list of forbidden LAs when power is switched off.

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.

12.4.1.1 Routing area updating / accepted

12.4.1.1.1 Definition

12.4.1.1.2 Conformance requirement

1) If the network accepts the routing area updating procedure and reallocates a P-TMSI, the UE shall acknowledge the new P-TMSI and continue communication with the new P-TMSI.

2) If the network accepts the routing area updating procedure from the UE without reallocation of the old P-TMSI, the UE shall continue communication with the old P-TMSI.

Reference

~~3G~~3GPP TS 24.008 clause 4.7.5.1

12.4.1.1.3 Test purpose

To test the behaviour of the UE if the network accepts the routing area updating procedure.

The following cases are identified:

1) P-TMSI / P-TMSI signature is reallocated

2) Old P-TMSI / P-TMSI signature is not changed

12.4.1.1.4 Method of test

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC2.
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 UPDATING 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 UPDATING REQUEST message. The SS accepts the P-TMSI and returns ROUTING AREA UPDATING ACCEPT message without any P-TMSI. Further communication UE - SS is performed by the P-TMSI.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell A.
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	
				The following messages are sent and shall be received on cell B.
7		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.
8	->		ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
9	<-		ROUTING AREA UPDATING ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-4
10	->		ROUTING AREA UPDATING 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~~PACKET PAGING REQUEST or PAGING REQUEST TYPE 1~~	Mobile identity = P-TMSI-2 PAGING TYPE1 ~~Both paging orders are for TBF establishment.~~ ~~PACKET PAGING REQUEST (used for NW mode III)~~ ~~PAGING REQUEST TYPE 1~~ (used for NW-mode II).
13	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell A.
14		SS		Set the signal strength of cell A to a lower signal strength than cell B The RF level of cell B is lowered until cell A is preferred by the UE.
15	UE			Cell A is preferred by the UE.
16	->		ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-4
17	<-		ROUTING AREA UPDATING ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RA updated' P-TMSI-2 signature Routing area identity = RAI-1
18	<-		~~PACKET PAGING REQUEST or PAGING REQUEST TYPE 1~~PAGING TYPE1	Mobile identity = P-TMSI-1 ~~Both paging orders are for TBF establishment.~~ ~~PACKET PAGING REQUEST (used for NW mode III)~~ PAGING ~~REQUEST~~ TYPE 1 (used for NW-mode II).

19	->	~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = "paging response"
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.

Specific message contents

None.

12.4.1.1.5 Test requirements

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:,

- initiate a routing area updating procedure with the information elements specified in the above Expected Sequence when the RF level of the attached cell is lower than the RF level of the new cell.
- use the P-TMSI which is included in the ROUTING AREA UPDATING ACCEPT message.
- acknowledge the new P-TMSI and continue communication with the new P-TMSI.
- continue communication with the old P-TMSI.

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

~~3G~~ 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, cell B in MCC1/MNC1/LAC1/RAC2, cell C in MCC2/MNC1/LAC1/RAC1.
All three cells are operating in network operation mode II (in case of UE operation mode A)~~, or in network operation mode III (in case of UE operation mode C)~~.

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		
				The following messages are sent and shall be received on cell A.
1	UE			The UE is set in UE operation mode C ~~or B~~ (see ICS).
2		SS		The SS is set in network operation mode II ~~or III~~ 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.Attach result = 'PS only attached' Routing area identity = RAI-1
				The following messages are sent and shall be received on cell B.
6		SS		The SS deactivates cell A and activates cell B.
7	UE			Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
9	<-		ROUTING AREA UPDATING REJECT	GMM cause = 'Illegal UE'
10	<-		PAGING TYPE1~~PACKET PAGING REQUEST Or PAGING REQUEST TYPE 1~~	Mobile identity = P-TMSI-2 PAGING TYPE1 ~~Both paging orders are for TBF establishment.~~ ~~PACKET PAGING REQUEST (used for NW mode III)~~ ~~PAGING REQUEST TYPE 1~~ (used for NW-mode II).
11	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell C.
12		SS		The SS deactivates cell B and activates cell C.
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).
17	->		ATTACH REQUEST	Attach type = 'PS only attached' Mobile identity = IMSI
18	<-		ATTACH ACCEPT	Attach result = 'PS attach' 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.

Specific message contents

None.

12.4.1.2.5 Test requirements

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- initiate a routing area updating procedure with the information elements specified in the above Expected Sequence.
- delete the stored P-TMSI, P-TMSI signature, RAI and PS ciphering key sequence number .
- consider the USIM as invalid for PS services until the UE is switched off or the USIM is removed.

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

~~3G~~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, cell B in MCC1/MNC1/LAC1/RAC2.
Both cells are operating in network operation mode II (in case of UE operation mode A)~~, or in network operation mode III (in case of UE operation mode C)~~.

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		
				The following messages are sent and shall be received on cell A.
1		SS		The SS is set in network operation mode II ~~or III~~ and activates cell A.
2	UE			The UE is set in UE operation mode C ~~or B~~ (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	
				The following messages are sent and shall be received on cell B.
7		SS		The SS deactivates cell A and activates cell B.
8	UE			Cell B is preferred by the UE.
9		->	ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
10		<-	ROUTING AREA UPDATING 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~~PACKET PAGING REQUEST Or PAGING REQUEST TYPE 1~~	Mobile identity = P-TMSI-2 PAGING TYPE1 ~~Both paging orders are for TBF establishment.~~ ~~PACKET PAGING REQUEST (used for NW mode III)~~ ~~PAGING REQUEST TYPE 1~~ (used for NW-mode II).
20	UE			No response from the UE to the request, as the UE has detached locally. This is checked for 10 seconds.

Specific message contents

None.

12.4.1.3.5 Test requirements

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- initiate a routing area updating procedure with the information elements specified in the above Expected Sequence.
- delete stored P-TMSI, P-TMSI signature, RAI and PS ciphering key sequence number.

12.4.1.4 Routing area updating / rejected / location area not allowed

12.4.1.4.1 Definition

12.4.1.4.2 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.

   1.3 store the LA in the 'forbidden location areas for regional provision of service'.

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

~~3G~~3GPP ~~-~~TS 24.008 clauses 4.7.5.1

12.4.1.4.3 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.

12.4.1.4.4 Method of test

Initial condition

System Simulator:

Three cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC2, cell C in MCC1/MNC1/LAC2/RAC1.
All cells are operating in network operation mode II~~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
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		The SS activates cell C.
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.
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				The SS deactivates cell C and activates cell B.
8		SS		Cell B is preferred by the UE.
9		->	ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-3
10		<-	ROUTING AREA UPDATING REJECT	GMM cause = 'Location Area not allowed'
11		<-	PAGING TYPE1~~PACKET PAGING REQUEST Or PAGING REQUEST TYPE 1~~	Mobile identity = P-TMSI-1 PAGING TYPE1 ~~Both paging orders are for TBF establishment.~~ ~~PACKET PAGING REQUEST (used for NW mode III)~~ ~~PAGING REQUEST TYPE 1~~ (used for NW-mode II).
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		The SS deactivates cell B and activates cell A.
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		The SS deactivates cell B and activates cell C.
17	UE			Cell C is preferred by the UE.
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-3
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-3
26	->	ATTACH COMPLETE	
	SS		The following messages are sent and shall be received on cell A.
27			The SS deactivates cell C and activates cell A.
28			Cell A is preferred by the UE.
29	->	ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-3
30	<-	ROUTING AREA UPDATING ACCEPT	No new mobile identity assigned.P-TMSI and P-TMSI signature not included.Update result = 'RA updated' P-TMSI-2 signature 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) and the test is repeated from step 3 to step 32.

Specific message contents

None.

12.4.1.4.5 Test requirements

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

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

When in the same location area, UE shall

- not perform PS attach..
- store the LA in the 'forbidden location areas for regional provision of service'.

When a new location area is entered, UE shall

- perform PS attach when a.
- delete the list of forbidden LAs when power is switched off.

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.

GMM cause codes that can be selected are: ‘IMSI unknown in HLR’ ‘IMEI not accepted’ ‘Illegal ME’ ‘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

~~3G~~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, cell B in MCC1/MNC1/LAC1/RAC2.
Both cells are operating in network operation mode II (in case of UE operation mode A)~~, or in network operation mode III (in case of UE operation mode C)~~.

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 random cause 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 random cause 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 random cause 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 random cause 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 random cause 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 random cause 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 10 minutes.

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	UE			The UE is set in UE operation mode C ~~or B~~ (see ICS).
2		SS		The SS is set in network operation mode II ~~or III~~ 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 not included. Attach result = 'PS only attached' P-TMSI-2 signature Routing area identity = RAI-1
				The following messages are sent and shall be received on cell B.
6		SS		The SS deactivates cell A and activates cell B.
7		SS		Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
9	<-		ROUTING AREA UPDATING REJECT	Random GMM cause
10		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
11	->		ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
12	<-		ROUTING AREA UPDATING REJECT	Random GMM cause
13		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
14	->		ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
15	<-		ROUTING AREA UPDATING REJECT	Random GMM cause
16		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
17	->		ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
18	<-		ROUTING AREA UPDATING REJECT	Random GMM cause
19		SS		The SS verifies that the time between the routing area updating requests is 15 seconds
20	->		ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
21	<-		ROUTING AREA UPDATING REJECT	Random GMM cause
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.

24	->	ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
25	<-	ROUTING AREA UPDATING ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-2 P-TMSI-3 signature Routing area identity = RAI-4
26	->	ROUTING AREA UPDATING 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'

Specific message contents

None.

12.4.1.5.5 Test requirements

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- perform the following actions depending on the conditions described below.

  Case 1) 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) A timer T3330 timeout has occurred during a routing area updating procedure with the attempt counter five

  UE shall:

- start timer T3302

  Case3) The T3302 expires

  UE shall:

  - initiate a 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

~~3G~~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, cell B in MCC1/MNC1/LAC1/RAC2 and cell C In MCC1/MNC1/LAC1/RAC3.
All cells are operating in network operation mode II (in case of UE operation mode A)~~, or in network operation mode III (in case of UE operation mode C)~~.

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. 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		SS		The SS activates cell A.
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 18.
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	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1
6	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		The SS deactivates cell A and activates cell B.
8		SS		Cell B is preferred by the UE.
9	->		ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
10		SS		No response to the ROUTING AREA UPDATING REQUEST message is given by the SS
				The following messages are sent and shall be received on cell C.
11		SS		The SS deactivates cell B and activates cell C.
12		SS		Cell C is preferred by the UE.
13	->		ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
14	<-		ROUTING AREA UPDATING ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-2 P-TMSI-3 signature Routing area identity = RAI-5
15	->		ROUTING AREA UPDATING 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) and the test is repeated from step 3 to step 17.

Specific message contents

None.

12.4.1.6.5 Test requirements

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- initiate the routing area update procedure.

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

~~3G~~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, cell B in MCC1/MNC1/LAC1/RAC2 and cell C in MCC1/MNC1/LAC1/RAC2.
All three cells are operating in network operation mode II~~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 ~~or B~~ (see ICS).
2		SS		The SS is set in network operation mode II ~~or III~~ 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 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
				The following messages are sent and shall be received on cell B.
6		SS		The SS deactivates cell A and activates cell B.
7		SS		Cell B is preferred by the UE.
8	->		ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1
9		SS		No response to the ROUTING AREA UPDATING REQUEST message is given by the SS
				The following messages are sent and shall be received on cell C.
10		SS		The SS deactivates cell B and activates cell C.
11		SS		Cell C is preferred by the UE.
12	->		UPLINK RLC DATA BLOCK	~~LLC PDU implicitly indicating cell update.~~
13	<-		ROUTING AREA UPDATING ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-2 P-TMSI-3 signature Routing area identity = RAI-4
14	->		ROUTING AREA UPDATING 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'

Specific message contents

None.

12.4.1.7.5 Test requirements

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- initiate routing area update procedure.

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 REQUEST 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

~~3G~~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 and cell B in MCC1/MNC1/LAC1/RAC2.
Both cells are operating in network operation mode II (in case of UE operation mode A)~~, or in network operation mode III (in case of UE operation mode C)~~.

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 ~~or B~~ (see ICS).
2		SS		The SS is set in network operation mode II ~~or III~~ 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 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	
				The following messages are sent and shall be received on cell B.
7		SS		The SS deactivates cell A and activates cell B.
8		SS		Cell B is preferred by the UE.
9		->	ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-1 signature Routing area identity = RAI-1
10		<-	P-TMSI REALLOCATION REQUEST	Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-1
11	UE			The UE ignores the P-TMSI reallocation request.
12		<-	ROUTING AREA UPDATING ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-4
13		->	ROUTING AREA UPDATING 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.

12.4.1.8.5 Test requirements

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- initiate the routing area updating procedure.

When a P-TMSI REALLOCATION REQUEST 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

~~3G~~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, cell B in MCC1/MNC1/LAC1/RAC2.
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 UPDATING 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 UPDATING REQUEST message. The SS accepts the P-TMSI signature and returns ROUTING AREA UPDATING ACCEPT message without any P-TMSI and with a new TMSI. The UE acknowledge the new TMSI by sending ROUTING AREA UPDATING 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	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. 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.
7	->		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
8	<-		ROUTING AREA UPDATING 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 UPDATING COMPLETE	
10	<-		~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
11	->		~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = "paging response"
12	<-		~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = IMSI Paging order is for RRC-connection.
13	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
14	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
15	->		RRC CONNECTION SETUP COMPLETE	
~~15~~16	->		PAGING RESPONSE	Mobile identity = IMSI
~~16~~17	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
18	->		RRC CONNECTION RELEASE COMPLETE	
~~17~~19	SS			The following messages are sent and shall be received on cell A. The RF level of cell A is increased and the RF level of cell B is lowered until cell A is preferred by the UE.
~~18~~20	->		ROUTING AREA UPDATING REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-1 signature Routing area identity = RAI-4 TMSI status = no valid TMSI available
~~19~~21	<-		ROUTING AREA UPDATING 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
~~20~~22	->		ROUTING AREA UPDATING COMPLETE	

2123	<-	PACKET PAGING REQUESTPAGING TYPE1	Mobile identity = P-TMSI-2 Paging order is for TBF establishment.
2224	->	UPLINK RLC DATA BLOCKSERVICE REQUEST	LLC PDU implicitly indicating paging response.service type = "paging response"
2325	<-	PAGING TYPE1PACKET PAGING REQUEST	Mobile identity = TMSI-1 Paging order is for RRC-connection.
2426	->	CHANNEL REQUEST RRC CONNECTION REQUEST	
2527	<-	IMMEDIATE ASSIGNMENT RRC CONNECTION SETUP	
28	->	RRC CONNECTION SETUP COMPLETE	
2629	->	PAGING RESPONSE	Mobile identity = TMSI-1
2730	<-	CHANNEL RELEASE RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
31	->	RRC CONNECTION RELEASE COMPLETE	
2832	UE		The UE is switched off or power is removed (see ICS).
2933	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.4.2.1.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- initiate a combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence when RF level of the attached cell is lower than the RF level of the new cell.
- acknowledge the new P-TMSI
- continue communication with the new P-TMSI If SS reallocates a P-TMSI.
- continue communication with the old P-TMSI If SS does not reallocate the old P-TMSI.

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 that is in an ongoing CS transaction at change of routing area shall initiate the routing area updating procedure only after the CS transaction has been released.

Reference

~~3G~~3GPP TS 24.008 clause 4.7.5.2

12.4.2.2.3 Test purpose

To test the behaviour of the UE when using the combined routing area updating procedure in cases where the UE is CS connected at change of RA.

12.4.2.2.4 Method of test

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC2.
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 initiates a CS call. The routing area change. UE will not send a ROUTING AREA UPDATE REQUEST message until the CS operation is terminated.

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-2 P-TMSI-2 signature Routing area identity = RAI-1
5	->		ATTACH COMPLETE	
6	UE			A CS call is initiated.
				The following messages are sent and shall be received on cell B.
7		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.
8	UE			No RA updating procedure is initiated. This is checked for 60 seconds.
9	UE			The CS call is terminated
10	->		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
11	<-		ROUTING AREA UPDATING ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-4
12	->		ROUTING AREA UPDATING COMPLETE	
13	<-		~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
14	->		~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = "paging response"
15	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = IMSI Paging order is for RRC-connection.
16	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
17	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
18	->		RRC CONNECTION SETUP COMPLETE	
~~18~~19	->		PAGING RESPONSE	Mobile identity = IMSI
~~19~~20	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
21	->		RRC CONNECTION RELEASE COMPLETE	
~~20~~22	UE			The UE is switched off or power is removed (see ICS).
~~21~~23	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.4.2.2.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- initiate a CS call. at change of routing area.
- initiate a routing area updating procedure only after the CS transaction has been released.

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

~~3G~~3GPP-TS 24.008 clause 4.7.3.2

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, cell B in MCC1/MNC1/LAC1/RAC2.
Both cells operating in network operation mode I.

User Equipment:

The UE has a valid ITMSI.

Related ICS/IXIT statements

Support of PS service Yes/No
UE operation mode A Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

After attach, the UE sends an ROUTING AREA UPDATE REQUEST message. The SS allocates a P-TMSI and returns ROUTING AREA UPDATE ACCEPT message with a P-TMSI. GMM cause 'IMSI unknown in HLR' is indicated from SS. Further communication UE - SS is performed by the P-TMSI. CS services are not possible.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	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	
				The following messages are sent and shall be received on cell B.
6		SS		The SS deactivates cell A and activates cell B.
7	->		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
8	<-		ROUTING AREA UPDATING 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 UPDATING COMPLETE	
10	<-		~~PACKET PAGING REQUEST~~PAGING TYPE1	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
11	->		~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = "paging response"
12	<-		~~PACKET PAGING REQUEST~~PAGING REQUEST	Mobile identity = IMSI Paging order is for RRC-connection.
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'

Test Procedure2

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC2.
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
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. 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. CS services are not possible unless an IMSI attach procedure is performed.

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		
				The following messages are sent and shall be received on cell A
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 =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	
				The following messages are sent and shall be received on cell B.
6		SS		The SS deactivates cell A and activates cell B.
7	->		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
8	<-		ROUTING AREA UPDATING 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 UPDATING COMPLETE	
10	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = IMSI Paging order is for RRC-connection.
11	UE			The UE shall not initiate an RRC connection. This is checked during 3 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' Stop the sequence.
				The following messages are sent and shall be received on cell B
14	UE			Automatic MM IMSI attach procedure is indicated (see ICS).
15	UE			The UE is powered up or switched on and initiates an attach (see ICS).
16	->		ATTACH REQUEST	Attach type = 'Combined PS / IMSI attach' Mobile identity = IMSI TMSI status = no valid TMSI available
17	<-		ATTACH ACCEPT	Attach result = 'Combined PS / IMSI attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-4
18	->		ATTACH COMPLETE	
				The following messages are sent and shall be received on cell A.
19		SS		The SS deactivates cell B and activates cell A.
20	->		ROUTING AREA UPDATING REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-4 TMSI status = no valid TMSI available

21	<-	ROUTING AREA UPDATING 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)
22	->	ROUTING AREA UPDATING COMPLETE	
23	->	~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
24	<-	~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
25	->	RRC CONNECTION SETUP COMPLETE	
~~25~~26	->	LOCATION UPDATING REQ	Location updating type = IMSI attach.
~~26~~27	<-	LOCATION UPDATING ACC	The SS allocates a new TMSI.
~~27~~28	->	TMSI REALLOCATION COMP	Location updating type = IMSI attach.
~~28~~29	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
30	->	RRC CONNECTION RELEASE COMPLETE	
~~29~~31	<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 Paging order is for RRC-connection.
~~30~~32	->	~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
~~31~~33	<-	~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
34	->	RRC CONNECTION SETUP COMPLETE	
~~32~~35	->	PAGING RESPONSE	Mobile identity = TMSI-1
~~33~~36	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
37	->	RRC CONNECTION RELEASE COMPLETE	
~~34~~38	UE		The UE is switched off or power is removed (see ICS).
~~35~~39	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

Specific message contents

None.

12.4.2.3.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- initiate a combined routing area updating procedure.
- perform the following actions depending on the GMM cause.

  Case 1) GMM cause = 'IMSI unknown in HLR'.

  UE shall:

  - delete the stored TMSI, LAI and CKSN.

- consider USIM invalid for non-PS services until power is switched off or USIM is removed.

Case 2) GMM cause = ‘MSC temporarily not reachable’, ‘Network failure’ or ‘Congestion’.

UE shall:

- perform an MM IMSI attach procedure. (only applied UE operation mode A)

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 andLAI.

   1.3 store the PLMN in the ‘forbidden PLMN list’.

Reference

~~3G~~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:

Four cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC2, cell C in MCC1/MNC1/LAC2/RAC1 and cell D in MCC2/MNC1/LAC1/RAC1. All four 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		The SS activates cell 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 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 = TMSI-1
5		->	ATTACH COMPLETE	
				The following messages are sent and shall be received on cell B.
7		SS		The SS deactivates cell A and activates cell B.
8	UE			Cell B is preferred by the UE.
9		->	ROUTING AREA UPDATING REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = valid TMSI available
10		<-	ROUTING AREA UPDATING 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).
13		<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = P-TMSI-2 ~~Paging order is for TBF establishment.~~
14	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.
15		SS		The SS deactivates cell B and activates cell C.
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~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 Paging order is for RRC-connection.
20	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.
21		SS		The SS deactivates cell C and activates cell A.
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~~PACKET PAGING REQUEST~~	Mobile identity = P-TMSI-2 ~~Paging order is for TBF establishment.~~
26	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 D.
27		SS		The SS deactivates cell A and activates cell D.
28	UE			Cell D is preferred by the UE.
29	UE			The UE initiates an attach automatically, 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'

Specific message contents

None.

12.4.2.4.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- initiate a combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence
- delete the stored P-TMSI, P-TMSI signature, TMSI, RAI, LAI, ciphering key sequence number PS ciphering key sequence number.
- reset the location update attempt counter when UE receive the ROUTING AREA UPDATING REJECT message(GMM cause = 'PLMN not allowed') from SS.
- store the PLMN identity in the 'forbidden PLMN list'.
- not perform combined PS attach procedure when the UE is switched on in the same PLMN.

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

12.4.2.5.1 Definition

12.4.2.5.2 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 shall:

   1.1 not perform combined PS attach when in the same location area.

   1.2 delete the stored RAI, PS-CKSN, P-TMSI P-TMSI signature, TMSI, CKSN and LAI.

   1.3 store the LA in the 'forbidden location areas for roaming'.

   1.4 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

~~3G~~3GPP ~~-~~TS 24.008 clause 4.7.5.2

12.4.2.5.3 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.

12.4.2.5.4 Method of test

12.4.2.5.4.1 Test procesure1

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC/LAC2/RAC1.
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 mobed back to the 1st location area. A combined routing area updating shall not be performed, as the LA is on the forbidden list.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell 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 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	
				The following messages are sent and shall be received on cell B.
7		SS		The SS deactivates cell A and activates cell B.
8	UE			Cell B is preferred by the UE.
9	->		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
10	<-		ROUTING AREA UPDATING 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~~PACKET PAGING REQUEST~~	Mobile identity = P-TMSI-2 ~~Paging order is for TBF establishment.~~
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = IMSI Paging order is for RRC-connection.
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		The SS deactivates cell B and activates cell A.
18	UE			Cell A is preferred by the UE.
19	UE			The UE initiates an attach automatically, by MMI or by 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-1 Mobile identity = TMSI-1
22	->		ATTACH COMPLETE	
23	<-		PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 Paging order is for RRC-connection.
24	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
25	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
26	->		RRC CONNECTION SETUP COMPLETE	
~~26~~27	->		PAGING RESPONSE	Mobile identity = TMSI-1
~~27~~28	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.

29	->	RRC CONNECTION RELEASE COMPLETE	
2830	<-	PACKET PAGING REQUESTPAGING TYPE1	Mobile identity = P-TMSI-1 Paging order is for TBF establishment.
2931	->	UPLINK RLC DATA BLOCKSERVICE REQUEST	LLC PDU implicitly indicating paging response.service type = "paging response"
			The following messages are sent and shall be received on cell B.
3032	SS		The SS deactivates cell A and activates cell B.
3133	UE		No ROUTING AREA UPDATING REQUEST sent to SS (SS waits 30 seconds).
3234	<-	PAGING TYPE1PACKET PAGING REQUEST	Mobile identity = P-TMSI-2 Paging order is for TBF establishment.
3335	UE		No response from the UE to the request. This is checked for 10 seconds.
3436	<-	PAGING TYPE1PACKET PAGING REQUEST	Mobile identity = IMSI Paging order is for RRC-connection.
3537	UE		The UE shall not initiate an RRC connection. This is checked during 3 seconds.

12.4.2.5.4.2 Test procesure2

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC/LAC2/RAC1.
Both 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
USIM removal possible without powering down Yes/No
Switch off on button Yes/No
Automatic PS attach procedure at switch on or power on Yes/No

Test procedure

The SS rejects a combined routing area updating with the cause value 'Roaming not allowed in this area'. The UE is switched off for 10 seconds and switched on again. The SS checks that a combined PS attach is possible on the cell on which the previous combined routing area updating had been rejected.

If USIM removal is possible without switching off:
The SS rejects a routing area updating with the cause value 'Roaming not allowed in this area'. The USIM is removed and inserted in the UE. The SS checks that a PS attach procedure and routing area updating procedure is possible on the cell on which the routing area updating had previously been rejected.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell 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 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	
				The following messages are sent and shall be received on cell B.
7		SS		The SS deactivates cell A and activates cell B.
8	UE			Cell B is preferred by the UE.
9		->	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
10		<-	ROUTING AREA UPDATING 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~~PACKET PAGING REQUEST~~	Mobile identity = P-TMSI-2 ~~Paging order is for TBF establishment.~~
14	UE			No response from the UE to the request. This is checked for 10 seconds.
15		<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = IMSI Paging order is for RRC-connection.
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 and initiates an attach (see ICS).
19	UE			The UE initiates an attach 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-1 Mobile identity = TMSI-1
22		->	ATTACH COMPLETE	
23		<-	PAGING TYPE1~~PACKET PAGING REQUEST~~	Mobile identity = TMSI-1 Paging order is for RRC-connection.
24		->	~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
25		<-	~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
26		->	RRC CONNECTION SETUP COMPLETE	
~~26~~27		->	PAGING RESPONSE	Mobile identity = TMSI-1

~~27~~28	<-	~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
29	->	RRC CONNECTION RELEASE COMPLETE	
~~28~~30	<-	~~PACKET PAGING REQUEST~~PAGING REQUEST	Mobile identity = P-TMSI-1 ~~Paging order is for TBF establishment.~~
~~29~~31	->	~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = "paging response"
~~30~~32	UE		The UE is switched off or power is removed (see ICS).
~~31~~33	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'

Specific message contents

None.

12.4.2.5.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- initiate a combined routing area update procedure(Update type = 'Combined RA/LA updating') with the information elements specified above Expected Sequence
- delete the stored P-TMSI, P-TMSI signature, TMSI, RAI, LAI, ciphering key sequence number PS ciphering key sequence number.
- reset the location update attempt counter when UE receive the ROUTING AREA UPDATING REJECT message(GMM cause = 'Roaming not allowed in this area') from SS.
- store the LAI in the 'forbidden location areas for roaming'.
- not perform combined PS attach procedure when the UE is switched on in the same location area.
- perform combined PS attach procedure when a new location area is entered.

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

3G3GPP TS 24.008 clause 4.7.5.2

12.4.2.6.3 Test purpose

Test porpose1

To test the behaviour of the UE in case of access class control (access is granted).

Test porpose2

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

A random access class x (0-15) is selected. 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:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC/LAC1/RAC2.
Both cells are operating in network operation mode I.
Access class x barred.

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

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		The SS activates cell 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 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	
				The following messages are sent and shall be received on cell B.
7		SS		The SS deactivates cell A and activates cell B.
8	UE			Cell B is preferred by the UE.
9	UE			No ROUTING AREA UPDATE REQUEST sent to SS, as access class X is barred (SS waits 30 seconds).
10		SS		The access class x is not barred anymore.
11	->		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
12	<-		ROUTING AREA UPDATING 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 UPDATING 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'

12.4.2.6.4.2 Test procedure2

Initial condition

A random access class x (0-15) is selected. 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:

Three cells, cell A in MCC1/MNC1/LAC1/RAC1 has access class x not barred, cell B in MCC1/MNC1/LAC1/RAC2 has access class x barred, cell C in MCC1/MNC1/LAC1/RAC2 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		The SS activates cell 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 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	
				The following messages are sent and shall be received on cell B.
7		SS		The SS deactivates cell A and activates cell B.
8	UE			Cell B is preferred by the UE.
9	UE			No ROUTING AREA UPDATING REQUEST sent to SS, as access class X is barred (SS waits 30 seconds).
				The following messages are sent and shall be received on cell C.
10		SS		The SS deactivates cell B and activates cell C.
11	UE			Cell C is preferred by the UE.
12		->	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
13		<-	ROUTING AREA UPDATING 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 UPDATING 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'

Specific message contents

None.

12.4.2.6.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- not perform the combined routing area updating procedure.
- stay in the current serving cell.

- apply the normal cell reselection process.(as access class X is barred)
- perform the combined routing area updating procedure when the barred state is removed or because of a cell change.

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 with the attempt counter less than five, the User Equipment shall repeat the routing area updating procedure after T3330 timeout.
2) When a T3330 timeout has occurred during a routing area updating procedure with the attempt counter five, the User Equipment shall start timer T3302.
3) When the T3302 expire, a new routing area updating procedure shall be initiated.

Reference

~~3G~~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, cell B in MCC1/MNC/LAC1/RAC2.
Both cells are 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 initiates a routing area updating procedure (attempt counter zero). The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout.

The UE initiates a new routing area updating procedure (attempt counter one) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout.

The UE initiates a new routing area updating procedure (attempt counter two) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout.

The UE initiates a new routing area updating procedure (attempt counter three) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout.

The UE initiates a new routing area updating procedure (attempt counter four) after T3311 expires. The SS does not answer with ROUTING AREA UPDATE ACCEPT message before T3330 timeout.

The UE initiates a new routing area updating procedure with attempt counter five (after T3311 expires). The SS does not answer with ATTACH ACCEPT message before T3330 timeout. The UE shall not perform a new successful routing area updating procedure after 15 seconds.

The UE initiates a routing area updating 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

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		The SS activates cell 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 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	
				The following messages are sent and shall be received on cell B.
7		SS		The SS deactivates cell A and activates cell B.
8	UE			Cell B is preferred by the UE.
9	->		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
10		SS		No response is given from the SS.
11		SS		The SS verifies that the time between the RA update requests is 15 seconds
12	->		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
13		SS		No response is given from the SS.
14		SS		The SS verifies that the time between the RA update requests is 15 seconds
15	->		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
16		SS		No response is given from the SS.
17		SS		The SS verifies that the time between the RA update requests is 15 seconds
18	->		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
19		SS		No response is given from the SS.
20		SS		The SS verifies that the time between the RA update requests is 15 seconds
21	->		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
22		SS		No response is given from the SS.
23		SS		The SS verifies that the time between the RA update requests is T3302 seconds
24	->		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
25	<-		ROUTING AREA UPDATING ACCEPT	Update result = 'Combined RA/LA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Mobile identity = IMSI Routing area identity = RAI-4

26	->	ROUTING AREA UPDATING COMPLETE	
27	UE		The UE is switched off or power is removed (see ICS).
28	->	DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS/IMSI detach'

Specific message contents

None.

12.4.2.7.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- initiate a combined routing area updating procedure with information elements specified in the above Expected Sequence when UE is powered up or switched on.
- 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 attempt counter less than five.

  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 attempt counter five

  UE shall:

  - start the timer T3302

  Case3) The timer T3302 expires

  UE shall:

  - initiate a 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

3G3GPP-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, cell B in MCC1/MNC1/LAC1/RAC2, cell C in MCC1/MNC1/LAC1/RAC3.
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 Ms shall re-initiate a routing area updating procedure in the new routing area. The UE shall not increment the attempt counter.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
		SS		The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell 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 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	
				The following messages are sent and shall be received on cell B.
6		SS		The SS deactivates cell A and activates cell B.
7	UE			Cell B is preferred by the UE.
8	->		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
9		SS		No response id given from the SS.
				The following messages are sent and shall be received on cell A.
10		SS		Activate cell C with a lower signal strength than cell B.
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 UPDATING 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 UPDATING 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 UPDATING 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'

Specific message contents

None.

12.4.2.8.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- initiate the routing area update procedure.

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

~~3G~~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, cell B in MCC1/MNC1/LAC1/RAC2, cell C in MCC1/MNC1/LAC1/RAC2.
All three 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 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		The SS activates cell 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 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	
				The following messages are sent and shall be received on cell B.
6		SS		The SS deactivates cell A and activates cell B.
7	UE			Cell B is preferred by the UE.
8	->		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
9		SS		No response id given from the SS.
				The following messages are sent and shall be received on cell C.
10		SS		Activate cell C with a lower signal strength than cell B.
11	UE			The RF level of cell B is lowered until cell C is preferred by the UE.
12	->		UPLINK RLC DATA BLOCK	~~LLC PDU implicitly indicating cell update.~~
13	<-		ROUTING AREA UPDATING 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 UPDATING 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'

Specific message contents

None.

12.4.2.9.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- initiate routing area update procedure.

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

~~3G~~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, cell B in MCC1/MNC1/LAC1/RAC2.
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		
		SS		The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell 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 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	Mobile identity = IMSI
				The following messages are sent and shall be received on cell B.
6		SS		The SS deactivates cell A and activates cell B.
7	UE			Cell B is preferred by the UE.
8	->		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
9		SS		The SS ignores the ROUTING AREA UPDATING REQUEST message and initiates a detach procedure.
10	<-		DETACH REQUEST	Detach type = 're-attach not required'
11	->		DETACH ACCEPT	

12.4.2.10.4.2 Test procedure2

Initial condition

System Simulator:

Two cells, cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC2.
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		
		SS		The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell 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 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	
				The following messages are sent and shall be received on cell B.
6		SS		The SS deactivates cell A and activates cell B.
7	UE			Cell B is preferred by the UE.
8		->	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
9		SS		The SS ignores the ROUTING AREA UPDATING 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 UPDATING 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 UPDATING 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'

Specific message contents

None.

12.4.2.10.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, UE shall:

- initiate routing area update procedure.
- perform the follow actions depending on the conditions described below.

Case 1) 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.

Case 2) UE receives a DETACH REQUEST message with cause 'IMSI detach' from SS while waiting for a ROUTING AREA UPDATING ACCEPT message, UE shall:

- ignore the detach request.
- 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

~~3G~~3GPP ~~-~~TS 24.008 clause 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)~~, or in network operation mode III (in case of UE operation mode C)~~.

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 UPDATING 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 UPDATING 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

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.
- set and start the timer T3312 when the ATTACH ACCEPT message and ROUTING AREA UPDATING ACCEPT message from SS. The value of the timer T3312 is sent by SS to UE in ATTACH ACCEPT message and ROUTING AREA UPDATING ACCEPT message.

- initiate a routing area updating procedure with Update type = ‘Periodic updating’ when the timer T3312 is expired.

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

~~3G~~3GPP ~~-~~TS 24.008 clause 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 TMSI status = no valid TMSI available
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
4	->		ATTACH COMPLETE	
5	->		ROUTING AREA UPDATING REQUEST	Update type = 'Periodic updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = valid TMSI available
6	SS			The SS verifies that the time between the attach request and the periodic RA updating is T3312
7	<-		ROUTING AREA UPDATING 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

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.
- set and start the timer T3312 when the ATTACH ACCEPT message and ROUTING AREA UPDATING ACCEPT message from SS.
- initiate a routing area updating procedure with Update type = 'Periodic updating' when the timer T3312 is expired.

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.

Reference

~~3G~~3GPP ~~-~~TS 24.008 clause 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, cell B in MCC1/MNC1/LAC1/RAC2.
Cell A is in are operating in network operation mode II and cell B is in network operation mode I. 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
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 and an IMSI 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		The SS activates cell A.
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	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
8	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
9	->		RRC CONNECTION SETUP COMPLETE	
~~9~~10	->		LOCATION UPDATING REQ	Location updating type = IMSI attach.
~~10~~11	<-		LOCATION UPDATING ACC	The SS allocates a new TMSI.
~~11~~12	->		TMSI REALLOCATION COMP	Location updating type = IMSI attach.
~~12~~13	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
14	->		RRC CONNECTION RELEASE COMPLETE	
~~13~~15		SS		After 5 minutes, the signal strength is lowered until the UE have lost contact with the SS.
~~14~~16		SS		Wait 2 minutes.
				The following messages are sent and shall be received on cell B.
~~15~~17		SS		The SS deactivates cell A and activates cell B.
~~16~~18		UE		Cell B is preferred by the UE.
~~17~~19		UE		The UE immediately start a combined RA updating procedure
~~18~~20	->		ROUTING AREA UPDATING REQUEST	Update type = 'Combined RA/LA updating' P-TMSI-2 signature Routing area identity = RAI-1 TMSI status = valid TMSI available
~~19~~21	<-		ROUTING AREA UPDATING 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
~~20~~22	UE			The UE is switched off or power is removed (see ICS).
~~21~~23	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, combined PS / IMSI detach'

Specific message contents

None.

12.4.3.3.5 Test requirements

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

When the UE is both IMSI attached for PS and non-PS service , and if the MS 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 Combined 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

~~3G~~3GPP ~~-~~TS 24.008 clause 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.

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 and an IMSI 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.

T3312; set to 6 minutes.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The UE is powered up or switched on and initiates an attach (see ICS).
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	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
6	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
7	->		RRC CONNECTION SETUP COMPLETE	
~~7~~8	->		LOCATION UPDATING REQ	Location updating type = IMSI attach.
~~8~~9	<-		LOCATION UPDATING ACC	The SS allocates a new TMSI.
~~9~~10	->		TMSI REALLOCATION COMP	Location updating type = IMSI attach.
~~10~~11	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
12	->		RRC CONNECTION RELEASE COMPLETE	
~~11~~13	SS			After 5 minutes, the signal strength is lowered until the UE have lost contact with the SS.
~~12~~14	SS			After 2 minutes, the signal strength is increased until the UE have got contact with the SS.
~~13~~15	UE			The UE immediately start the periodic RA updating procedure
~~14~~16	->		ROUTING AREA UPDATING REQUEST	Update type = 'Periodic updating' P-TMSI-2 signature Routing area identity = RAI-1
~~15~~17	<-		ROUTING AREA UPDATING ACCEPT	No new mobile identity assigned. P-TMSI not included. Update result = 'RAupdated' P-TMSI-3 signature Routing area identity = RAI-1
~~16~~18	->		~~CHANNEL REQUEST~~ RRC CONNECTION REQUEST	
~~17~~19	<-		~~IMMEDIATE ASSIGNMENT~~ RRC CONNECTION SETUP	
20	->		RRC CONNECTION SETUP COMPLETE	
~~18~~21	->		LOCATION UPDATING REQ	Location updating type = Periodic LA updating.
~~19~~22	<-		LOCATION UPDATING ACC	
~~20~~23	<-		~~CHANNEL RELEASE~~ RRC CONNECTION RELEASE	After sending of this message, the SS waits for disconnection of the CS signalling link.
24	->		RRC CONNECTION RELEASE COMPLETE	
~~21~~25	UE			The UE is switched off or power is removed (see ICS).
~~22~~26	->		DETACH REQUEST	Message not sent if power is removed. Detach type = 'power switched off, PS detach'

Specific message contents

None.

12.4.3.4.5 Test requirements

UE shall:

- initiate a combined PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

When the UE is both IMSI attached for PS and non-PS service , and if the MS 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".
- perform the periodic location updating procedure.

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

~~3G~~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			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	No new mobile identity assigned. P-TMSI not included. Attach result = 'PS only attached' P-TMSI-3 signature Routing area identity = RAI-1
13	<-		~~PAGING REQUEST TYPE 1~~PAGING TYPE1	Mobile identity = P-TMSI-2 ~~Paging order is for TBF establishment.~~
14	->		~~UPLINK RLC DATA BLOCK~~SERVICE REQUEST	~~LLC PDU implicitly indicating paging response.~~service type = "paging response"
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'

Specific message contents

None.

12.5.5 Test requirements

UE shall:

- initiate a PS attach procedure with the information elements specified in the above Expected Sequence when UE is powered up or switched on.

After completing the PS attach procedure, and when UE receive of the P-TMSI REALLOCATION COMMAND message, UE shall:

- store the allocated Routing Area Identifier(RAI) and the allocated P-TMSI.
- acknowledge a new P-TMSI.
- send the P-TMSI and a P-TMSI REALLOCATION COMPLETE message to SS.
- update P-TMSI on the USIM when UE is correctly deactivated in accordance with the manufacturer's instructions.
- use the given P-TMSI in further communication with SS.

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

~~3G~~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, cell B in MCC1/MNC1/LAC1/RAC2.
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		
				The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell A.
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	
				The following messages are sent and shall be received on cell B.
10		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.
11	->		ROUTING AREA UPDATING 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 UPDATING ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
14	->		ROUTING AREA UPDATING 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	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 1 to step 16.

Specific message contents

None.

12.6.1.1.5 Test requirements

UE shall:

- initiate a PS attach procedure with information elements specified in the above Expected Sequence when UE is powered on or switched on.

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.

12.6.1.2 Authentication rejected by the network

12.6.1.2.1 Definition

12.6.1.2.2 Conformance requirement

1) After reception of an Authentication Reject message the UE shall:

   1.1 not perform normal routing area updating

   1.2 not perform periodic routing area updating

   1.3 not perform PS detach if switched off

2) The UE shall delete the stored RAI, PS-CKSN P-TMSI and P-TMSI signature. USIM shall be considered invalid until power is switched off or USIM is removed.

Reference

~~3G~~3GPP TS 24.008 clauses 4.7.7

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, cell B in MCC1/MNC1/LAC1/RAC2.
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 rejects the authentication and ciphering procedure.

The SS checks that the UE does not perform normal routing area updating, does not perform periodic routing area updating and does not perform PS detach if switched off.

T3312; set to 10 minutes.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell A.
2	UE			The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 14.
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	<-		AUTHENTICATION AND CIPHERING REJECT	
8	<-		PAGING TYPE1~~PAGING REQUEST TYPE 1~~	Mobile identity = IMSI ~~Paging order is for TBF establishment.~~
9	UE			No response from the UE to the request. This is checked for 10 seconds.
				The following messages are sent and shall be received on cell B.
10		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.
11	UE			No ROUTING AREA UPDATING REQUEST sent to the SS (SS waits 30 seconds).
12	UE			No periodic ROUTING AREA UPDATING REQUEST sent to the SS (SS waits T3310 .
13	UE			The UE is switched off (see ICS).
14	SS			No DETACH REQUEST sent to the SS (SS waits 30 seconds).
15	UE			The UE is set in UE operation mode A (see ICS) and the test is repeated from step 1 to step 13.

Specific message contents

None.

12.6.1.2.5 Test requirements

UE shall:

- initiate a PS attach procedure with information elements specified in the above Expected Sequence when UE is powered on or switched on.

After UE receives the AUTHENTICATION AND CIPHERING REJECT message, UE shall:

- not perform normal routing area updating when the RF level of the attached cell is lower than the RF level of the new cell.

- not perform a periodic routing area updating when the timer T3312 expires.

- not perform PS detach when UE is switched off.
- delete the stored RAI, PS-CKSN, P-TMSI and P-TMSI signature.
- consider the USIM as invalid until power is switched off or USIM is removed.

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

~~3G~~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, cell B in MCC1/MNC1/LAC1/RAC2.
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		
				The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell A.
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).
8		SS		The SS starts the timer T3360
9	->		AUTHENTICATION AND CIPHERING FAILURE	GMM cause='MAC failure'
10	<-		IDENTITY REQUEST	Identity type = IMSI
11	->		IDENTITY RESPONSE	Mobile identity = IMSI
12		SS		The SS checks that the P-TMSI originally used in the authentication challenge corresponded to the correct IMSI.
13	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication.
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	
				The following messages are sent and shall be received on cell B.
18		SS		Activate cell B with a lower signal strength than cell A. RF level of cell A is lowered until cell B is preferred by the UE.
19	->		ROUTING AREA UPDATING 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 UPDATING ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
22	->		ROUTING AREA UPDATING 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.

Specific message contents

None.

12.6.1.3.1.5 Test requirements

UE shall:

- initiate a PS attach procedure with information element specified in the above Expected Sequence when UE is powered on or switched on.
- send an AUTHENTICATION AND CIPHERING FAILURE message with GMM cause ‘MAC failure’ to the SS
- start timer T3318.

After UE receives the IDENTITY REQUEST message from SS, UE shall:

- send the IDENTITY RESPONSE message to SS

After UE receives the second AUTHENTICATION AND CIPHERING REQUEST message (containing a valid MAC) from SS, UE shall:

- stop timer T3318, if running
- 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

~~3G~~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, cell B in MCC1/MNC1/LAC1/RAC2.
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		
				The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell A.
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.
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	
				The following messages are sent and shall be received on cell B.
14		SS		Activate cell B with lower signal strength than cell A. RF level of cell A is lowered until cell B is preferred by the UE.
15	->		ROUTING AREA UPDATING 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 UPDATING ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2
18	->		ROUTING AREA UPDATING 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.

Specific message contents

None.

12.6.1.3.2.5 Test requirements

UE shall:

- initiate a PS attach procedure with information element specified in the above Expected Sequence when UE is powered on or switched on.
- send AUTHENTICATION AND CIPHERING FAILURE message with GMM cause 'synch failure' to the SS
- start timer T3320.

After UE receives the second AUTHENTICATION AND CIPHERING REQUEST message from SS, UE shall:

- stop timer T3320, if running.
- send AUTHENTICATION AND CIPHERING RESPONSE message to SS.

12.6.2 ~~Test of ciphering mode setting~~void

~~The purpose of this procedure is to let the network to trigger the start and stop of stream ciphering.~~

~~The SS shall start and synchronise ciphering and deciphering according to GSM 03.20. The bitstream shall be generated by algorithm GEA/1.~~

~~12.6.2.1 Ciphering mode / start ciphering~~

~~12.6.2.1.1 Definition~~

~~12.6.2.1.2 Conformance requirement~~

~~1) When the UE receives the AUTHENTICATION AND CIPHERING REQUEST message during the attach procedure, with Ciphering indicator information element set to 'ciphering mode off', the User Equipment shall:~~

~~1.1 responds with an AUTHENTICATION AND CIPHERING RESPONSE message~~

~~1.2 not start ciphering~~

~~2) When the UE receives the AUTHENTICATION AND CIPHERING REQUEST message during the routing area updating procedure, with Ciphering indicator information element set to 'ciphering mode on', the User Equipment shall:~~

~~2.1 responds with an AUTHENTICATION AND CIPHERING RESPONSE message~~

~~2.2 start ciphering and deciphering with the algorithm indicated by the Ciphering algorithm information element~~

~~2.3 the ciphering uses the cipher key determined during the authentication procedure~~

~~Reference~~

~~3G TS 24.008 clause 4.7.7~~

~~12.6.2.1.3 Test purpose~~

~~To test the behaviour of the UE if the network accepts the authentication and ciphering procedure with ciphering.~~

12.6.2.1.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC2.
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. Authentication procedure without ciphering is performed.

The UE initiates a routing area updating procedure, and the SS initiates an authentication and ciphering procedure to start ciphering.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell A.
2		UE		The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 27.
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 Message not ciphered
5	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Ciphering off Message not ciphered
6	->		AUTHENTICATION AND CIPHERING RESPONSE	RES Message not ciphered
7	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Message not ciphered
8	->		ATTACH COMPLETE	Message not ciphered
9	<-		PAGING REQUEST TYPE 1	Mobile identity = P-TMSI-2 Paging order is for TBF establishment. Message not ciphered
10	->		UPLINK RLC DATA BLOCK	LLC PDU implicitly indicating paging response. Message not ciphered
				The following messages are sent and shall be received on cell B.
11		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.
12	->		ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1 Message not ciphered
13	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Ciphering on Message not ciphered
14	->		AUTHENTICATION AND CIPHERING RESPONSE	RES Message not ciphered
15	<-		ROUTING AREA UPDATING ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2 Message ciphered
16	->		ROUTING AREA UPDATING COMPLETE	Message ciphered
17	<-		PAGING REQUEST TYPE 1	Mobile identity = P-TMSI-1 Paging order is for TBF establishment. Message not ciphered
18	->		UPLINK RLC DATA BLOCK	LLC PDU implicitly indicating paging response. Message ciphered
19	<-		P-TMSI REALLOCATION COMMAND	Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-2 Message ciphered
20	->		P-TMSI REALLOCATION COMPLETE	Message ciphered

21	<-	IDENTITY REQUEST	Identity type = IMEI Message not ciphered
22	->	IDENTITY RESPONSE	Mobile identity = IMEI Message not ciphered
23	<-	P-TMSI REALLOCATION COMMAND	Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2 Message ciphered
24	->	P-TMSI REALLOCATION COMPLETE	Message ciphered
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, PS detach' Message ciphered
27	UE		The UE is set in UE operation mode A (see ICS) and the test is repeated from step 3 to step 26.

12.6.2.1.5 Test requirements

Case1)

UE shall:

- initiate a PS attach procedure with information elements specified in the above Expected Sequence when UE is powered on or switched on.

When the UE receives the AUTHENTICATION AND CIPHERING REQUEST message during the PS attach procedure, with Ciphering indicator information element set to 'ciphering mode off', UE shall:

- respond with an AUTHENTICATION AND CIPHERING RESPONSE message.
- not start ciphering.

Case2)

UE shall:

- initiate a routing area updating procedure with information elements specified in the above Expected Sequence.
- When the UE receives the AUTHENTICATION AND CIPHERING REQUEST message during the routing area updating procedure, with Ciphering indicator information element set to 'ciphering mode on', UE shall:
  - responds with an AUTHENTICATION AND CIPHERING RESPONSE message.
  - start ciphering and deciphering with the algorithm indicated by the Ciphering algorithm information element.
  - apply the ciphering that uses the cipher key determined during the authentication procedure.

12.6.2.2 Ciphering mode / stop ciphering

12.6.2.2.1 Definition

12.6.2.2.2 Conformance requirement

1) When the UE receives the AUTHENTICATION AND CIPHERING REQUEST message during the attach procedure, with Ciphering indicator information element set to 'ciphering mode on', the User Equipment shall:

1.1 responds with an AUTHENTICATION AND CIPHERING RESPONSE message

1.2 start ciphering and deciphering with the algorithm indicated by the Ciphering algorithm information element

1.3 the ciphering uses the cipher key determined during the authentication procedure

2) When the UE receives the AUTHENTICATION AND CIPHERING REQUEST message during the routing area updating procedure, with Ciphering indicator information element set to 'ciphering mode on', the User Equipment shall:

2.1. responds with an AUTHENTICATION AND CIPHERING RESPONSE message

2.2. start ciphering and deciphering with the algorithm indicated by the Ciphering algorithm information element

2.3. the ciphering uses the cipher key determined during the authentication procedure

Reference

3G TS 24.008 clause 4.7.7

12.6.2.2.3 Test purpose

To test the behaviour of the UE if the network accepts the authentication and ciphering procedure without ciphering.

12.6.2.2.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC2.
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 to start ciphering.

The UE initiates a routing area updating procedure. A RA updating procedure is initiated, and authentication procedure without ciphering is performed. Ciphering is turned off.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell A.
2		UE		The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 21.
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 Message not ciphered
5	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Ciphering on Message not ciphered
6	->		AUTHENTICATION AND CIPHERING RESPONSE	RES Message not ciphered
7	<-		ATTACH ACCEPT	Attach result = 'PS only attached' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Message ciphered
8	->		ATTACH COMPLETE	Message ciphered
9	<-		PAGING REQUEST TYPE 1	Mobile identity = P-TMSI-2 Paging order is for TBF establishment. Message not ciphered
10	->		UPLINK RLC DATA BLOCK	LLC PDU implicitly indicating paging response. Message ciphered
				The following messages are sent and shall be received on cell B.
11		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.
12	->		ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1 Message not ciphered
13	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Ciphering off Message not ciphered
14	->		AUTHENTICATION AND CIPHERING RESPONSE	RES Message not ciphered
15	<-		ROUTING AREA UPDATING ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2 Message not ciphered
16	->		ROUTING AREA UPDATING COMPLETE	Message not ciphered
17	<-		PAGING REQUEST TYPE 1	Mobile identity = P-TMSI-1 Paging order is for TBF establishment.
18	->		UPLINK RLC DATA BLOCK	LLC PDU implicitly indicating paging response. Message not ciphered
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' Message not ciphered

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 that due to the test of ciphering, it is in this test case indicated whether each message is ciphered or not.

12.6.2.2.5 Test requirements

Case1)

UE shall:

- initiate a PS attach procedure with information elements specified in the above Expected Sequence when UE is powered on or switched on.
- When the UE receive the AUTHENTICATION AND CIPHERING REQUEST message form SS during the PS attach procedure, with Ciphering indicator information element set to 'ciphering mode on', UE shall:
  - respond with an AUTHENTICATION AND CIPHERING RESPONSE message.
  - start ciphering and deciphering with the algorithm indicated by the Ciphering algorithm information element.
  - apply the ciphering that uses the cipher key determined during the authentication procedure.

Case2)

UE shall:

- initiate a routing area updating procedure with information elements specified in the above Expected Sequence.
- When the UE receives the AUTHENTICATION AND CIPHERING REQUEST message during the routing area updating procedure, with Ciphering indicator information element set to 'ciphering mode on', UE shall:
  - respond with an AUTHENTICATION AND CIPHERING RESPONSE message.
  - start ciphering and deciphering with the algorithm indicated by the Ciphering algorithm information element.
  - apply the ciphering that uses the cipher key determined during the authentication procedure.

12.6.2.3 Ciphering mode / IMEISV request

12.6.2.3.1 Definition

12.6.2.3.2 Conformance requirement

1) When the UE receives the AUTHENTICATION AND CIPHERING REQUEST message during the attach procedure, with Ciphering indicator information element set to 'ciphering mode on' and 'IMEISV requested', the User Equipment shall:

   1.1 responds with an AUTHENTICATION AND CIPHERING RESPONSE message

   1.2 include IMEISV

   1.3 start ciphering and deciphering with the algorithm indicated by the Ciphering algorithm information element

   1.4 the ciphering uses the cipher key determined during the authentication procedure

2) When the UE receives the AUTHENTICATION AND CIPHERING REQUEST message during the routing area updating procedure, with Ciphering indicator information element set to 'ciphering mode off' and 'IMEISV not requested', the User Equipment shall:

2.1 responds with an AUTHENTICATION AND CIPHERING RESPONSE message

2.2 not include IMEISV

2.3 not start ciphering

Reference

3G TS 24.008 clause 4.7.7

12.6.2.3.3 Test purpose

To test the behaviour of the UE with respect to return IMEISV on request only.

12.6.2.3.4 Method of test

Initial condition

System Simulator:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC2.
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. IMEISV is requested.

The UE initiates a routing area updating procedure, and the SS initiates a new authentication and ciphering procedure without requesting IMEISV.

Expected Sequence

Step	Direction		Message	Comments
	UE	SS		
				The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell A.
2		UE		The UE is set in UE operation mode C (see ICS). If UE operation mode C not supported, goto step 21.
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 Message not ciphered
5	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Ciphering on IMEISV requested Message not ciphered
6	->		AUTHENTICATION AND CIPHERING RESPONSE	RES Mobile identity = IMEISV Message not ciphered
7	<-		ATTACH ACCEPT	Attach result = 'PS attach' Mobile identity = P-TMSI-2 P-TMSI-2 signature Routing area identity = RAI-1 Message ciphered
8	->		ATTACH COMPLETE	Message ciphered
9	<-		PAGING REQUEST TYPE 1	Mobile identity = P-TMSI-1 Paging order is for TBF establishment. Message not ciphered
10	->		UPLINK RLC DATA BLOCK	LLC PDU implicitly indicating paging response. Message ciphered
				The following messages are sent and shall be received on cell B.
11		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.
12	->		ROUTING AREA UPDATING REQUEST	Update type = 'RA updating' P-TMSI-2 signature Routing area identity = RAI-1 Message not ciphered
13	<-		AUTHENTICATION AND CIPHERING REQUEST	Request authentication. Ciphering off IMEISV not requested Message not ciphered
14	->		AUTHENTICATION AND CIPHERING RESPONSE	RES No IMEISV included Message not ciphered
15	<-		ROUTING AREA UPDATING ACCEPT	Update result = 'RA updated' Mobile identity = P-TMSI-1 P-TMSI-1 signature Routing area identity = RAI-2 Message not ciphered
16	->		ROUTING AREA UPDATING COMPLETE	Message not ciphered
17	<-		PAGING REQUEST TYPE 1	Mobile identity = P-TMSI-1 Paging order is for TBF establishment. Message not ciphered
18	->		UPLINK RLC DATA BLOCK	LLC PDU implicitly indicating paging response. Message not ciphered
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' Message not ciphered
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 that due to the test of ciphering, it is in this test case indicated whether each message is ciphered or not.

12.6.2.3.5 Test requirements

Case1)

UE shall:

- initiate a PS attach procedure with information elements specified in the above Expected Sequence when UE is powered on or switched on.
- When the UE receives the AUTHENTICATION AND CIPHERING REQUEST message during the attach procedure, with Ciphering indicator information element set to 'ciphering mode on' and 'IMEISV requested', UE shall:
  - respond with the AUTHENTICATION AND CIPHERING RESPONSE message.
  - include the IMEISV in the AUTHENTICATION AND CIPHERING RESPONSE message.
  - start ciphering and deciphering with the algorithm indicated by the Ciphering algorithm information element.
  - apply the ciphering that uses the cipher key determined during the authentication procedure

Case2)

UE shall:

- initiate a routing area updating procedure with information elements specified in the above Expected Sequence.
- When the UE receives the AUTHENTICATION AND CIPHERING REQUEST message during the routing area updating procedure, with Ciphering indicator information element set to 'ciphering mode off' and 'IMEISV not requested', UE shall:
  - respond with the AUTHENTICATION AND CIPHERING RESPONSE message.
  - not include the IMEISV in the AUTHENTICATION AND CIPHERING RESPONSE message.
  - not start ciphering.

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.

12.7.1General 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

~~3G~~ 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:

Two cells (not simultaneously activated), cell A in MCC1/MNC1/LAC1/RAC1, cell B in MCC1/MNC1/LAC1/RAC2.
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 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

UE shall:

- initiate a PS attach procedure with information elements specified in the above Expected Sequence when UE is powered on or switched on.

When SS requests an IMSI with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMSI.

When SS requests an IMEI with the IDENTITY REQUEST message, UE shall:

- send the IDENTITY RESPONSE message with the Mobile identity = IMEI.

When 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

~~3G~~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, cell B in MCC1/MNC1/LAC1/RAC1.
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		
				The following messages are sent and shall be received on cell A.
1		SS		The SS activates cell A.
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'

Specific message contents

None.

12.8.5 Test requirements

When UE receives the ATTACH ACCEPT or the ROUTING AREA UPDATE ACCEPT messages, UE shall:

- store the received READY timer value.

3GPP TSG-T1 Meeting #10
Copenhagen, Denmark, 8-9 February, 2001

Tdoc T1-010090

3GPP TSG- T1/SIG SWG Meeting #15
Copenhagen, Denmark, 5-7 Feb 2001

TSG T1S-010???

CR-Form-v3

CHANGE REQUEST

⌘ **34.123-1** **CR** **051** ⌘ rev **-** ⌘ Current version: **3.2.0** ⌘

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

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

Title:	⌘	Update to 16. SMS test specification
Source:	⌘	Denso
Work item code:	⌘	***Date:*** ⌘ 2001-02-05
Category:	⌘	**D** ***Release:*** ⌘ R99

Use one of the following categories:
F *(essential 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 has been modified according to new release of core specifications (2000-12).
Summary of change:	⌘	Modification of references and terminology, and correction of initial conditions.
Consequences if not approved:	⌘	

Clauses affected:	⌘	16.1, 16.2, 16.3, 16.4
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

16 Short message service (SMS)

Ref.: 3GPP TS 23.040, 3GPP TS 24.011 (point to point)
3GPP TS 23.041, (cell broadcast)

General

The purpose of these tests is to verify that the UE can handle ~~UMTS~~Iu mode system functions when submitting or receiving Short Messages (SM) between UE and a short message service centre as described in 3GPP TS 23.040.

The procedures are based upon services provided by the Mobility Management (MM) sublayer and GPRS Mobility Managemant(GMM) sublayer which are not tested in this case.

The SMS comprises three basic services; SMS point to point services on CS mode, on PS mode and SMS cell broadcast service. The SMS point to point services on CS mode shall work in an active UE at any time independent of whether or not there is a speech or data call in progress. The SMS point to point services on PS mode shall work in an active UE at any time independent of whether or not there is a PDP context in progress. The SMS cell broadcast service only works when the UE is in idle mode.

Since the timer TC1M currently is not standardized, the value of TC1M shall be declared by the manufacturer (to be used in sub-clauses 16.1.1 and 16.1.2).

The manufacturer shall declare whether SMS messages are stored in the USIM and/or the ME. This shall be referred to as the SMS message store in the following tests.

Unless otherwise stated default message contents from 3GPP TS 34.108 applies for following tests.

16.1 Short message service point to point on CS mode

All of test cases in this sub-clause are applied to UE supporting CS mode.

16.1.1 SMS mobile terminated

16.1.1.1 Definition

16.1.1.2 Conformance requirements

An active UE shall be able to receive short message TPDU (SMS-DELIVER) at any time, independently of whether or not there is a speech or data call in progress. A report will always be returned to the SC, confirming that the UE has received the short message.

Reference

3GPP TS 23.040, sub-clause 3.1.

16.1.1.3 Test purpose

To verify the ability of a UE to receive and decode the SMS where provided for the point to point service.

16.1.1.4 Method of test

Initial Conditions

- System simulator:
  - 1 cell, default parameters.

- User Equipment:
  - the UE shall be in ~~"Idle, updated" state~~ MM-state "Idle, updated";
  - the SMS message storage shall be empty.

Related ICS/IXIT Statements

Support for Short message MT/PP.

Description of the basic procedures to display a mobile terminated short message.

The value of timer TC1M.

Whether SMS messages are stored in the USIM and/or the ME.

Support for call control state U10.

Test procedure

a) Mobile terminates establishment of Radio Resource Connection. After the completion of RRC Connection SS authenticates UE.

After the SS receives SECURITY MODE COMPLETE, the SS sends a CP-DATA message. The information element of the CP-DATA message will be RP-DATA RPDU (SMS DELIVER TPDU).

b) The SS waits a maximum of 25 seconds for the CP-ACK message and then a maximum of 60 seconds for the CP-DATA message containing the RP-ACK RPDU.

c) The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates RRC Connection release.

d) Steps a), b) and c) are repeated but the first CP-DATA message from the UE is not acknowledged. The second CP-DATA message from the UE is acknowledged by a CP-ACK within a time TC1M.

e) Steps a) and b) are repeated. The SS is configured not to send CP-ACK. Then maximum 3 CP-DATA retransmissions may occur. After a duration of TC1M + 5 seconds after the last CP-DATA retransmission the SS then initiates the channel release. The 5 seconds is the appropriate time to wait to verify that the UE does not send more than the maximum allowed (3) CP-DATA retransmissions.

f) The SMS message store shall be cleared manually by the operator.

g) A data or speech call is established on a DTCH with the SS and the state U10 of call control is entered. The SS sends a PAGING TYPE 2.

The SS sends a CP-DATA message. The information element of the CP-DATA message will be RP-DATA RPDU (SMS DELIVER TPDU). The SS waits a maximum of 25 seconds for the CP-ACK message and then a maximum of 60 seconds for the CP-DATA message containing the RP-ACK RPDU.

h) The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates RRC Connection release. The SMS message store shall be cleared manually by the operator.

i) Steps g) and h) are repeated but the first CP-DATA message from the UE is not acknowledged. The second CP-DATA message from the UE is acknowledged by a CP-ACK within a time TC1M.

j) Step g) is repeated. The SS is configured not to send CP-ACK. Then maximum 3 CP-DATA retransmissions may occur. After a duration of TC1M + 15 seconds after the last CP-DATA retransmission the SS initiates the channel release. The 15 seconds is the appropriate time to wait to verify that the UE does not send more than the maximum allowed (3) CP-DATA retransmissions (during a call in progress).

k) A data or speech call is established on a DTCH with the SS and the state U10 of call control shall be entered. DTCHThe speech call is cleared by the SS with a disconnect message. (The call clearing is continued on the DCCH in parallel to the following exchange of messages related to SMS).

The SS sends a CP-DATA RPDU (SMS DELIVER TPDU) message. The information element of the CP-DATA message is RP-DATA.

The SS waits a maximum of 25 seconds for the CP-ACK message and then a maximum of 60 seconds for the CP-DATA message containing the RP-ACK RPDU.

The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates channel release.

The SMS message store shall be cleared manually by the operator.

l) A data or speech call is established with the SS and the state U10 of call control is entered. After the SS sends a PAGING TYPE 2,the speech call shall be cleared from the UE. (The call clearing is continued in parallel to the following exchange of messages related to SMS).

The SS sends a CP-DATA message. The information element of the CP-DATA message is RP-DATA RPDU (SMS DELIVER TPDU).

The SS waits a maximum of 25 seconds for the CP-ACK message and then a maximum of 60 seconds for the CP-DATA message containing the RP-ACK RPDU.

The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates RRC Connection release.

The SMS message store shall be cleared manually by the operator.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
2	-->		PAGING RESPONSE	
3	<--		AUTHENTICATION REQUEST	
4	-->		AUTHENTICATION RESPONSE	
5	<--		SECURITY MODE COMMAND	
6	-->		SECURITY MODE COMPLETE	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
8	SS			Waits max 25 seconds for CP-ACK
9	-->		CP-ACK	
10	SS			Waits max 60 seconds for RP-ACK RPDU
11	-->		CP-DATA	Contains RP-ACK RPDU
12	<--		CP-ACK	
13	UE			There should be no further CP-DATA messages until the UE aborts the RRC connection .
14	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
15			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
16	-->		PAGING RESPONSE	
17	<--		AUTHENTICATION REQUEST	
18	-->		AUTHENTICATION RESPONSE	
19	<--		SECURITY MODE COMMAND	
20	-->		SECURITY MODE COMPLETE	
21	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
22	SS			Waits max 25 seconds for CP-ACK
23	-->		CP-ACK	
24	SS			Waits max 60 seconds for RP-ACK RPDU

Step	Direction		Message	Comments
	UE	SS		
25	-->		CP-DATA	First CP-DATA from UE, contains RP-ACK RPDU
26	SS			First CP-DATA message not acknowledged by SS
27	-->		CP-DATA	Retransmitted CP-DATA from UE within twice TC1M, after step 25, contains RP-ACK RPDU
28	<--		CP-ACK	Second CP_DATA message is acknowledged
29	UE			There should be no further CP-DATA messages until the UE aborts the RRC connection.
30	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
31			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
32	-->		PAGING RESPONSE	
33	<--		AUTHENTICATION REQUEST	
34	-->		AUTHENTICATION RESPONSE	
35	<--		SECURITY MODE COMMAND	
36	-->		SECURITY MODE COMPLETE	
37	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
38	SS			Waits max 25 seconds for CP-ACK
39	-->		CP-ACK	
40	SS			Waits max 60 seconds for RP-ACK RPDU
41	-->		CP-DATA	Contains RP-ACK RPDU
42	SS			First CP-DATA message not acknowledged by SS
43			CP-DATA	Retransmitted CP-DATA from UE within twice TC1M after step 41, contains RP-ACK RPDU
44	SS			Retransmitted CP-DATA message not acknowledged by SS
45	UE			Depending upon the maximum number of CP-DATA retransmissions implemented, step 43 and 44 may be repeated.
46	<--		RRC CONNECTION RELEASE	RRC connecton is released after a duration of TC1M + 5 seconds after the last CP-DATA retransmission..
47	-->		RRC CONNECTION RELEASE COMPLETE	
48	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
49	SS			A data or speech call is established on a DTCH and the state U10 of call control is entered.
50			PAGING TYPE 2	
51	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
52	SS			Waits max 25 seconds for CP-ACK
53	-->		CP-ACK	
54	SS			Waits max 60 seconds for RP-ACK RPDU
55	-->		CP-DATA	Contains RP-ACK RPDU
56	<--		CP-ACK	
57	<--		DISCONNECT	Disconnect the active call
58	-->		RELEASE	
59	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
60	UE			Clear the SMS message store
61	SS			A data or speech call is established on a DTCH and the state U10 of call control is entered.
62	<--		PAGING TYPE 2	
63	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
64	SS			Waits max 25 seconds for CP-ACK
65	-->		CP-ACK	
66	SS			Waits max 60 seconds for RP-ACK RPDU
67	-->		CP-DATA	First CP-DATA from UE, contains RP-ACK RPDU
68	SS			First CP-DATA message not acknowledged by SS
69	-->		CP-DATA	Retransmitted CP-DATA message within twice TC1M after step 67, contains RP-ACK RPDU

Step	Direction		Message	Comments
	UE	SS		
70	<--		CP-ACK	Second CP-DATA message is acknowledged
71	<--		DISCONNECT	Disconnect the active call
72	-->		RELEASE	
74	UE			There should be no further CP-DATA messages until the UE aborts the RRC connection
75	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
76	UE			Clear the SMS message store
77	SS			A data or speech call is established on a DTCH and the state U10 of call control is entered.
78	<--		PAGING TYPE 2	
	-->			
79	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
80	SS			Waits max 25 seconds for CP-ACK
81	-->		CP-ACK	
82	SS			Waits max 60 seconds for RP-ACK RPDU
83	-->		CP-DATA	First CP-DATA from UE, contains RP-ACK RPDU
84	SS			First CP-DATA message not acknowledged by SS
85	-->		CP-DATA	Transmitted CP-DATA message within twice TC1M after step 83, contains RP-ACK RPDU
86	SS			Retransmitted CP-DATA message not acknowledged by SS
87	UE			Depending on the maximum number of CP-DATA retransmissions implemented, step 85-86 may be repeated. The maximum number of retransmissions may however not exceed three.
88	<--		RRC CONNECTION RELEASE	RRC CONNECTION is released after a duration of TC1M + 15 seconds after the last CP-DATA retransmission.
89	-->		RRC CONNECTION RELEASE COMPLETE	
90	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
91	UE			Clear the SMS message store
92	SS			A data or speech call is established on a DTCH and the state U10 of call control is entered.
93	<--		PAGING TYPE 2	Sent on DCCH associated with the DTCH
94	<--		DISCONNECT	The speech call is cleared by the SS. The call clearing is continued in parallel to the following exchange of messages related to SMS.
95	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
96	SS			Waits max 25 seconds for CP-ACK
97	-->		CP-ACK	
98	SS			Waits max 60 seconds for RP-ACK RPDU
99	-->		CP-DATA	Contains RP-ACK RPDU
100	<--		CP-ACK	
101	UE			There should be no further CP-DATA messages until the UE aborts the RR connection.
102	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
103	UE			Clear the SMS message store
104	SS			A data or speech call is established on a DTCH and the state U10 of call control is entered.
105	<--		PAGING TYPE 2	
106	-->		DISCONNECT	The speech call is cleared from the UE. The call clearing is continued in parallel to the following exchange of messages related to SMS.
107	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
108	<--		RELEASE	This message is likely to be sent before all of the CP-DATA message has been sent on the DCCH.

Step	Direction		Message	Comments
	UE	SS		
109	-->		RELEASE COMPLETE	
110	-->		CP-ACK	shall be sent before 25 seconds after the start of step 107
111	SS			Waits max 60 seconds for RP-ACK RPDU
112	-->		CP-DATA	Contains RP-ACK RPDU
113	<--		CP-ACK	
114	UE			There should be no further CP-DATA messages until the UE aborts the RRC connection.
115	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
116	UE			Clear the SMS message store

NOTE: Time values for SS wait time are chosen sufficiently high to be sure that the UE has enough time to respond to the different messages.

Specific Message Contents

SMS DELIVER TPDU

Information element	CommentValue
TP-UDL	160
TP-UD (140 octets)	text of message (160 characters)

NOTE: The 160 characters in TP-UD shall include at least one occurrence of each character in the default alphabet (see 3GPP TS 23.038, sub-clause 6.2.1).

16.1.1.5 Test requirements

After step 7 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 seconds and CP-DATA containing RP-ACK within 60 seconds.

After step 25 UE shall retransmit CP-DATA containing RP-ACK within twice TC1M.

After step 30 UE shall indicate that an SM has arrived.

After step 43 UE shall repeat CP-DATA retransmissions as many times as the decided maximum number.

After step 48 UE shall indicate that an SM has arrived.

After step 51 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 seconds and CP-DATA containing RP-ACK within 60 seconds.

After step 67 UE shall retransmit CP-DATA containing RP-ACK within twice TC1M.

After step 74 UE shall indicate that an SM has arrived.

After step 79 UE shall repeat CP-DATA retransmissions as many times as the decided maximum number.

After step 90 UE shall indicate that an SM has arrived.

After step 95 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 seconds and CP-DATA containing RP-ACK within 60 seconds.

After step 107 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 seconds and CP-DATA containing RP-ACK within 60 seconds.

16.1.2 SMS mobile originated

16.1.2.1 Definition

16.1.2.2 Conformance requirements

An active UE shall be able to submit short message TPDU (SMS-SUBMIT) at any time, independently of whether or not there is a speech or data call in progress.

Reference

3GPP TS 23.040, sub-clause 3.1.

16.1.2.3 Test purpose

To verify that the UE is able to correctly send a short message where the SMS is provided for the point to point service. The test also verifies that the UE is capable of simultaneously receiving a network originated SM whilst sending a mobile originated SM.

16.1.2.4 Method of test

Initial Conditions

- System simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~"Idle, updated" state~~ MM-state "Idle, updated";
  - the SMS message storage shall be empty.

Related ICS/IXIT Statements

Support for Short message MO/PP.

Description of the basic procedures to display a mobile originated short message.

Support for state U10 of call control.

The value of timer TC1M.

Whether SMS messages are stored in the USIM and/or the ME.

Maximum length (characters) of a mobile originated short message.

Test procedure

a) The UE shall be set up to send a SM to the SS. The SS responds to RRC CONNECTION REQUEST by allocating aCCCH. The SS recievesRRC CONNECTION SETUP COMPLETE on DCCH and then performs the authentication.

b) After receiving SECURITY MODE COMMAND UE shall send SECURITY COMMAND COMPLETE.

c) The SS responds to the CP-DATA containing RP-DATA RPDU (SMS SUBMIT TPDU) from the UE with a CP-ACK message within TC1M followed by a CP-DATA message containing the correct RP-ACK RPDU. The SS waits a maximum of 25 seconds for the CP-ACK message.

d) The SS sends a channel release message to the UE.

e) Steps a) and b) are repeated. The SS is configured not to send the CP-ACK message. Then maximum 3 CP-DATA retransmissions may occur. After a duration of TC1M + 5 seconds after the last CP-DATA retransmission the SS initiates channel release. The 5 seconds is the appropriate time to wait to verify that the UE does not send more than the maximum CP-DATA retransmissions.

f) Steps a) and b) are repeated. On receipt of the CP-DATA from the UE the SS sends a CP-ERROR message within TC1M containing a "Network Failure" cause. Then the SS initiates channel release.

g) ~~g)~~ A data or speech call is established with the SS and the state U10 of call control is entered. The UE is setup to send an SM to the SS. After the reception of the CM SERVICE REQUEST, the SS sends a CM SERVICE ACCEPT message.

h) ~~h)~~ The SS responds to the CP-DATA containing RP-DATA RPDU (SMS SUBMIT TPDU) from the UE with a CP-ACK message within TC1M followed by a CP-DATA message containing the correct RP-ACK RPDU. The SS waits a maximum of 25 seconds for the CP-ACK message. Then the SS sends a channel release message to the UE.

i) Step g) is repeated. The SS is configured not to send the CP-ACK message. Then maximum 3 CP-DATA retransmissions may occur. After a duration of TC1M + 15 seconds after the last CP-DATA retransmission the SS initiates channel release. The 15 seconds is the appropriate time to wait to verify that the UE does not send more than the maximum CP-DATA retransmissions (during a call in progress).

j) The SS is configured to receive a mobile originated SM. Steps a) and b) are repeated and, using the end of the CP-DATA message from the UE as a trigger, the SS sends a SM to the UE. In this case a new transaction identifier shall be used in the CP messages of SMS mobile terminated.

k) The UE is set up to send an SM to the SS. On receipt of the CM SERVICE REQUEST the SS sends a CM SERVICE REJECT message with the reject cause set to "Service Option not supported" or "Service Option temporarily out of order". After 5 seconds the SS initiates channel release.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<--	SYSTEM INFORMATION	BCCH
2		-->	RRC CONNECTION REQUEST	CCCH
3		<--	RRC CONNECTION SETUP	CCCH
4		-->	RRC CONNECTION SETUP COMPLETE	DCCH
5		-->	CM SERVICE REQUEST	
6		<--	AUTHENTICATION REQUEST	
7		-->	AUTHENTICATION RESPONSE	
8		<--	SECURITY MODE COMMAND	
9		-->	SECURITY MODE COMPLETE	
10		-->	CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU)
11		<--	CP-ACK	Sent within TC1M after step 10
12		<--	CP-DATA	Contains RP-ACK RPDU
13		SS		Waits max 25 seconds for CP-ACK
14		-->	CP-ACK	
15		<--	RRC CONNECTION RELEASE	RRC connection is released.
16		-->	RRC CONNECTION RELEASE COMPLETE	
17		<--	SYSTEM INFORMATION	BCCH
18		-->	RRC CONNECTION REQUEST	CCCH
19		<--	RRC CONNECTION SETUP	CCCH
20		-->	RRC CONNECTION SETUP COMPLETE	DCCH
21				
22		-->	CM SERVICE REQUEST	
23		<--	AUTHENTICATION REQUEST	
24		-->	AUTHENTICATION RESPONSE	

Step	Direction		Message	Comments
	UE	SS		
25	<--		SECURITY MODE COMMAND	
26	-->		SECURITY MODE COMPLETE	
27	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU)
28	SS			SS configured not to send CP-ACK
29	-->		CP-DATA	Retransmitted CP-DATA message within twice TC1M after step 27
30	UE			Depending on the maximum number of CP-DATA retransmissions implemented, step 29 may be repeated. The maximum number of retransmissions may however not exceed three.
31	<--		RRC CONNECTION RELEASE	RRC CONNECTION is released after a duration of TC1M + 5 seconds after the last CP-DATA retransmission.
32	-->		RRC CONNECTION RELEASE COMPLETE	
33	<--		SYSTEM INFORMATION	BCCH
34	-->		RRC CONNECTION REQUEST	CCCH
35	<--		RRC CONNECTION SETUP	CCCH
36	-->		RRC CONNECTION SETUP COMPLETE	DCCH
37	-->		CM SERVICE REQUEST	
38	<--		AUTHENTICATION REQUEST	
39	-->		AUTHENTICATION RESPONSE	
40	<--		SECURITY MODE COMMAND	
41	-->		SECURITY MODE COMPLETE	
42	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU)
43	<--		CP-ERROR	Sent within TC1M containing "Network Failure" cause.
44	<--		RRC CONNECTION RELEASE	RRC CONNECTION is released.
45	-->		RRC CONNECTION RELEASE COMPLETE	
46	SS			A data or speech call is established on a DTCH and the state U10 of call control is entered.
47	UE			The UE is set up to send an SM
48	-->		CM SERVICE REQUEST	CM service type set to "short message "
49	<--		CM SERVICE ACCEPT	
50	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU)
51	<--		CP-ACK	Sent within TC1M after step 50
52	<--		CP-DATA	Contains RP-ACK RPDU
53	SS			Waits max 25 seconds for CP-ACK
54	-->		CP-ACK	
55	<--		RRC CONNECTION RELEASE	RRC CONNECTION is released.
56	-->		RRC CONNECTION RELEASE CONPLETE	
57	SS			A data or speech call is established on a DTCH and the state U10 of call control is entered.
58	-->		CM SERVICE REQUEST	CM service type set to "short message "
59	<--		CM SERVICE ACCEPT	
60	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU)
61	SS			SS configured not to send CP-ACK
62	-->		CP-DATA	Transmitted CP-DATA message within twice TC1M after step 60
63	UE			Depending on the maximum number of CP-DATA retransmissions implemented, step 62 may be repeated. The maximum number of retransmissions may however not exceed three.
64	<--		RRC CONNECTION RELEASE	RRC CONNECTION is released after a duration of TC1m + 15 seconds after the last CP-DATA retransmission.
65	-->		RRC CONNECTION RELEASE COMPLETE	
66	<--		SYSTEM INFORMATION	BCCH
67	-->		RRC CONNECTION REQUEST	CCCH
68	<--		RRC CONNECTION SETUP	CCCH
69	-->		RRC CONNECTION SETUP COMPLETE	DCCH

Step	Direction		Message	Comments
	UE	SS		
70	-->		CM SERVICE REQUEST	
71	<--		AUTHENTICATION REQUEST	
72	-->		AUTHENTICATION RESPONSE	
73	<--		SECURITY MODE COMMAND	
74	-->		SECURITY MODE COMPLETE	
75	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU)
76	SS			The SS sends an SM to the UE triggered by the end of the CP-DATA message from the UE
77	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
78	UE			The UE shall correctly receive the SM and indicate that a message has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed. In the MO case the UE shall send the CP-ACK message with transaction identifier assigned to this transfer. In the MT case the UE shall send a CP-ACK message and a CP-DATA message containing the RP-ACK RPDU. The transaction identifier shall be the same as chosen by the SS for the MT transfer.
79	-->		RRC CONNECTION REQUEST	
80	<--		RRC CONNECTION SETUP	
81	-->		RRC CONNECTION SETUP COMPLETE	
82	-->		CM SERVICE REQUEST	. CM service type set to "short message transfer"
83	<--		CM SERVICE REJ	Reject cause set to "Service Option not supported" or "Service Option temporarily out of order"
84	UE			
85	<--		RRC CONNECTION RELEASE	Sent 5 seconds after CM SERVICE REJ
86	-->		RRC CONNECTION RELEASE COMPLETE	

NOTE: Time values for SS wait times are chosen sufficiently high to be sure that the UE has enough time to respond to the different messages.

Specific Message Contents

SMS SUBMIT TPDU

Information element	CommentValue
TP-UDL TP-UD (140 octets max)	as applicable maximum number of characters (text of message) as defined by the manufacturer (see ICS/IXIT)

16.1.2.5 Test requirements

After step 9 UE shall send a CP-DATA containing RP-data. The RP-DATA shall contain SMS SUBMIT TPDU.

After step 27 UE shall retransmit a CP-DATA containing RP-data. The RP-DATA shall contain SMS SUBMIT TPDU.

After step 44 UE shall send the RRC CONNECTION RELEASE COMPLETE.

After step 49 UE shall send a CP-DATA containing RP-data. The RP-DATA shall contain SMS SUBMIT TPDU.

After step 60 UE shall repeat CP-DATA retransmissions as many times as the decided maximum number.

After step 77 UE shall correctly receive the SM and indicate that a message has arrived.

After step 83 UE shall not send CP-DATA.

16.1.3 Test of memory full condition and memory available notification:

The Memory Available Notification provides a means for the UE to notify the network that it has memory available to receive one or more short messages. The SMS status field in the USIM contains status information on the "memory available" notification flag.

16.1.3.1 Definition

16.1.3.2 Conformance requirement

1. When a mobile terminated message is Class 2, the UE shall ensure that the message has been transferred to the SMS data field in the USIM before sending an acknowledgement to the SC. The UE shall return a protocol error message if the short message cannot be stored in the USIM and there is other short message storage available in the UE. If all the short message storage in the UE is already in use, the UE shall return "memory capability exceeded".

2. When the UE rejects a short message due to lack of available memory capability the need to transfer notification shall be stored in the USIM.

3. If the memory capability becomes available because memory is cleared, the value of the memory capability exceeded notification flag in the USIM is read. If the flag is set, the UE notifies the network that memory capability is now available. After a positive acknowledgement from the network, the ME unsets the memory capability exceeded notification flag in the USIM.

References

- 3GPP TS 23.040, sub-clause 9.2.3.10, 3GPP TS 23.038, clause 4.

- 3GPP TS 23.040, sub-clause 10.3 (operation 14).

- 3GPP TS 23.040, sub-clause 10.3 (operation 14).

16.1.3.3 Test purpose

1. To verify that the UE sends the correct acknowledgement when its memory in the USIM becomes full.

2. To verify that the UE sends the correct acknowledgement when its memory in the ME and the USIM becomes full, and sets the "memory exceeded" notification flag in the USIM.

3. To verify that the UE performs the "memory available" procedure when its message store becomes available for receiving short messages, and only at this moment.

16.1.3.4 Method of test

Initial conditions

- System Simulator:

  - 1 cell, default parameters.

- User Equipment:

  - the UE shall be in ~~the idle updated state~~ MM-state "Idle, updated";

  - the SMS message storage shall be empty;

  - the UE shall be connected to the USIM simulator. The following shall be present in the USIM simulator:

    - EF_{SMS} with at least one record;

    - $EF_{SMSstatus}$, with SMS "Memory Cap. Exceed" notification flag set to "memory available";

- Service no. 4 (SMS) in EF_{SST} set to allocated and activated.

- for storing of Class 1 Short Messages the UE shall be set up to store Short Messages in the ME memory (by way of MMI, as described in ICS/IXIT statement).

Related ICS/IXIT Statements

Support for Short message MT/PP.

Description of the basic procedures to display a mobile terminated short message.

Whether SMS messages are stored in the USIM and/or the ME.

The value of timer TC1M.

Test procedure

a) step a) of sub-clause 16.1.5.3 (test of Class 2 Short Messages) is repeated until the UE sends a negative acknowledgement (RP-ERROR). The USIM simulator shall indicate if the "memory capability exceeded" notification flag has been set on the USIM.

b) a Class 1 Short Message is sent to the UE.

c) step b) is repeated until the UE sends a negative acknowledgement (RP-ERROR). The USIM simulator shall indicate if the "memory capability exceeded" notification flag has been set on the USIM.

d) a Short Message is sent to the UE with the DCS field of the SMS-DELIVER TPDU set to 0.

e) the SS prompts the operator to read a short message and to remove it from the message store of the UE.

f) the SS waits for a RRC CONNECTION REQUEST from the UE, and sends a RRC CONNECTION SETUP.

g) after the SS receives a RRC CONNECTION SETUP COMPLETE, the SS authenticates the UE and activates ciphering.

h) the SS answers to the RP-SMMA from the UE with a CP-DATA containing a RP-ACK RPDU.

i) after the UE has acknowledged the CP-DATA with a CP-ACK, the SS releases theRRC connection. The USIM simulator shall indicate if the "memory capability exceeded" notification flag has been unset on the USIM.

j) step e) is repeated.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
2	-->		PAGING RESPONSE	
3	<--		AUTHENTICATION REQUEST	
4	-->		AUTHENTICATION RESPONSE	
5	<--		SECURITY MODE COMMAND	
6	-->		SECURITY MODE COMPLETE	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU), Class 2 Short Message
8	SS			Waits max 25 seconds for CP-ACK
9	-->		CP-ACK	
10	SS			Waits max 60 seconds for RP-ACK RPDU
11	-->		CP-DATA	Contains RP-ACK RPDU
12	<--		CP-ACK	Within TC1M after step 11

Step	Direction		Message	Comments
	UE	SS		
13	<--		RRC CONNECTION RELEASE	RRC connection is released. Step 1-13 is repeated until UE sends a negative acknowledgement (RP-ERROR) in step 16. The RP-ERROR RPDU cause field shall be "Protocol error, unspecified" if there is message capability in the ME, or "Memory capability exceeded" if there is no message capability in the ME. If the total memory store of the UE is full, the ME shall set the "memory capability exceeded" notification flag on the USIM.
14	-->		RRC CONNECTION RELEASE COMPLETE	
15			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
16	-->		PAGING RESPONSE	
17	<--		AUTHENTICATION REQUEST	
18	-->		AUTHENTICATION RESPONSE	
19	<--		SECURITY MODE COMMAND	
20	-->		SECURITY MODE COMPLETE	
21	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU), Class 1 Short Message
22		SS		Waits max 25 seconds for CP-ACK
23	-->		CP-ACK	
24		SS		Waits max 60 seconds for RP-ACK RPDU
25	-->		CP-DATA	Shall contain RP-ACK RPDU if there is memory capability in the ME. If not it shall contain RP-ERROR RPDU which cause field shall be "memory capability exceeded". If the total memory store of the UE now becomes full at this step, the ME shall set the "memory cap. exceed" notification flag on the USIM.
26	<--		CP-ACK	Within TC1M after step 25
27	<--		RRC CONNECTION RELEASE	RRC connection is released. Step 15-27 is repeated until the UE sends an RP-ERROR. The USIM simulator shall indicate if the "memory capability exceeded" notification flag has been set on the USIM.
28	-->		RRC CONNECTION RELEASE COMPLETE	
29			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
30	-->		PAGING RESPONSE	
31	<--		AUTHENTICATION REQUEST	
32	-->		AUTHENTICATION RESPONSE	
33	<--		SECURITY MODE COMMAND	
34	-->		SECURITY MODE COMPLETE	
35	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) with TP-DCS set to 0
36		SS		Waits max 25 seconds for CP-ACK
37	-->		CP-ACK	
38		SS		Waits max 60 seconds for RP-ACK RPDU
39	-->		CP-DATA	Shall contain RP-ERROR RPDU with error cause "memory capability exceeded".
40	<--		CP-ACK	Within TC1M after step 39
41	<--		RRC CONNECTION RELEASE	RRC connection is released.
42	-->		RRC CONNECTION RELEASE COMPLETE	
43		SS		Prompts the operator to remove one of the short messages from the message store of the UE.
44	<--		SYSTEM INFORMATION	BCCH
45	-->		RRC CONNECTION REQUEST	CCCH
46	<--		RRC CONNECTION SETUP	CCCH
47	-->		RRC CONNECTION SETUP COMPLETE	DCCH
48	-->		CM SERVICE REQUEST	CM service type information element is set to "Short message transfer".
49	<--		CM SERVICE ACCEPT	

Step	Direction		Message	Comments
	UE	SS		
50	-->		CP-DATA	Contains RP-SMMA RPDU
51	<--		CP-ACK	
52	<--		CP-DATA	Contains RP-ACK RPDU
53	-->		CP-ACK	Acknowledge of CP-DATA containing the RP-ACK RPDU. The ME shall unset the "memory capability exceeded" notification flag on the USIM.
54	<--		RRC CONNECTION RELEASE	RRC connection is released. The USIM simulator shall indicate if the "memory capability exceeded" notification flag has been unset on the USIM.
55	-->		RRC CONNECTION RELEASE COMPLETE	
56		SS		Prompts the operator to remove one of the short messages from the message store of the UE.
57		UE		Shall not attempt to send a RP-SMMA RPDU. This is verified by checking that the UE does not send a CHANNEL REQUEST message with the establishment cause "Other services which can be completed with an SDCCH"

NOTE: Time values for SS wait time are chosen sufficiently high to be sure that the UE has enough time to respond to the different messages.

Specific Message Contents

SMS-DELIVER TPDU in step 7

Information element	Comment Value
TP-DCS	default alphabet, class 2 "11110010"B

SMS-DELIVER TPDU in step 21

TP-DCS	default alphabet, class 1 "11110001"B

SMS-DELIVER TPDU in step 35

TP-DCS	default alphabet "00000000"B

16.1.3.5 Test requirements

After UE sends a negative acknowledgement (RP-ERROR) in step 11, the USIM simulator shall indicate if the "memory capability exceeded" notification flag has been set on the USIM.

After UE sends a negative acknowledgement (RP-ERROR) in step 23, the USIM simulator shall indicate if the "memory capability exceeded" notification flag has been set on the USIM.

After step 53 the ME shall unset the "memory capability exceeded" notification flag on the USIM.

After step 56 UE shall not attempt to send a RP-SMMA RPDU.

16.1.4 Test of the status report capabilities and of SMS-COMMAND:

This test applies to UEs which support the status report capabilities.

16.1.4.1 Definition

16.1.4.2 Conformance requirement

The SMS offers the SC the capabilities of informing the UE of the status of a previously sent mobile originated short message. This is achieved by the SC returning a status report TPDU (SMS-STATUS-REPORT) to the originating UE.

SMS-COMMAND enables an UE to invoke an operation at the SC.

The UE shall increment TP-MR by 1 for each SMS-SUBMIT or SMS-COMMAND being submitted.

References

- 3GPP TS 23.040, sub-clause 3.2.9.
- 3GPP TS 23.040, sub-clause 9.2.3.6.

16.1.4.3 Test purpose

1) To verify that the UE is able to accept a SMS-STATUS-REPORT TPDU.
2) To verify that the UE is able to use the SMS-COMMAND functionality correctly and sends an SMS-COMMAND TPDU with the correct TP-Message-Reference.

16.1.4.4 Method of test

Initial conditions

- System Simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~the idle updated state~~ MM-state "Idle, updated".

Related ICS/IXIT Statements

Support of SMS MO/PP and MT/PP.

Test procedure

a) The UE is made to send a Mobile Originated short message setting TP-SRR as in steps a) to d) of test 16.1.2 (SMS Mobile originated).

b) The SS sends a CP-DATA message containing a RP-DATA RPDU itself containing an SMS-STATUS-REPORT TPDU.

c) The SS sends a RRC CONNECTION RELEASE message.

d) The UE is made to send an SMS-COMMAND message enquiring about the previously submitted short message.

e)

f) The SS acknowledges the CP-DATA message from the UE with a CP-ACK followed by a CP-DATA message containing an RP-ACK RPDU

g) After receiving the CP-ACK from the UE, the SS releases the RRC connection by using a RRC CONNECTION RELEASE message.

h) The UE is made to send an SMS-COMMAND message requiring to delete the previously submitted short message.

i) steps e) to g) are repeated.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<--	SYSTEM INFORMATION	BCCH
2		-->	RRC CONNECTION REQUEST	CCCH
3		<--	RRC CONNECTION SETUP	CCCH
4		-->	RRC CONNECTION SETUP COMPLETE	DCCH
5		-->	CM SERVICE REQUEST	
6		<--	AUTHENTICATION REQUEST	
7		-->	AUTHENTICATION RESPONSE	
8		<--	SECURITY MODE COMMAND	
9		-->	SECURITY MODE COMPLETE	
10		-->	CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU)
11		<--	CP-ACK	Sent within TC1M after step 10
12		<--	CP-DATA	Contains RP-ACK RPDU
13	SS			Waits max 25 seconds for CP-ACK
14		-->	CP-ACK	
15		<--	RRC CONNECTION RELEASE	RRC connection is released.
16		-->	RRC CONNECTION RELEASE COMPLETE	
17			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
18		-->	PAGING RESPONSE	
19		<--	AUTHENTICATION REQUEST	
20		-->	AUTHENTICATION RESPONSE	
21		<--	SECURITY MODE COMMAND	
22		-->	SECURITY MODE COMPLETE	
23		<--	CP-DATA	Contains RP-DATA RPDU (SMS-STATUS-REPORT TPDU)
24		-->	CP-ACK	
25		-->	CP-DATA	Contains RP-ACK RPDU
26		<--	CP-ACK	
27		<--	RRC CONNECTION RELEASE	RRC connection is released.
28		-->	RRC CONNECTION RELEASE COMPLETE	
29	UE			The UE is made to send an SMS-COMMAND message enquiring about the previously submitted SM
30		<--	SYSTEM INFORMATION	BCCH
31		-->	RRC CONNECTION REQUEST	CCCH
32		<--	RRC CONNECTION SETUP	CCCH
33		-->	RRC CONNECTION SETUP COMPLETE	DCCH
34		-->	CM SERVICE REQUEST	
35		<--	AUTHENTICATION REQUEST	
36		-->	AUTHENTICATION RESPONSE	
37		<--	SECURITY MODE COMMAND	
38		-->	SECURITY MODE COMPLETE	
39		-->	CP-DATA	Contains RP-DATA RPDU (SMS-COMMAND TPDU) which shall contain the correct TP-MR
40		<--	CP-ACK	
41		<--	CP-DATA	Contains RP-ACK RPDU
42		-->	CP-ACK	

Step	Direction		Message	Comments
	UE	SS		
43		<--	RRC CONNECTION RELEASE	RRC connection is released.
44		-->	RRC CONNECTION RELEASE COMPLETE	
45	UE		The UE is made to send an SMS-COMMAND	message requiring to delete the previously submitted SM.
46		-->	RRC CONNECTION REQUEST	CCCH
47		<--	RRC CONNECTION SETUP	CCCH
48		-->	RRC CONNECTION SETUP COMPLETE	DCCH
49		-->	CM SERVICE REQUEST	
50		<--	AUTHENTICATION REQUEST	
51		-->	AUTHENTICATION RESPONSE	
52		<--	SECURITY MODE COMMAND	
53		-->	SECURITY MODE COMPLETE	
		.		
54		-->	CP-DATA	Contains RP-DATA RPDU (SMS-COMMAND TPDU) which shall contain the correct TP-MR
55		<--	CP-ACK	
56		<--	CP-DATA	Contains RP-ACK RPDU
57		-->	CP-ACK	
58		<--	RRC CONNECTION RELEASE	RRC connection is released.
59		-->	RRC CONNECTION RELEASE COMPLETE	

Specific Message Contents

SMS SUBMIT TPDU

Information element	Comment Value
TP-SRR	status report is requested "1"B

SMS-STATUS-REPORT TPDU (SS to UE in step 23):

Information element	Comment Value
TP-MR	same as previous SMS-SUBMIT
TP-MMS	no more messages "1"B
TP-SRQ	result of SMS-SUBMIT "0"B
TP-RA	same as the Destination address of the SMS-SUBMIT
TP-ST	SM received "00000000"B

first SMS-COMMAND TPDU (UE to SS in step 39)

Information element	Comment Value
TP-MR	TP-MR in previous SMS-SUBMIT plus "1"
TP-SRR	status report requested "1"B
TP-CT	Enquiry relating to previously submitted short message "00000000"B
TP-MN	not checked (TP-MR in previous SMS-SUBMIT)

second SMS-COMMAND TPDU (UE to SS in step 54)

Information element	Comment Value
TP-MR	TP-MR in previous SMS-COMMAND plus "1"
TP-CT	Delete previously submitted short message "00000010"B
TP-MN	not checked (TP-MR in previous SMS-SUBMIT)

16.1.4.5 Test requirements

After step 23 UE accept a SMS-STATUS-REPORT TPDU.

After step 38 UE shall send a SMS-COMMAND TPDU with the correct TP-Message-Reference.

After step 53 UE shall send a SMS-COMMAND TPDU with the correct TP-Message-Reference.

16.1.5 Test of message class 0 to 3

The tests under this sub-clause only apply to a UE capable of displaying short messages (see ICS/IXIT).

16.1.5.1 Short message class 0

16.1.5.1.1 Definition

16.1.5.1.2 Conformance requirement

When a mobile terminated message is class 0 and the UE has the capability of displaying short messages, the UE shall display the message immediately and send an acknowledgement to the SC when the message has successfully reached the UE irrespective of whether there is memory available in the USIM or ME. The message shall not be automatically stored in the USIM or ME.

References

3GPP TS 23.038, clause 4.

16.1.5.1.3 Test purpose

To verify that the UE will accept and display but not store a class 0 message, and that it will accept and display a class 0 message if its message store is full.

NOTE: failure of this test in a UE could cause it to reject a class 0 message when its SMS memory becomes full. This could lead to unwanted repetitions between the UE and the service centre.

16.1.5.1.4 Method of test

Initial conditions

- System Simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~the idle updated state~~ MM-state "Idle, updated";
  - the UE message store shall be empty.

Related ICS/IXIT Statements

Support for Short message MT/PP.

Description of the basic procedures to display a mobile terminated short message.

The value of timer TC1M.

Whether SMS messages are stored in the USIM and/or the ME.

Test procedure

a) The SS sends a class 0 message by using the method described in step a) of sub-clause 16.1.1 but with the TPDU described in this sub-clause.

b) The UE message store shall be filled (for example by using the method of sub-clause 16.1.3 test of the memory available notification) with the same SMS-DELIVER TPDU except that TP-DCS is set to class 1.

c) The SS sends a class 0 message as in step a).

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
2	-->		PAGING RESPONSE	
3	<--		AUTHENTICATION REQUEST	
4	-->		AUTHENTICATION RESPONSE	
5	<--		SECURITY MODE COMMAND	
6	-->		SECURITY MODE COMPLETE	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU), Class 0 Short Message
8	-->		CP-ACK	
9	-->		CP-DATA	Contains RP-ACK RPDU.
10	<--		CP-ACK	
11	<--		RRC CONNECTION RELEASE	
12	-->		RRC CONNECTION RELEASE COMPLETE	
13	UE			The content of the short message shall be displayed by the ME. The UE shall not store the message. This can be checked by verifying that it is impossible to retrieve any short messages from the UE message store.
14		SS		The UE message store shall be filled (for example by using the method of 16.1.3) with Class 1 SMS-DELIVER TPDU.
15			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
16	-->		PAGING RESPONSE	
17	<--		AUTHENTICATION REQUEST	
18	-->		AUTHENTICATION RESPONSE	
19	<--		SECURITY MODE COMMAND	
20	-->		SECURITY MODE COMPLETE	
21	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU), Class 0 Short Message
22	-->		CP-ACK	
23	-->		CP-DATA	Contains RP-ACK RPDU.
24	<--		CP-ACK	
25	<--		RRC CONNECTION RELEASE	
26	-->		RRC CONNECTION RELEASE COMPLETE	
27	UE			The content of the short message shall be displayed by the ME.

Specific Message Contents

SMS-DELIVER TPDU (containing a class 0 message) (SS to UE)

Information element	Comment	Value
TP-DCS	default alphabet, class 0	"1111 0000"B

SMS-DELIVER TPDU (containing a class 1 message to fill the UE message store) (SS to UE)

Information element	Comment	Value
TP-DCS	default alphabet, class 1	"1111 0001"B

16.1.5.1.5 Test requirements

After step 7 UE shall accept and display but not store a class 0 message.

After step 21 UE shall accept and display a class 0 message.

16.1.5.2 Test of class 1 short messages

This test shall apply to UEs which support:

- storing of received Class 1 Short Messages; and
- displaying of stored Short Messages.

16.1.5.2.1 Definition

16.1.5.2.2 Conformance requirement

When a mobile terminated message is class 1, the UE shall send an acknowledgement to the SC when the message has successfully reached the UE and can be stored, either in the ME or in the USIM.

References

3GPP TS 23.038, clause 4.

16.1.5.2.3 Test purpose

This procedure verifies that the UE acts correctly on receiving a class 1 message, i.e. that it stores the message in the ME or USIM and sends an acknowledgement (at RP and CP-Layer).

16.1.5.2.4 Method of test

Initial conditions

- System Simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~the idle updated state~~ MM-state "Idle, updated";
  - the UE message store shall be empty;

- for storing of class 1 Short Messages, the UE shall be set up to store Short Messages in the ME memory (by way of MMI, as described in ICS/IXIT statement).

Related ICS/IXIT Statements

Support for Short message MT/PP.

Description of the basic procedures to display a mobile terminated short message.

The value of timer TC1M.

Whether SMS messages are stored in the USIM and/or the ME.

Test procedure

a) The SS delivers a Short Message of class 1 to the UE as specified in sub-clause 16.1.1, step a).

b) The Short Message is recalled (e.g. by means of the MMI).

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
2	-->		PAGING RESPONSE	
3	<--		AUTHENTICATION REQUEST	
4	-->		AUTHENTICATION RESPONSE	
5	<--		SECURITY MODE COMMAND	
6	-->		SECURITY MODE COMPLETE	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU), Class 1 Short Message
8	-->		CP-ACK	
9	-->		CP-DATA	Contains RP-ACK RPDU.
10	<--		CP-ACK	
11	<--		RRC CONNECTION RELEASE	
12	-->		RRC CONNECTION RELEASE COMPLETE	
13	UE			The short message shall be recalled and displayed at the UE.

Specific Message Contents

SMS-DELIVER TPDU (containing a class 1 message) (SS to UE)

Information element	Comment	Value
TP-DCS	default alphabet, class 1	"1111 0001"B

16.1.5.2.5 Test requirements

After step 7 UE shall store the message in the ME or USIM and send an acknowledgement.

16.1.5.3 Test of class 2 short messages

16.1.5.3.1 Definition

Class 2 Short Messages are defined as USIM specific, and the UE shall ensure that a message of this class is stored on the USIM.

16.1.5.3.2 Conformance requirement

When a mobile terminated message is Class 2, the UE shall ensure that the message has been correctly transferred to the SMS data field in the USIM before sending an acknowledgement to the SC. The UE shall return a "protocol error, unspecified" error message if the short message cannot be stored in the USIM and there is other short message storage available at the UE. If all the short message storage at the UE is already in use, the UE shall return "memory capacity exceeded".

Reference(s)

3GPP TS 23.040, sub-clause 9.2.3.10; 3GPP TS 23.038, clause 4. 3GPP TS 34.108,sub-clause6.11.3.2.27

16.1.5.3.3 Test purpose

This procedure verifies that the UE acts correctly on receiving a class 2 message, i.e. that it stores the message correctly in the USIM, and if this is not possible, returns a protocol error message, with the correct error cause, to the network.

There are 2 cases:

1) if the UE supports storing of short messages in the USIM and in the ME, and storage in the ME is not full, and the short message cannot be stored in the USIM, the error cause shall be "protocol error, unspecified";

2) if the UE supports storing of short messages in the USIM and not in the ME, and storage in the ME is not full, and the short message cannot be stored in the USIM, the error cause shall be "memory capacity exceeded".

NOTE: If the UE supports storing of short messages in the USIM and the ME, and storage in the ME is full, and the short message cannot be stored in the USIM, the error cause shall be "memory capacity exceeded". This case is not tested in this test.

16.1.5.3.4 Method of test

Initial conditions

- System Simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~the idle updated state~~ MM-state "Idle, updated";
  - the ME message store shall be empty;
  - the ME shall be connected to the USIM simulator. The following shall be present in the USIM simulator:
    - EF_{SMS} with at least two free records and one full record;
    - $EF_{SMSstatus}$, with SMS "Memory Cap. Exceed" notification flag set to "memory available";
    - Service no. 4 (SMS) in EF_{SST} set to allocated and activated;
    - for storing of Class 1 Short Messages the UE shall be set up to store Short Messages in the ME memory (by way of MMI, as described in ICS/IXIT statement).

Related ICS/IXIT Statements

Support for Short message MT/PP.

The value of timer TC1M.

Whether SMS messages are stored in the USIM and/or the ME.

Test procedure

a) The SS delivers a Short Message of class 2 to the UE as specified in sub-clause 16.1.1, step b).

b) Following an attempt by the ME to store the short message in a free record of EF_{SMS} in the USIM, the USIM simulator returns the status response "OK" ("90 00").

c) Step a) is repeated.

d) Following an attempt by the ME to store the short message in a free record of EF_{SMS} in the USIM, the USIM simulator returns the status response "memory problem" ("92 40").

e) The USIM simulator indicates if an attempt was made in steps a) and c) to store the messages and if the messages are stored according to the requirement.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<		Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
2	-->		PAGING RESPONSE	
3	<--		AUTHENTICATION REQUEST	
4	-->		AUTHENTICATION RESPONSE	
5	<--		SECURITY MODE COMMAND	
6	-->		SECURITY MODE COMPLETE	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU), Class 2 Short Message
8	-->		CP-ACK	
9	ME			The ME shall correctly store the short message in a free record of EFSMS in the USIM, i.e. -the ME shall use a free record - the first byte of the record shall indicate "message received by UE from network" - the TS-Service-Centre-Address shall be correctly stored - the TPDU shall be identical to that sent by the SS - bytes following the TPDU shall be set to "FF"
10	USIM			The USIM simulator returns the status response "OK" ("90 00"). The USIM simulator shall indicate if an attempt was made by the ME to store the short message in the USIM.
11	-->		CP-DATA	Contains RP-ACK RPDU.
12	<--		CP-ACK	
13	<--		RRC CONNECTION RELEASE	
14	-->		RRC CONNECTION RELEASE COMPLETE	
15			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
16	-->		PAGING RESPONSE	
17	<--		AUTHENTICATION REQUEST	
18	-->		AUTHENTICATION RESPONSE	
19	<--		SECURITY MODE COMMAND	
20	-->		SECURITY MODE COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
21	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU), Class 2 Short Message
22	-->		CP-ACK	
23	ME			The ME shall attempt to store the short message in a free record of EFSMS in the USIM.
24	USIM			The USIM simulator returns the status response "memory problem" ("92 40"). The USIM simulator shall indicate if an attempt was made by the ME to store the short message in the USIM.
25	-->		CP-DATA	Contains RP-ERROR RPDU with error cause "protocol error, unspecified" if the UE supports storing of short messages in the ME, or error cause "memory capacity exceeded" if not.
26	<--		CP-ACK	
27	<--		RRC CONNECTION RELEASE	
28	-->		RRC CONNECTION RELEASE COMPLETE	

Specific Message Contents

SMS-DELIVER TPDU (containing a class 2 message) (SS to UE)

Information element	Comment	Value
TP-DCS	default alphabet, class 2	"1111 0010"B

16.1.5.3.5 Test requirements

After step 10 UE shall confirm that the short message is stored in the USIM and send CP-DATA containing RP-ACK RPDU.

After step 24 UE shall confirm that the short message cannot be stored in the USIM and send CP-DATA containing RP-ERROR RPDU. If UE supports storing of short message in the ME, the error cause of RP-ERROR RPDU shall be “protocol error, unspecified”, and if not the error cause of RP-ERROR RPDU shall be “memory capacity exceeded”

16.1.5.4 Test of class 3 short messages

For further study.

16.1.6 Test of short message type 0

For further study.

16.1.7 Test of the replace mechanism for SM type 1-7

16.1.7.1 Definition

16.1.7.2 Conformance requirement

On receipt of a short message, the UE shall check to see if the associated Protocol Identifier contains a Replace Short Message Type code. If such a code is present, then the UE will check the associated SC address (RP-OA) and originating address (TP-OA) and replace any existing stored message having the same Protocol Identifier code, SC address and originating address with the new short message.

Reference(s)

3GPP TS 23.040; sub-clause 9.2.3.9.

16.1.7.3 Test purpose

This procedure verifies the correct implementation of the replace mechanism for Replace Short Messages.

16.1.7.4 Method of test

Initial conditions

- System Simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~the idle updated state~~ MM-state "Idle, updated";
  - the UE message store shall be empty.

Related ICS/IXIT Statements

Support for Short message MT/PP.

Description of the basic procedures to display a mobile terminated short message.

The value of timer TC1M.

Test procedure

a) Two different numbers n and m are drawn randomly between 1 and 7. Two different addresses for TP-Originating-Address (TPOA1 and TPOA2) are drawn. Two different addresses for RP-Originating-Address (RPOA1 and RPOA2) are drawn.

b) The SS delivers a short message to the UE as specified in sub-clause 16.1.1 step a). In the SMS-DELIVER TPDU, the TP-Protocol-Identifier parameter is "Replace Short Message Type n", the TP-Originating-Address is TPOA1, and the RP-Originating-Address is RPOA1.

c) Step b) is repeated but with a different TP-Originating-Address (TPOA2), and different contents of TP-User-Data in the SMS-DELIVER TPDU. The other parameters are the same as in step b).

d) Step c) is repeated but with RPOA2 in the RP-Originated-Address, and contents of TP-User-Data different from the former two messages. The other parameters are the same as in step c).

e) Step d) is repeated but with the TP-Protocol-Identifier equal to "Replace Short Message Type m", and contents of TP-User-Data different from the former three messages. The other parameters are the same as in step d).

f) Step e) is repeated but the contents of TP-User-Data are different from that used in step e).

g) The SS prompts the operator to display the Short Messages stored in the UE.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
2	-->		PAGING RESPONSE	
3	<--		AUTHENTICATION REQUEST	

Step	Direction		Message	Comments
	UE	SS		
4	-->		AUTHENTICATION RESPONSE	
5	<--		SECURITY MODE COMMAND	
6	-->		SECURITY MODE COMPLETE	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) TP-PID is "Replace Short Message Type n", TP-OA is TPOA1 and RP-OA is RPOA1
8	-->		CP-ACK	
9	-->		CP-DATA	Contains RP-ACK RPDU.
10	<--		CP-ACK	
11	<--		RRC CONNECTION RELEASE	
12	-->		RRC CONNECTION RELEASE COMPLETE	
13			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
14	-->		PAGING RESPONSE	
15	<--		AUTHENTICATION REQUEST	
16	-->		AUTHENTICATION RESPONSE	
17	<--		SECURITY MODE COMMAND	
18	-->		SECURITY MODE COMPLETE	
19	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) TP-PID is "Replace Short Message Type n", TP-OA is TPOA2 and RP-OA is RPOA1, TP-UD different from step 7
20	-->		CP-ACK	
21	-->		CP-DATA	Contains RP-ACK RPDU.
22	<--		CP-ACK	
23	<--		RRC CONNECTION RELEASE	
24	-->		RRC CONNECTION RELEASE COMPLETE	
25			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
26	-->		PAGING RESPONSE	
27	<--		AUTHENTICATION REQUEST	
28	-->		AUTHENTICATION RESPONSE	
29	<--		SECURITY MODE COMMAND	
30	-->		SECURITY MODE COMPLETE	
31	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) TP-PID is "Replace Short Message Type n", TP-OA is TPOA2 and RP-OA is RPOA2, TP-UD different from step 7 and 19
32	-->		CP-ACK	
33	-->		CP-DATA	Contains RP-ACK RPDU.
34	<--		CP-ACK	
35	<--		RRC CONNECTION RELEASE	
36	-->		RRC CONNECTION RELEASE COMPLETE	
37			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
38	-->		PAGING RESPONSE	
39	<--		AUTHENTICATION REQUEST	
40	-->		AUTHENTICATION RESPONSE	
41	<--		SECURITY MODE COMMAND	
42	-->		SECURITY MODE COMPLETE	
43	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) TP-PID is "Replace Short Message Type m", TP-OA is TPOA2 and RP-OA is RPOA2, TP-UD different from step 7, 19 and 31
44	-->		CP-ACK	
45	-->		CP-DATA	Contains RP-ACK RPDU.
46	<--		CP-ACK	
47	<--		RRC CONNECTION RELEASE	
48	-->		RRC CONNECTION RELEASE COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
49			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
50	-->		PAGING RESPONSE	
51	<--		AUTHENTICATION REQUEST	
52	-->		AUTHENTICATION RESPONSE	
53	<--		SECURITY MODE COMMAND	
54	-->		SECURITY MODE COMPLETE	
55	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) TP-PID is "Replace Short Message Type m", TP-OA is TPOA2 and RP-OA is RPOA2, TP-UD different from step 43
56	-->		CP-ACK	
57	-->		CP-DATA	Contains RP-ACK RPDU.
58	<--		CP-ACK	
59	<--		RRC CONNECTION RELEASE	
60	-->		RRC CONNECTION RELEASE COMPLETE	
61	SS			Prompts the operator to display the Short Messages stored in the UE. Only the Short Messages delivered in step 7, 19, 31 and 55 shall be retrievable and displayed

Specific Message Contents

SMS-DELIVER TPDU

Information element	Comment Value
TP-MMS	no more messages are waiting in SC "1"B
TP-PID	binary 01000xxx, xxx represents n resp. m (see test method description)

16.1.7.5 Test requirements

After step 60 only the Short Messages delivered in step 7, 19, 31 and 55 shall be retrieved and displayed.

16.1.8 Test of the reply path scheme

16.1.8.1 Definition

16.1.8.2 Conformance requirement

When a replying UE receives an original mobile terminated short message it has:

- originating SME = TP-Originating Address in the SMS-DELIVER TPDU;
- original SC = RP-Originating Address in the RP-MT-DATA.

When submitting the reply mobile originated short message, the replying UE should use parameters as follows:

- TP-Destination Address in SMS-SUBMIT TPDU = originating SME;
- RP-Destination Address in RP-MO-DATA = original SC.

Reference(s)

3GPP TS 23.040 Annex D.5,D.6

16.1.8.3 Test purpose

This procedure verifies that the UE is able to send a Reply Short Message back to the correct originating SME even if in the meantime it receives another Short Message.

16.1.8.4 Method of test

Initial conditions

- System Simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~the idle updated state~~ MM-state "Idle, updated";
  - the UE message store shall be empty.

Related ICS/IXIT Statements

Support for Short message MT/PP.

Support for Short message MO/PP.

Description of the basic procedures to display a mobile terminated short message.

Description of the basic procedures to send a mobile originated short message.

The value of timer TC1M.

Test procedure

a) The SS delivers a Short Message as specified in sub-clause 16.1.1, step b) with TP-Reply-Path set to 1.

b) Step a) is repeated but with:
   - different TP-Originating-Address for the originating SME;
   - different RP-Originating-Address for the original SC; and
   - different message contents TP-User-Data.

c) One of the two Short Messages is displayed (e.g. by means of the MMI) and the Reply Short Message is submitted (e.g. by means of the MMI).

d) step c) is repeated for the other Short Message.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
2	-->		PAGING RESPONSE	
3	<--		AUTHENTICATION REQUEST	
4	-->		AUTHENTICATION RESPONSE	
5	<--		SECURITY MODE COMMAND	
6	-->		SECURITY MODE COMPLETE	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) TP-RP set to 1
8	-->		CP-ACK	Sent within TC1M after step 7

Step	Direction		Message	Comments
	UE	SS		
9	-->		CP-DATA	Contains RP-ACK RPDU.
10	<--		CP-ACK	
11	<--		RRC CONNECTION RELEASE	
12	-->		RRC CONNECTION RELEASE COMPLETE	
13			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
14	-->		PAGING RESPONSE	
15	<--		AUTHENTICATION REQUEST	
16	-->		AUTHENTICATION RESPONSE	
17	<--		SECURITY MODE COMMAND	
18	-->		SECURITY MODE COMPLETE	
19	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) TP-OA, RP-OA and TP-UD different from step 7
20	-->		CP-ACK	Sent within TC1M after step 7
21	-->		CP-DATA	Contains RP-ACK RPDU.
22	<--		CP-ACK	
23	<--		RRC CONNECTION RELEASE	
24	-->		RRC CONNECTION RELEASE COMPLETE	
25	UE			One of the two Short Messages is displayed and the Reply Short Message is submitted.
26	<--		SYSTEM INFORMATION	BCCH
27	-->		RRC CONNECTION REQUEST	CCCH
28	<--		RRC CONNECTION SETUP	CCCH
29	-->		RRC CONNECTION SETUP COMPLETE	DCCH
30	-->		CM SERVICE REQUEST	
31	<--		AUTHENTICATION REQUEST	
32	-->		AUTHENTICATION RESPONSE	
33	<--		SECURITY MODE COMMAND	
34	-->		SECURITY MODE COMPLETE	
35	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU) RP-DA = RP-OA corresponding to the message displayed TP-DA = TP-OA corresponding to the message displayed
36	<--		CP-ACK	Sent within TC1M after step 35
37	<--		CP-DATA	Contains RP-ACK RPDU
38	SS			Waits max 25 seconds for CP-ACK
39	-->		CP-ACK	
40	<--		RRC CONNECTION RELEASE	RRC connection is released.
	-->		RRC CONNECTION RELEASE COMPLETE	
41	UE			The other Short Message is displayed and the Reply Short Message is submitted.
42	<--		SYSTEM INFORMATION	BCCH
43	-->		RRC CONNECTION REQUEST	CCCH
44	<--		RRC CONNECTION SETUP	CCCH
45	-->		RRC CONNECTION SETUP COMPLETE	DCCH
46	-->		CM SERVICE REQUEST	
47	<--		AUTHENTICATION REQUEST	
48	-->		AUTHENTICATION RESPONSE	
49	<--		SECURITY MODE COMMAND	
50	-->		SECURITY MODE COMPLETE	
51	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU) RP-DA = RP-OA corresponding to the Message displayed TP-DA = TP-OA corresponding to the message displayed
52	<--		CP-ACK	Sent within TC1M after step 51
53	<--		CP-DATA	Contains RP-ACK RPDU
54	SS			Waits max 25 seconds for CP-ACK
55	-->		CP-ACK	
56	<--		RRC CONNECTION RELEASE	RRC connection is released.

Step	Direction		Message	Comments
	UE	SS		
57	-->		RRC CONNECTION RELEASE COMPLETE	

Specific Message Contents

SMS-DELIVER TPDU

Information element	CommentValue
TP-MMS	no more messages are waiting in SC "1"B
TP-RP	Reply Path exists "1"B

16.1.8.5 Test requirements

After step 34 UE shall send the Reply Short Message corresponding to one of two previously received short messages.

After step 50 UE shall send the Reply Short Message corresponding to the other of two previously received short messages.

16.1.9 Multiple SMS mobile originated

16.1.9.1 UE in idle mode

This test applies to UE supporting the ability of sending multiple short messages on the same RRC connection when there is no call in progress.

16.1.9.1.1 Definition

16.1.9.1.2 Conformance requirements

When the UE chooses to use the same RRC connection to send another short message or a memory available notification, then:

- the UE shall transmit a CM SERVICE REQUEST for the new CM connection before the final CP-ACK (e.g. the one that acknowledges the CP-DATA that carried the RP-ACK) for the old MM connection is transmitted;
- before transmission of the first CP-DATA on the new MM connection, the UE shall transmit the CP-ACK for the old MM connection;
- the Transaction Identifier used on the new MM connection shall be different to that used on the old MM connection; and
- the UE shall not initiate establishment of the new MM connection before the final CP-DATA (e.g. the one carrying the RP-ACK) has been received.

Reference

- 3GPP TS 23.040; sub-clause 3.1.
- 3GPP TS 24.011; sub-clause 5.4.

16.1.9.1.3 Test purpose

To verify that the UE is able to correctly send multiple short messages on the same RRC connection when using a DCCH.

16.1.9.1.4 Method of test

Initial conditions

- System simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~"Idle, updated" state~~ MM-state "Idle, updated";
  - the SMS message storage shall be empty.

Related ICS/IXIT statements

Support for multiple short message MO/PP on the same RRC connection.

Description of how to enter multiple SMS.

Description of the basic procedures to display a mobile originated short message.

Whether SMS messages are stored in the USIM and/or the ME.

Foreseen final state of UE

Idle, updated.

Test procedure

a) The UE shall be set up to send 3 short messages as multiple SM to the SS. The SS answers correctly to RRC CONNECTION REQUEST on CCCH and then performs the authentication.

b) After receiving SECURITY MODE COMMAND UE shall send SECURITY COMMAND COMPLETE.

c) The SS responds to the CP-DATA containing RP-DATA RPDU (SMS SUBMIT TPDU) from the UE with a CP-ACK message followed by a CP-DATA message containing the correct RP-ACK RPDU. The Transaction Identifier used on this MM connection is 'x'.

d) The UE shall transmit a CM SERVICE REQUEST for the new CM connection (for the second short message) before the final CP-ACK (the one that acknowledges the CP-DATA that carried the RP-ACK before) for the old MM connection is transmitted. The UE shall not initiate establishment of the new MM connection before the final CP-DATA (i.e. the one carrying the RP-ACK for the first short message) has been received. Before transmission of the first CP-DATA on the new MM connection, the UE shall transmit the CP-ACK for the old MM connection. The Transaction Identifier used on the new MM connection shall be y, where y <> x (see procedure c)).

e) The SS waits a maximum of 5 seconds after receiving the CM SERVICE REQUEST for the CP-ACK message from the UE.

f) The SS responds to the CP-DATA containing RP-DATA RPDU (SMS SUBMIT TPDU) from the UE with a CP-ACK message followed by a CP-DATA message containing the correct RP-ACK RPDU.

g) The UE shall transmit a CM SERVICE REQUEST for the new CM connection (for the third short message) before the final CP-ACK (the one that acknowledges the CP-DATA that carried the RP-ACK before) for the old MM connection is transmitted. Before transmission of the first CP-DATA on the new MM connection, the UE shall transmit the CP-ACK for the old MM connection. The Transaction Identifier used on the new MM connection shall be z, where z <> y (see procedure d)). The UE shall not initiate establishment of the new MM connection before the final CP-DATA (i.e. the one carrying the RP-ACK for the second short message) has been received.

h) The SS waits a maximum of 5 seconds after receiving the CM SERVICE REQUEST for the CP-ACK message from the UE.

i) The SS responds to the CP-DATA containing RP-DATA RPDU (SMS SUBMIT TPDU) from the UE with a CP-ACK message followed by a CP-DATA message containing the correct RP-ACK RPDU.

j) The SS waits a maximum of 5 seconds after sending CP-DATA for the CP-ACK message from the UE.

k) The SS sends a RRC CONNECTION RELEASE to the UE.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<--	SYSTEM INFORMATION	BCCH
2		-->	RRC CONNECTION REQUEST	CCCH
3		<--	RRC CONNECTION SETUP	CCCH
4		-->	RRC CONNECTION SETUP COMPLETE	DCCH
5		-->	CM SERVICE REQUEST	
6		<--	AUTHENTICATION REQUEST	
7		-->	AUTHENTICATION RESPONSE	
8		<--	SECURITY MODE COMMAND	
9		-->	SECURITY MODE COMPLETE	
10		-->	CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU). The Transaction Identifier used in steps 10, 11, 12 and 14 shall be x.
11		<--	CP-ACK	
12		<--	CP-DATA	Contains RP-ACK RPDU
13		-->	CM SERVICE REQUEST	CM service type set to "Short message transfer".
14		-->	CP-ACK	Shall be sent within 5 seconds of step 13
15		<--	CM SERVICE ACCEPT	
16		-->	CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU). The Transaction Identifier used in steps 16, 17, 18 and 20 shall be y where y <> x (see step 10).
17		<--	CP-ACK	
18		<--	CP-DATA	Contains RP-ACK RPDU
19		-->	CM SERVICE REQUEST	CM service type set to "Short message transfer".
20		-->	CP-ACK	Shall be sent within 5 seconds of step 19
21		<--	CM SERVICE ACCEPT	
22		-->	CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU). The Transaction Identifier used in steps 22, 23, 24 and 25 shall be z, where z <> y (see step 16).
23		<--	CP-ACK	
24		<--	CP-DATA	Contains RP-ACK RPDU
25		-->	CP-ACK	Shall be sent within 5 seconds of step 24
26		<--	RRC CONNECTION RELEASE	RRC connection is released.
27		-->	RRC CONNECTION RELEASE COMPLETE	

16.1.9.1.5 Test requirements

In step 12 the UE shall transmit a CM SERVICE REQUEST for the new CM connection (for the second short message) before the final CP-ACK for the old MM connection is transmitted.

In step 13 the UE shall transmit a CM SERVICE REQUEST for the new CM connection (for the third short message) before the final CP-ACK for the old MM connection is transmitted.

16.1.9.2 UE in active mode

This test applies to UE supporting the ability of sending concatenated multiple short messages when there is a call in progress.

16.1.9.2.1 Definition

16.1.9.2.2 Conformance requirements

When the UE chooses to use the same RRC connection to send another short message or a memory available notification, then:

- the UE shall transmit a CM SERVICE REQUEST for the new CM connection before the final CP-ACK (e.g. the one that acknowledges the CP-DATA that carried the RP-ACK) for the old MM connection is transmitted;
- before transmission of the first CP-DATA on the new MM connection, the UE shall transmit the CP-ACK for the old MM connection;
- the Transaction Identifier used on the new MM connection shall be different to that used on the old MM connection; and
- the UE shall not initiate establishment of the new MM connection before the final CP-DATA (e.g. the one carrying the RP-ACK) has been received.

Reference

- 3GPP TS 23.040; sub-clause 3.1.
- 3GPP TS 24.011; sub-clause 5.4.

16.1.9.2.3 Test purpose

To verify that the UE is able to correctly concatenate multiple short messages on the same RRC connection when sent parallel to a call.

16.1.9.2.4 Method of test

Initial conditions

- System simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~"Idle, updated" state~~ MM-state "Idle, updated";
  - the SMS message storage shall be empty.

Related ICS/IXIT statements

Support for multiple short message MO/PP on the same RRC connection.

Description of how to enter multiple SMS.

Description of the basic procedures to display a mobile originated short message.

Support for state U10 of call control.

Whether SMS messages are stored in the USIM and/or the ME.

Foreseen final state of UE

Idle, updated.

Test procedure

a) ~~a)~~ A data or speech call is established on a DTCH with the SS and the state U10 of call control is entered. The UE is set up to send 3 short messages as multiple SM to the SS. After the reception of the CM SERVICE REQUEST, the SS sends a CM SERVICE ACCEPT message.

b) ~~b)~~ Steps c) to k) of the test procedure in sub-clause 16.1.9.1.4 are repeated.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		A data or speech call is established on a DTCH and the state U10 of call control is entered.
2	UE			The UE is set up to send 3 short messages as multiple SM
3	-->		CM SERVICE REQUEST	Sent in a layer 2 frame on the DCCH. CM service type set to "short message transfer"
4	<--		CM SERVICE ACCEPT	
7	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU). The Transaction Identifier used in steps 7, 8, 9 and 11 shall be x.
8	<--		CP-ACK	
9	<--		CP-DATA	Contains RP-ACK RPDU
10	-->		CM SERVICE REQUEST	Sent in a layer 2 frame on the DCCH. CM service type set to "short message transfer"
11	-->		CP-ACK	Shall be sent within 5 seconds of step 10
12	<--		CM SERVICE ACCEPT	
13	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU). The Transaction Identifier used in steps 13, 14, 15 and 17 shall be y where y <> x (see step 7).
14	<--		CP-ACK	
15	<--		CP-DATA	Contains RP-ACK RPDU
16	-->		CM SERVICE REQUEST	Sent in a layer 2 frame on the DCCH. CM service type set to "short message transfer"
17	-->		CP-ACK	Shall be sent within 5 seconds of step 16
18	<--		CM SERVICE ACCEPT	
19	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU). The Transaction Identifier used in steps 19, 20, 21 and 22 shall be z, where z <> y (see step 13).
20	<--		CP-ACK	
21	<--		CP-DATA	Contains RP-ACK RPDU
22	-->		CP-ACK	Shall be sent within 5 seconds of step 21
23	<--		RRC CONNECTION RELEASE	RRC connection is released.
24	-->		RRC CONNECTION RELEASE COMPLETE	

16.1.9.2.5 Test requirements

In step 9 the UE shall transmit a CM SERVICE REQUEST for the new CM connection (for the second short message) before the final CP-ACK for the old MM connection is transmitted.

In step 15 the UE shall transmit a CM SERVICE REQUEST for the new CM connection (for the third short message) before the final CP-ACK for the old MM connection is transmitted.

16.2 Short message service point to point on PS mode

All of test cases in this sub-clause are applied to the UE supported PS mode.

16.2.1 SMS mobile terminated

16.2.1.1 Definition

16.2.1.2 Conformance requirements

An active UE shall be able to receive short message TPDU (SMS-DELIVER) at any time, independently of whether or not there is a PDP context in progress. A report will always be returned to the SC, confirming that the UE has received the short message.

Reference

3GPP TS 23.040, sub-clause 3.1.

16.2.1.3 Test purpose

To verify the ability of a UE to receive and decode the SMS where provided for the point to point service.

16.2.1.4 Method of test

Initial Conditions

- System simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~"Idle, updated" state~~ GMM-state "GMM-REGISTERED";
  - the SMS message storage shall be empty.

Related ICS/IXIT Statements

Support for Short message MT/PP.

Description of the basic procedures to display a mobile terminated short message.

The value of timer TC1M.

Whether SMS messages are stored in the USIM and/or the ME.

Support for session management state"PDP-ACTIVE".

Test procedure

a) Mobile terminates establishment of Radio Resource Connection. After the completion of RRC Connection the SS authenticates the UE and activates ciphering.

   After the SS receives SECURITY MODE COMPLETE, the SS sends a CP-DATA message. The information element of the CP-DATA message will be RP-DATA RPDU (SMS DELIVER TPDU).

b) The SS waits a maximum of 25 seconds for the CP-ACK message and then a maximum of 60 seconds for the CP-DATA message containing the RP-ACK RPDU.

c) The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates channel release.

d) Steps a), b) and c) are repeated but the first CP-DATA message from the UE is not acknowledged. The second CP-DATA message from the UE is acknowledged by a CP-ACK within a time TC1M.

e) Steps a) and b) are repeated. The SS is configured not to send CP-ACK. Then maximum 3 CP-DATA retransmissions may occur. After a duration of TC1M + 5 seconds after the last CP-DATA retransmission the SS then initiates the channel release. The 5 seconds is the appropriate time to wait to verify that the UE does not send more than the maximum allowed (3) CP-DATA retransmissions.

f) The SMS message store shall be cleared manually by the operator.

g) A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered. The SS sends a PAGING TYPE 2.

The SS sends a CP-DATA message. The information element of the CP-DATA message will be RP-DATA RPDU (SMS DELIVER TPDU). The SS waits a maximum of 25 seconds for the CP-ACK message and then a maximum of 60 seconds for the CP-DATA message containing the RP-ACK RPDU.

h) The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates channel release. The SMS message store shall be cleared manually by the operator.

i) Steps g) and h) are repeated but the first CP-DATA message from the UE is not acknowledged. The second CP-DATA message from the UE is acknowledged by a CP-ACK within a time TC1M.

j) Step g) is repeated. The SS is configured not to send CP-ACK. Then maximum 3 CP-DATA retransmissions may occur. After a duration of TC1M + 15 seconds after the last CP-DATA retransmission the SS initiates the channel release. The 15 seconds is the appropriate time to wait to verify that the UE does not send more than the maximum allowed (3) CP-DATA retransmissions (during PDP context in progress).

k) A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered. The PDP context is cleared by the SS with a disconnect message. (The PDP context deactivating is continued in parallel to the following exchange of messages related to SMS).

The SS sends a CP-DATA RPDU (SMS DELIVER TPDU) message. The information element of the CP-DATA message is RP-DATA.

The SS waits a maximum of 25 seconds for the CP-ACK message and then a maximum of 60 seconds for the CP-DATA message containing the RP-ACK RPDU.

The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates channel release.

The SMS message store shall be cleared manually by the operator.

l) A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered. After the SS sends a PAGING TYPE 2,the PDP context shall be cleared from the UE. (The PDP context deactivating is continued in parallel to the following exchange of messages related to SMS).

The SS sends a CP-DATA message. The information element of the CP-DATA message is RP-DATA RPDU (SMS DELIVER TPDU).

The SS waits a maximum of 25 seconds for the CP-ACK message and then a maximum of 60 seconds for the CP-DATA message containing the RP-ACK RPDU.

The SS sends a CP-ACK to the UE within TC1M with no further CP-DATA messages and the SS initiates channel release.

The SMS message store shall be cleared manually by the operator.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
2	-->		SERVICE REQUEST	
3	<--		AUTHENTICATION AND CIPHERING REQUEST	

Step	Direction		Message	Comments
	UE	SS		
4	-->		AUTHENTICATION AND CIPHERING RESPONSE	
5	<--		SECURITY MODE COMMAND	
6	-->		SECURITY MODE COMPLETE	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
8	SS			Waits max 25 seconds for CP-ACK
9	-->		CP-ACK	
10	SS			Waits max 60 seconds for RP-ACK RPDU
11	-->		CP-DATA	Contains RP-ACK RPDU
12	<--		CP-ACK	
13	UE			There should be no further CP-DATA messages until the UE aborts the RR connection (disconnection of layer 2).
14	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
15			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
16	-->		SERVICE REQUEST	
17	<--		AUTHENTICATION AND CIPHERING REQUEST	
18	-->		AUTHENTICATION AND CIPHERING RESPONSE	
19	<--		SECURITY MODE COMMAND	
20	-->		SECURITY MODE COMPLETE	
21	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
22	SS			Waits max 25 seconds for CP-ACK
23	-->		CP-ACK	
24	SS			Waits max 60 seconds for RP-ACK RPDU
25	-->		CP-DATA	First CP-DATA from UE, contains RP-ACK RPDU
26	SS			First CP-DATA message not acknowledged by SS
27	-->		CP-DATA	Retransmitted CP-DATA from UE within twice TC1M, after step 25, contains RP-ACK RPDU
28	<--		CP-ACK	Second CP_DATA message is acknowledged
29	UE			There should be no further CP-DATA messages until the UE aborts the RRC connection
30	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
31			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
32	-->		SERVICE REQUEST	
33	<--		AUTHENTICATION AND CIPHERING REQUEST	
34	-->		AUTHENTICATION AND CIPHERING RESPONSE	
35	<--		SECURITY MODE COMMAND	
36	-->		SECURITY MODE COMPLETE	
37	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
38	SS			Waits max 25 seconds for CP-ACK
39	-->		CP-ACK	
40	SS			Waits max 60 seconds for RP-ACK RPDU
41	-->		CP-DATA	Contains RP-ACK RPDU
42	SS			First CP-DATA message not acknowledged by SS
43			CP-DATA	Retransmitted CP-DATA from UE within twice TC1M after step 41, contains RP-ACK RPDU
44	SS			Retransmitted CP-DATA message not acknowledged by SS
45	UE			Depending upon the maximum number of CP-DATA retransmissions implemented, step 43 and 44 may be repeated.
46	<--		RRC CONNECTION RELEASE	RRC connecton is released after a duration of TC1M + 5 seconds after the last CP-DATA retransmission..
47	-->		RRC CONNECTION RELEASE COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
48	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
49	SS			A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered.
50			PAGING TYPE 2	
51	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
52	SS			Waits max 25 seconds for CP-ACK
53	-->		CP-ACK	
54	SS			Waits max 60 seconds for RP-ACK RPDU
55	-->		CP-DATA	Contains RP-ACK RPDU
56	<--		CP-ACK	
57	<--		DEACTIVATE PDP CONTEXT REQUEST	Deactivates an existing PDP context.
58	-->		DEACTIVATE PDP CONTEXT ACCEPT	
59	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
60	UE			Clear the SMS message store
61	SS			A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered.
62	<--		PAGING TYPE 2	
63	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
64	SS			Waits max 25 seconds for CP-ACK
65	-->		CP-ACK	
66	SS			Waits max 60 seconds for RP-ACK RPDU
67	-->		CP-DATA	First CP-DATA from UE, contains RP-ACK RPDU
68	SS			First CP-DATA message not acknowledged by SS
69	-->		CP-DATA	Retransmitted CP-DATA message within twice TC1M after step 67, contains RP-ACK RPDU
70	<--		CP-ACK	Second CP-DATA message is acknowledged
71	<--		DEACTIVATE PDP CONTEXT REQUEST	Deactivates an existing PDP context.
72	-->		DEACTIVATE PDP CONTEXT ACCEPT	
73	UE			There should be no further CP-DATA messages until the UE aborts the RRC connection
74	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
75	UE			Clear the SMS message store
76	SS			A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered.
77	<--		PAGING TYPE 2	
78	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
79	SS			Waits max 25 seconds for CP-ACK
80	-->		CP-ACK	
81	SS			Waits max 60 seconds for RP-ACK RPDU
82	-->		CP-DATA	First CP-DATA from UE, contains RP-ACK RPDU
83	SS			First CP-DATA message not acknowledged by SS
84	-->		CP-DATA	Transmitted CP-DATA message within twice TC1M after step 82, contains RP-ACK RPDU
85	SS			Retransmitted CP-DATA message not acknowledged by SS
86	UE			Depending on the maximum number of CP-DATA retransmissions implemented, step 83-84 may be repeated. The maximum number of retransmissions may however not exceed three.
87	<--		RRC CONNECTION RELEASE	RRC CONNECTION is released after a duration of TC1M + 15 seconds after the last CP-DATA retransmission.
88	-->		RRC CONNECTION RELEASE COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
89	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
90	UE			Clear the SMS message store
91	SS			A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered.
92	<--		PAGING TYPE 2	Sent on DCCH associated with the DTCH
93	<--		DEACTIVATE PDP CONTEXT REQUEST	The PDP context is deactivated by the SS. The PDP context deactivating is continued in parallel to the following exchange of messages related to SMS.
94	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
95	SS			Waits max 25 seconds for CP-ACK
96	-->		CP-ACK	
97	SS			Waits max 60 seconds for RP-ACK RPDU
98	-->		CP-DATA	Contains RP-ACK RPDU
99	<--		CP-ACK	
100	UE			There should be no further CP-DATA messages until the UE aborts the RR connection.
101	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
102	UE			Clear the SMS message store
103	SS			A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered.
104	<--		PAGING TYPE 2	
105	-->		DEACTIVATE PDP CONTEXT REQUEST	The PDP context is deactivated by the UE. The PDP context deactivation is continued in parallel to the following
106	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
107	<--		DEACTIVATE PDP CONTEXT REQUEST COMPLETE	
108	-->		CP-ACK	shall be sent before 25 seconds after the start of step 106
109	SS			Waits max 60 seconds for RP-ACK RPDU
110	-->		CP-DATA	Contains RP-ACK RPDU
111	<--		CP-ACK	
112	UE			There should be no further CP-DATA messages until the UE aborts the RRC connection.
113	UE			The UE shall indicate that an SM has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed
114	UE			Clear the SMS message store

NOTE: Time values for SS wait time are chosen sufficiently high to be sure that the UE has enough time to respond to the different messages.

Specific Message Contents

SMS DELIVER TPDU

Information element	CommentValue
TP-UDL TP-UD (140 octets)	160 text of message (160 characters)

NOTE: The 160 characters in TP-UD shall include at least one occurrence of each character in the default alphabet (see 3GPP TS 23.038, sub-clause 6.2.1).

16.2.1.5 Test requirements

After step 7 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 seconds and CP-DATA containing RP-ACK within 60 seconds.

After step 25 UE shall retransmit CP-DATA containing RP-ACK within twice TC1M.

After step 30 UE shall indicate that an SM has arrived.

After step 43 UE shall repeat CP-DATA retransmissions as many times as the decided maximum number.

After step 48 UE shall indicate that an SM has arrived.

After step 51 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 seconds and CP-DATA containing RP-ACK within 60 seconds.

After step 67 UE shall retransmit CP-DATA containing RP-ACK within twice TC1M.

After step 73 UE shall indicate that an SM has arrived.

After step 78 UE shall repeat CP-DATA retransmissions as many times as the decided maximum number.

After step 89 UE shall indicate that an SM has arrived.

After step 94 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 seconds and CP-DATA containing RP-ACK within 60 seconds.

After step 106 UE shall receive SMS-DELIVER TPDU and send CP-ACK within 25 seconds and CP-DATA containing RP-ACK within 60 seconds.

16.2.2 SMS mobile originated

16.2.2.1 Definition

16.2.2.2 Conformance requirements

An active UE shall be able to submit short message TPDU (SMS-SUBMIT) at any time, independently of whether or not there is a PDP context in progress.

Reference

3GPP TS 23.040, sub-clause 3.1.

16.2.2.3 Test purpose

To verify that the UE is able to correctly send a short message where the SMS is provided for the point to point service. The test also verifies that the UE is capable of simultaneously receiving a network originated SM whilst sending a mobile originated SM.

16.2.2.4 Method of test

Initial Conditions

- System simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~"Idle, updated" state~~ GMM-state "GMM-REGISTERED";
  - the SMS message storage shall be empty.

Related ICS/IXIT Statements

Support for Short message MO/PP.

Description of the basic procedures to display a mobile originated short message.

Support for state PDP-ACTIVE of session management.

The value of timer TC1M.

Whether SMS messages are stored in the USIM and/or the ME.

Maximum length (characters) of a mobile originated short message.

Test procedure

a) The UE shall be set up to send a SM to the SS. The SS responds to RRC CONNECTION REQUEST by allocating a CCCH. The SS receives RRC CONNECTION SETUP COMPLETE on DCCH and then performs the authentication.

b) After receiving SECURITY MODE COMMAND UE shall send SECURITY COMMAND COMPLETE.

c) The SS responds to the CP-DATA containing RP-DATA RPDU (SMS SUBMIT TPDU) from the UE with a CP-ACK message within TC1M followed by a CP-DATA message containing the correct RP-ACK RPDU. The SS waits a maximum of 25 seconds for the CP-ACK message.

d) The SS sends a channel release message to the UE.

e) Steps a) and b) are repeated. The SS is configured not to send the CP-ACK message. Then maximum 3 CP-DATA retransmissions may occur. After a duration of TC1M + 5 seconds after the last CP-DATA retransmission the SS initiates channel release. The 5 seconds is the appropriate time to wait to verify that the UE does not send more than the maximum CP-DATA retransmissions.

f) Steps a) and b) are repeated. On receipt of the CP-DATA from the UE the SS sends a CP-ERROR message within TC1M containing a "Network Failure" cause. Then the SS initiates channel release.

g) A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered. The UE is setup to send an SM to the SS. After the reception of the SERVICE REQUEST, the SS sends a SERVICE ACCEPT message.

h) The SS responds to the CP-DATA containing RP-DATA RPDU (SMS SUBMIT TPDU) from the UE with a CP-ACK message within TC1M followed by a CP-DATA message containing the correct RP-ACK RPDU. The SS waits a maximum of 25 seconds for the CP-ACK message. Then the SS sends a channel release message to the UE.

i) Step g) is repeated. The SS is configured not to send the CP-ACK message. Then maximum 3 CP-DATA retransmissions may occur. After a duration of TC1M + 15 seconds after the last CP-DATA retransmission the SS initiates channel release. The 15 seconds is the appropriate time to wait to verify that the UE does not send more than the maximum CP-DATA retransmissions (during a PDP context in progress).

j) The SS is configured to receive a mobile originated SM. Steps a) and b) are repeated and, using the end of the CP-DATA message from the UE as a trigger, the SS sends a SM to the UE. In this case a new transaction identifier shall be used in the CP messages of SMS mobile terminated.

k) The UE is set up to send an SM to the SS. On receipt of the SERVICE REQUEST the SS sends a SERVICE REJECT message with the reject cause set to "GPRS services not allowed". After 5 seconds the SS initiates channel release.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<--		SYSTEM INFORMATION	BCCH
2	-->		RRC CONNECTION REQUEST	CCCH
3	<--		RRC CONNECTION SETUP	CCCH
4	-->		RRC CONNECTION SETUP COMPLETE	DCCH
5	-->		SERVICE REQUEST	
6	<--		AUTHENTICATION AND CIPHERING REQUEST	
7	-->		AUTHENTICATION AND CIPHERING RESPONSE	
8	<--		SECURITY MODE COMMAND	
9	-->		SECURITY MODE COMPLETE	
10	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU)
11	<--		CP-ACK	Sent within TC1M after step 10
12	<--		CP-DATA	Contains RP-ACK RPDU
13		SS		Waits max 25 seconds for CP-ACK
14	-->		CP-ACK	
15	<--		RRC CONNECTION RELEASE	RRC connection is released.
16	-->		RRC CONNECTION RELEASE COMPLETE	
17	<--		SYSTEM INFORMATION	BCCH
18	-->		RRC CONNECTION REQUEST	CCCH
19	<--		RRC CONNECTION SETUP	CCCH
20	-->		RRC CONNECTION SETUP COMPLETE	DCCH
21	-->		SERVICE REQUEST	
22	<--		AUTHENTICATION AND CIPHERING REQUEST	
23	-->		AUTHENTICATION AND CIPHERING RESPONSE	
24	<--		SECURITY MODE COMMAND	
25	-->		SECURITY MODE COMPLETE	
26	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU)
27		SS		SS configured not to send CP-ACK
28	-->		CP-DATA	Retransmitted CP-DATA message within twice TC1M after step 26
29	UE			Depending on the maximum number of CP-DATA retransmissions implemented, step 28 may be repeated. The maximum number of retransmissions may however not exceed three.
30	<--		RRC CONNECTION RELEASE	RRC CONNECTION is released after a duration of TC1M + 5 seconds after the last CP-DATA retransmission.
31	-->		RRC CONNECTION RELEASE COMPLETE	
32	<--		SYSTEM INFORMATION	BCCH
33	-->		RRC CONNECTION REQUEST	CCCH
34	<--		RRC CONNECTION SETUP	CCCH
35	-->		RRC CONNECTION SETUP COMPLETE	DCCH
36	-->		SERVICE REQUEST	
37	<--		AUTHENTICATION AND CIPHERING REQUEST	
38	-->		AUTHENTICATION AND CIPHERING RESPONSE	
39	<--		SECURITY MODE COMMAND	
40	-->		SECURITY MODE COMPLETE	
41	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU)
42	<--		CP-ERROR	Sent within TC1M containing "Network Failure" cause.
43	<--		RRC CONNECTION RELEASE	RRC CONNECTION is released.
44	-->		RRC CONNECTION RELEASE COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
45		SS		A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered.
46		UE		The UE is set up to send an SM
47	-->		SERVICE REQUEST	
48	<--		SERVICE ACCEPT	
49	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU)
50	<--		CP-ACK	Sent within TC1M after step 49
51	<--		CP-DATA	Contains RP-ACK RPDU
52		SS		Waits max 25 seconds for CP-ACK
53	-->		CP-ACK	
54	<--		RRC CONNECTION RELEASE	RRC CONNECTION is released.
55	-->		RRC CONNECTION RELEASE CONPLETE	
56		SS		A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered.
57	-->		SERVICE REQUEST	
58	<--		SERVICE ACCEPT	
59	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU)
60		SS		SS configured not to send CP-ACK
61	-->		CP-DATA	Transmitted CP-DATA message within twice TC1M after step 59
62		UE		Depending on the maximum number of CP-DATA retransmissions implemented, step 61 may be repeated. The maximum number of retransmissions may however not exceed three.
63	<--		RRC CONNECTION RELEASE	RRC CONNECTION is released after a duration of TC1m + 15 seconds after the last CP-DATA retransmission.
64	-->		RRC CONNECTION RELEASE COMPLETE	
65	<--		SYSTEM INFORMATION	BCCH
66	-->		RRC CONNECTION REQUEST	CCCH
67	<--		RRC CONNECTION SETUP	CCCH
68	-->		RRC CONNECTION SETUP COMPLETE	DCCH
69	-->		SERVICE REQUEST	
70	<--		AUTHENTICATION AND CIPHERING REQUEST	
71	-->		AUTHENTICATION AND CIPHERING RESPONSE	
72	<--		SECURITY MODE COMMAND	
73	-->		SECURITY MODE COMPLETE	
74	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU)
75		SS		The SS sends an SM to the UE triggered by the end of the CP-DATA message from the UE
76	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU)
77		UE		The UE shall correctly receive the SM and indicate that a message has arrived. If the UE provides the functionality to display MT messages, it is checked that the correct message is displayed. In the MO case the UE shall send the CP-ACK message with transaction identifier assigned to this transfer. In the MT case the UE shall send a CP-ACK message and a CP-DATA message containing the RP-ACK RPDU. The transaction identifier shall be the same as chosen by the SS for the MT transfer.
78	-->		RRC CONNECTION REQUEST	initiate outgoing call
79	<--		RRC CONNECTION SETUP	
80	-->		RRC CONNECTION SETUP COMPLETE	
81	-->		SERVICE REQUEST	
82	<--		SERVICE REJECT	Reject cause set to "GPRS services not allowed"
83	<--		RRC CONNECTION RELEASE	Sent 5 seconds after SERVICE REJ
84	-->		RRC CONNECTION RELEASE COMPLETE	

NOTE: Time values for SS wait times are chosen sufficiently high to be sure that the UE has enough time to respond to the different messages.

Specific Message Contents

SMS SUBMIT TPDU

Information element	Comment Value
TP-UDL TP-UD (140 octets max)	as applicable maximum number of characters (text of message) as defined by the manufacturer (see ICS/IXIT)

16.2.2.5 Test requirements

After step 9 UE shall send a CP-DATA containing RP-data. The RP-DATA shall contain SMS SUBMIT TPDU.

After step 26 UE shall retransmit a CP-DATA containing RP-data. The RP-DATA shall contain SMS SUBMIT TPDU.

After step 45 UE shall send the RRC CONNECTION RELEASE COMPLETE.

After step 48 UE shall send a CP-DATA containing RP-data. The RP-DATA shall contain SMS SUBMIT TPDU.

After step 71 UE shall repeat CP-DATA retransmissions as many times as the decided maximum number.

After step 76 UE shall correctly receive the SM and indicate that a message has arrived.

After step 82 UE shall not send CP-DATA.

16.2.3 Test of memory full condition and memory available notification:

The Memory Available Notification provides a means for the UE to notify the network that it has memory available to receive one or more short messages. The SMS status field in the USIM contains status information on the "memory available" notification flag.

16.2.3.1 Definition

16.2.3.2 Conformance requirement

1. When a mobile terminated message is Class 2, the UE shall ensure that the message has been transferred to the SMS data field in the USIM before sending an acknowledgement to the SC. The UE shall return a protocol error message if the short message cannot be stored in the USIM and there is other short message storage available in the UE. If all the short message storage in the UE is already in use, the UE shall return "memory capability exceeded".

2. When the UE rejects a short message due to lack of available memory capability the need to transfer notification shall be stored in the USIM.

3. If the memory capability becomes available because memory is cleared, the value of the memory capability exceeded notification flag in the USIM is read. If the flag is set, the UE notifies the network that memory capability is now available. After a positive acknowledgement from the network, the ME unsets the memory capability exceeded notification flag in the USIM.

References

- 3GPP TS 23.040, sub-clause 9.2.3.10, 3GPP TS 23.038, clause 4.
- 3GPP TS 23.040, sub-clause 10.3 (operation 14).
- 3GPP TS 23.040, sub-clause 10.3 (operation 14).

16.2.3.3 Test purpose

1. To verify that the UE sends the correct acknowledgement when its memory in the USIM becomes full.
2. To verify that the UE sends the correct acknowledgement when its memory in the ME and the USIM becomes full, and sets the "memory exceeded" notification flag in the USIM.
3. To verify that the UE performs the "memory available" procedure when its message store becomes available for receiving short messages, and only at this moment.

16.2.3.4 Method of test

Initial conditions

- System Simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~the idle updated state~~ GMM-state "GMM-REGISTERED";
  - the SMS message storage shall be empty;
  - the UE shall be connected to the USIM simulator. The following shall be present in the USIM simulator:
    - EF_{SMS} with at least one record;
    - $EF_{SMSstatus}$, with SMS "Memory Cap. Exceed" notification flag set to "memory available";
    - Service no. 4 (SMS) in EF_{SST} set to allocated and activated.
  - for storing of Class 1 Short Messages the UE shall be set up to store Short Messages in the ME memory (by way of MMI, as described in ICS/IXIT statement).

Related ICS/IXIT Statements

Support for Short message MT/PP.

Description of the basic procedures to display a mobile terminated short message.

Whether SMS messages are stored in the USIM and/or the ME.

The value of timer TC1M.

Test procedure

a) step a) of sub-clause 16.2.5.3 (test of Class 2 Short Messages) is repeated until the UE sends a negative acknowledgement (RP-ERROR). The USIM simulator shall indicate if the "memory capability exceeded" notification flag has been set on the USIM.

b) a Class 1 Short Message is sent to the UE.

c) step b) is repeated until the UE sends a negative acknowledgement (RP-ERROR). The USIM simulator shall indicate if the "memory capability exceeded" notification flag has been set on the USIM.

d) a Short Message is sent to the UE with the DCS field of the SMS-DELIVER TPDU set to 0.

e) the SS prompts the operator to read a short message and to remove it from the message store of the UE.

f) the SS waits for a RRC CONNECTION REQUEST from the UE, and sends a RRC CONNECTION SETUP.

g) after the SS receives a RRC CONNECTION SETUP COMPLETE, the SS authenticates the UE and activates ciphering.

h) the SS answers to the RP-SMMA from the UE with a CP-DATA containing a RP-ACK RPDU.

i) after the UE has acknowledged the CP-DATA with a CP-ACK, the SS releases theRRC connection. The USIM simulator shall indicate if the "memory capability exceeded" notification flag has been unset on the USIM.

j) step e) is repeated.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
2	-->		SERVICE REQUEST	
3	<--		AUTHENTICATION AND CIPHERING REQUEST	
4	-->		AUTHENTICATION AND CIPHERING RESPONSE	
5	<--		SECURITY MODE COMMAND	
6	-->		SECURITY MODE COMPLETE	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU), Class 2 Short Message
8		SS		Waits max 25 seconds for CP-ACK
9	-->		CP-ACK	
10		SS		Waits max 60 seconds for RP-ACK RPDU
11	-->		CP-DATA	Contains RP-ACK RPDU
12	<--		CP-ACK	Within TC1M after step 11
13	<--		RRC CONNECTION RELEASE	RRC connection is released. Step 1-18 is repeated until UE sends a negative acknowledgement (RP-ERROR) in step 11. The RP-ERROR RPDU cause field shall be "Protocol error, unspecified" if there is message capability in the ME, or "Memory capability exceeded" if there is no message capability in the ME. If the total memory store of the UE is full, the ME shall set the "memory capability exceeded" notification flag on the USIM.
14	-->		RRC CONNECTION RELEASE COMPLETE	
15			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
16	-->		SERVICE REQUEST	
17	<--		AUTHENTICATION AND CIPHERING REQUEST	
18	-->		AUTHENTICATION AND CIPHERING RESPONSE	
19	<--		SECURITY MODE COMMAND	
20	-->		SECURITY MODE COMPLETE	
21	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU), Class 1 Short Message
22		SS		Waits max 25 seconds for CP-ACK
23	-->		CP-ACK	
24		SS		Waits max 60 seconds for RP-ACK RPDU
25	-->		CP-DATA	Shall contain RP-ACK RPDU if there is memory capability in the ME. If not it shall contain RP-ERROR RPDU which cause field shall be "memory capability exceeded". If the total memory store of the UE now becomes full at this step, the ME shall set the "memory cap. exceed" notification flag on the USIM.
26	<--		CP-ACK	Within TC1M after step 25
27	<--		RRC CONNECTION RELEASE	RRC connection is released. Step 19-36 is repeated until the UE sends an RP-ERROR. The USIM simulator shall indicate if the "memory capability exceeded" notification flag has been set on the USIM.
28	-->		RRC CONNECTION RELEASE COMPLETE	

Step	Direction		Message	Comments
	UE	SS		
29			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
30	-->		SERVICE REQUEST	
31	<--		AUTHENTICATION AND CIPHERING REQUEST	
32	-->		AUTHENTICATION AND CIPHERING RESPONSE	
33	<--		SECURITY MODE COMMAND	
34	-->		SECURITY MODE COMPLETE	
35	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) with TP-DCS set to 0
36		SS		Waits max 25 seconds for CP-ACK
37	-->		CP-ACK	
38		SS		Waits max 60 seconds for RP-ACK RPDU
39	-->		CP-DATA	Shall contain RP-ERROR RPDU with error cause "memory capability exceeded".
40	<--		CP-ACK	Within TC1M after step 39
41	<--		RRC CONNECTION RELEASE	RRC connection is released.
42	-->		RRC CONNECTION RELEASE COMPLETE	
43		SS		Prompts the operator to remove one of the short messages from the message store of the UE.
44	<--		SYSTEM INFORMATION	BCCH
45	-->		RRC CONNECTION REQUEST	CCCH
46	<--		RRC CONNECTION SETUP	CCCH
47	-->		RRC CONNECTION SETUP COMPLETE	DCCH
48	-->		SERVICE REQUEST	
49	<--		SERVICE ACCEPT	
50	-->		CP-DATA	Contains RP-SMMA RPDU
51	<--		CP-ACK	
52	<--		CP-DATA	Contains RP-ACK RPDU
53	-->		CP-ACK	Acknowledge of CP-DATA containing the RP-ACK RPDU. The ME shall unset the "memory capability exceeded" notification flag on the USIM.
54	<--		RRC CONNECTION RELEASE	RRC connection is released. The USIM simulator shall indicate if the "memory capability exceeded" notification flag has been unset on the USIM.
55	-->		RRC CONNECTION RELEASE COMPLETE	
56		SS		Prompts the operator to remove one of the short messages from the message store of the UE.
57	UE			Shall not attempt to send a RP-SMMA RPDU. This is verified by checking that the UE does not send a CHANNEL REQUEST message with the establishment cause "Other services which can be completed with an SDCCH"

NOTE: Time values for SS wait time are chosen sufficiently high to be sure that the UE has enough time to respond to the different messages.

Specific Message Contents

SMS-DELIVER TPDU in step 7

Information element	Comment Value
TP-DCS	default alphabet, class 2 "11110010"B

SMS-DELIVER TPDU in step 21

TP-DCS	default alphabet, class 1 "11110001"B

SMS-DELIVER TPDU in step 35

TP-DCS	default alphabet "00000000"B

16.2.3.5 Test requirements

After UE sends a negative acknowledgement (RP-ERROR) in step 11, the USIM simulator shall indicate if the "memory capability exceeded" notification flag has been set on the USIM.

After UE sends a negative acknowledgement (RP-ERROR) in step 23, the USIM simulator shall indicate if the "memory capability exceeded" notification flag has been set on the USIM.

After step 53 the ME shall unset the "memory capability exceeded" notification flag on the USIM.

After step 56 UE shall not attempt to send a RP-SMMA RPDU.

16.2.4 Test of the status report capabilities and of SMS-COMMAND:

This test applies to UEs which support the status report capabilities.

16.2.4.1 Definition

16.2.4.2 Conformance requirement

The SMS offers the SC the capabilities of informing the UE of the status of a previously sent mobile originated short message. This is achieved by the SC returning a status report TPDU (SMS-STATUS-REPORT) to the originating UE.

SMS-COMMAND enables an UE to invoke an operation at the SC.

The UE shall increment TP-MR by 1 for each SMS-SUBMIT or SMS-COMMAND being submitted.

References

- 3GPP TS 23.040, sub-clause 3.2.9.
- 3GPP TS 23.040, sub-clause 9.2.3.6.

16.2.4.3 Test purpose

1) To verify that the UE is able to accept a SMS-STATUS-REPORT TPDU.
2) To verify that the UE is able to use the SMS-COMMAND functionality correctly and sends an SMS-COMMAND TPDU with the correct TP-Message-Reference.

16.2.4.4 Method of test

Initial conditions

- System Simulator:

- 1 cell, default parameters.

- User Equipment:

  - the UE shall be in ~~the idle updated state~~ GMM-state "GMM-REGISTERED".

Related ICS/IXIT Statements

Support of SMS MO/PP and MT/PP.

Test procedure

a) The UE is made to send a Mobile Originated short message setting TP-SRR as in steps a) to d) of test 16.2.2 (SMS Mobile originated).

b) The SS sends a CP-DATA message containing a RP-DATA RPDU itself containing an SMS-STATUS-REPORT TPDU.

c) The SS sends a RRC CONNECTION RELEASE message.

d) The UE is made to send an SMS-COMMAND message enquiring about the previously submitted short message.

e)

f) The SS acknowledges the CP-DATA message from the UE with a CP-ACK followed by a CP-DATA message containing an RP-ACK RPDU

g) After receiving the CP-ACK from the UE, the SS releases the RRC connection by using a RRC CONNECTION RELEASE message.

h) The UE is made to send an SMS-COMMAND message requiring to delete the previously submitted short message.

i) steps e) to g) are repeated.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	<--		SYSTEM INFORMATION	BCCH
2	-->		RRC CONNECTION REQUEST	CCCH
3	<--		RRC CONNECTION SETUP	CCCH
4	-->		RRC CONNECTION SETUP COMPLETE	DCCH
5	-->		SERVICE REQUEST	
6	<--		AUTHENTICATION AND CIPHERING REQUEST	
7	-->		AUTHENTICATION AND CIPHERING RESPONSE	
8	<--		SECURITY MODE COMMAND	
9	-->		SECURITY MODE COMPLETE	
10	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU)
11	<--		CP-ACK	Sent within TC1M after step 10
12	<--		CP-DATA	Contains RP-ACK RPDU
13		SS		Waits max 25 seconds for CP-ACK
14	-->		CP-ACK	
15	<--		RRC CONNECTION RELEASE	RRC connection is released.
16	-->		RRC CONNECTION RELEASE COMPLETE	
17			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
18	-->		SERVICE REQUEST	
19	<--		AUTHENTICATION AND CIPHERING REQUEST	

Step	Direction		Message	Comments
	UE	SS		
20	-->		AUTHENTICATION AND CIPHERING RESPONSE	
21	<--		SECURITY MODE COMMAND	
22	-->		SECURITY MODE COMPLETE	
23	<--		CP-DATA	Contains RP-DATA RPDU (SMS-STATUS-REPORT TPDU)
24	-->		CP-ACK	
25	-->		CP-DATA	Contains RP-ACK RPDU
26	<--		CP-ACK	
27	<--		RRC CONNECTION RELEASE	
28	-->		RRC CONNECTION RELEASE COMPLETE	
29	UE			The UE is made to send an SMS-COMMAND message enquiring about the previously submitted SM
30	<--		SYSTEM INFORMATION	BCCH
31	-->		RRC CONNECTION REQUEST	CCCH
32	<--		RRC CONNECTION SETUP	CCCH
33	-->		RRC CONNECTION SETUP COMPLETE	DCCH
34	-->		SERVICE REQUEST	
35	<--		AUTHENTICATION AND CIPHERING REQUEST	
36	-->		AUTHENTICATION AND CIPHERING RESPONSE	
37	<--		SECURITY MODE COMMAND	
38	-->		SECURITY MODE COMPLETE	
39	-->		CP-DATA	Contains RP-DATA RPDU (SMS-COMMAND TPDU) which shall contain the correct TP-MR
40	<--		CP-ACK	
41	<--		CP-DATA	Contains RP-ACK RPDU
42	-->		CP-ACK	
43	<--		RRC CONNECTION RELEASE	
44	-->		RRC CONNECTION RELEASE COMPLETE	
45	UE		The UE is made to send an SMS-COMMAND	message requiring to delete the previously submitted SM.
46	-->		RRC CONNECTION REQUEST	CCCH
47	<--		RRC CONNECTION SETUP	CCCH
48	-->		RRC CONNECTION SETUP COMPLETE	DCCH
49	-->		SERVICE REQUEST	
50	<--		AUTHENTICATION AND CIPHERING REQUEST	
51	-->		AUTHENTICATION AND CIPHERING RESPONSE	
52	<--		SECURITY MODE COMMAND	
53	-->		SECURITY MODE COMPLETE	
54	-->		CP-DATA	Contains RP-DATA RPDU (SMS-COMMAND TPDU) which shall contain the correct TP-MR
55	<--		CP-ACK	
56	<--		CP-DATA	Contains RP-ACK RPDU
57	-->		CP-ACK	
58	<--		RRC CONNECTION RELEASE	
59	-->		RRC CONNECTION RELEASE COMPLETE	

Specific Message Contents

SMS SUBMIT TPDU

Information element	Comment Value
TP-SRR	status report is requested "1"B

SMS-STATUS-REPORT TPDU (SS to UE in step 23):

Information element	Comment Value
TP-MR	same as previous SMS-SUBMIT
TP-MMS	no more messages "1"B
TP-SRQ	result of SMS-SUBMIT "0"B
TP-RA	same as the Destination address of the SMS-SUBMIT
TP-ST	SM received "00000000"B

first SMS-COMMAND TPDU (UE to SS in step 39)

Information element	Comment Value
TP-MR	TP-MR in previous SMS-SUBMIT plus "1"
TP-SRR	status report requested "1"B
TP-CT	Enquiry relating to previously submitted short message "00000000"B
TP-MN	not checked (TP-MR in previous SMS-SUBMIT)

second SMS-COMMAND TPDU (UE to SS in step 54)

Information element	Comment Value
TP-MR	TP-MR in previous SMS-COMMAND plus "1"
TP-CT	Delete previously submitted short message "00000010"B
TP-MN	not checked (TP-MR in previous SMS-SUBMIT)

16.2.4.5 Test requirements

After step 23 UE accept a SMS-STATUS-REPORT TPDU.

After step 39 UE shall send a SMS-COMMAND TPDU with the correct TP-Message-Reference.

After step 54 UE shall send a SMS-COMMAND TPDU with the correct TP-Message-Reference.

16.2.5 Test of message class 0 to 3

The tests under this sub-clause only apply to a UE capable of displaying short messages (see ICS/IXIT).

16.2.5.1 Short message class 0

16.2.5.1.1 Definition

16.2.5.1.2 Conformance requirement

When a mobile terminated message is class 0 and the UE has the capability of displaying short messages, the UE shall display the message immediately and send an acknowledgement to the SC when the message has successfully reached the UE irrespective of whether there is memory available in the USIM or ME. The message shall not be automatically stored in the USIM or ME.

References

3GPP TS 23.038, clause 4.

16.2.5.1.3 Test purpose

To verify that the UE will accept and display but not store a class 0 message, and that it will accept and display a class 0 message if its message store is full.

NOTE: failure of this test in a UE could cause it to reject a class 0 message when its SMS memory becomes full. This could lead to unwanted repetitions between the UE and the service centre.

16.2.5.1.4 Method of test

Initial conditions

- System Simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~the idle updated state~~ GMM-state "GMM-REGISTERED";
  - the UE message store shall be empty.

Related ICS/IXIT Statements

Support for Short message MT/PP.

Description of the basic procedures to display a mobile terminated short message.

The value of timer TC1M.

Whether SMS messages are stored in the USIM and/or the ME.

Test procedure

a) The SS sends a class 0 message by using the method described in step a) of sub-clause 16.2.1 but with the TPDU described in this sub-clause.

b) The UE message store shall be filled (for example by using the method of sub-clause 16.2.3 test of the memory available notification) with the same SMS-DELIVER TPDU except that TP-DCS is set to class 1.

c) The SS sends a class 0 message as in step a).

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
2	-->		SERVICE REQUEST	
3	<--		AUTHENTICATION AND CIPHERING REQUEST	
4	-->		AUTHENTICATION AND CIPHERING RESPONSE	
5	<--		SECURITY MODE COMMAND	
6	-->		SECURITY MODE COMPLETE	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU), Class 0 Short Message
8	-->		CP-ACK	
9	-->		CP-DATA	Contains RP-ACK RPDU.
10	<--		CP-ACK	
11	<--		RRC CONNECTION RELEASE	
12	-->		RRC CONNECTION RELEASE COMPLETE	
13	UE			The content of the short message shall be displayed by the ME. The UE shall not store the message. This can be checked by verifying that it is impossible to retrieve any short messages from the UE message store.
14		SS		The UE message store shall be filled (for example by using the method of 16.2.3) with Class 1 SMS-DELIVER TPDU.
15			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
16	-->		SERVICE REQUEST	
17	<--		AUTHENTICATION AND CIPHERING REQUEST	
18	-->		AUTHENTICATION AND CIPHERING RESPONSE	
19	<--		SECURITY MODE COMMAND	
20	-->		SECURITY MODE COMPLETE	
21	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU), Class 0 Short Message
22	-->		CP-ACK	
23	-->		CP-DATA	Contains RP-ACK RPDU.
24	<--		CP-ACK	
25	<--		RRC CONNECTION RELEASE	
26	-->		RRC CONNECTION RELEASE COMPLETE	
27	UE			The content of the short message shall be displayed by the ME.

Specific Message Contents

SMS-DELIVER TPDU (containing a class 0 message) (SS to UE)

Information element	Comment	Value
TP-DCS	default alphabet, class 0	"1111 0000"B

SMS-DELIVER TPDU (containing a class 1 message to fill the UE message store) (SS to UE)

Information element	Comment	Value
TP-DCS	default alphabet, class 1	"1111 0001"B

16.2.5.1.5 Test requirements

After step 7 UE shall accept and display but not store a class 0 message.

After step 21 UE shall accept and display a class 0 message.

16.2.5.2 Test of class 1 short messages

This test shall apply to UEs which support:

- storing of received Class 1 Short Messages; and
- displaying of stored Short Messages.

16.2.5.2.1 Definition

16.2.5.2.2 Conformance requirement

When a mobile terminated message is class 1, the UE shall send an acknowledgement to the SC when the message has successfully reached the UE and can be stored, either in the ME or in the USIM.

References

3GPP TS 23.038, clause 4.

16.2.5.2.3 Test purpose

This procedure verifies that the UE acts correctly on receiving a class 1 message, i.e. that it stores the message in the ME or USIM and sends an acknowledgement (at RP and CP-Layer).

16.2.5.2.4 Method of test

Initial conditions

- System Simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~the idle updated state~~ GMM-state "GMM-REGISTERED";
  - the UE message store shall be empty;
  - for storing of class 1 Short Messages, the UE shall be set up to store Short Messages in the ME memory (by way of MMI, as described in ICS/IXIT statement).

Related ICS/IXIT Statements

Support for Short message MT/PP.

Description of the basic procedures to display a mobile terminated short message.

The value of timer TC1M.

Whether SMS messages are stored in the USIM and/or the ME.

Test procedure

a) The SS delivers a Short Message of class 1 to the UE as specified in sub-clause 16.2.1, step a).

b) The Short Message is recalled (e.g. by means of the MMI).

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
2	-->		SERVICE REQUEST	
3	<--		AUTHENTICATION AND CIPHERING REQUEST	
4	-->		AUTHENTICATION AND CIPHERING RESPONSE	
5	<--		SECURITY MODE COMMAND	
6	-->		SECURITY MODE COMPLETE	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU), Class 1 Short Message
8	-->		CP-ACK	
9	-->		CP-DATA	Contains RP-ACK RPDU.
10	<--		CP-ACK	
11	<--		RRC CONNECTION RELEASE	
12	-->		RRC CONNECTION RELEASE COMPLETE	
13	UE			The short message shall be recalled and displayed at the UE.

Specific Message Contents

SMS-DELIVER TPDU (containing a class 1 message) (SS to UE)

Information element	CommentValue	
TP-DCS	default alphabet, class 1	"1111 0001"B

16.2.5.2.5 Test requirements

After step 7 UE shall store the message in the ME or USIM and send an acknowledgement.

16.2.5.3 Test of class 2 short messages

16.2.5.3.1 Definition

Class 2 Short Messages are defined as USIM specific, and the UE shall ensure that a message of this class is stored on the USIM.

16.2.5.3.2 Conformance requirement

When a mobile terminated message is Class 2, the UE shall ensure that the message has been correctly transferred to the SMS data field in the USIM before sending an acknowledgement to the SC. The UE shall return a "protocol error, unspecified" error message if the short message cannot be stored in the USIM and there is other short message storage available at the UE. If all the short message storage at the UE is already in use, the UE shall return "memory capacity exceeded".

Reference(s)

3GPP TS 23.040, sub-clause 9.2.3.10; 3GPP TS 23.038, clause 4. 3GPP TS 34.108,sub-clause6.11.3.2.27

16.2.5.3.3 Test purpose

This procedure verifies that the UE acts correctly on receiving a class 2 message, i.e. that it stores the message correctly in the USIM, and if this is not possible, returns a protocol error message, with the correct error cause, to the network.

There are 2 cases:

1) if the UE supports storing of short messages in the USIM and in the ME, and storage in the ME is not full, and the short message cannot be stored in the USIM, the error cause shall be "protocol error, unspecified";

2) if the UE supports storing of short messages in the USIM and not in the ME, and storage in the ME is not full, and the short message cannot be stored in the USIM, the error cause shall be "memory capacity exceeded".

NOTE: If the UE supports storing of short messages in the USIM and the ME, and storage in the ME is full, and the short message cannot be stored in the USIM, the error cause shall be "memory capacity exceeded". This case is not tested in this test.

16.2.5.3.4 Method of test

Initial conditions

- System Simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~the idle updated state~~ GMM-state "GMM-REGISTERED";
  - the ME message store shall be empty;
  - the ME shall be connected to the USIM simulator. The following shall be present in the USIM simulator:
    - EF_{SMS} with at least two free records and one full record;
    - $EF_{SMSstatus}$, with SMS "Memory Cap. Exceed" notification flag set to "memory available";
    - Service no. 4 (SMS) in EF_{SST} set to allocated and activated;
    - for storing of Class 1 Short Messages the UE shall be set up to store Short Messages in the ME memory (by way of MMI, as described in ICS/IXIT statement).

Related ICS/IXIT Statements

Support for Short message MT/PP.

The value of timer TC1M.

Whether SMS messages are stored in the USIM and/or the ME.

Test procedure

a) The SS delivers a Short Message of class 2 to the UE as specified in sub-clause 16.2.1, step b).

b) Following an attempt by the ME to store the short message in a free record of EF_{SMS} in the USIM, the USIM simulator returns the status response "OK" ("90 00").

c) Step a) is repeated.

d) Following an attempt by the ME to store the short message in a free record of EF_{SMS} in the USIM, the USIM simulator returns the status response "memory problem" ("92 40").

e) The USIM simulator indicates if an attempt was made in steps a) and c) to store the messages and if the messages are stored according to the requirement.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
2	-->		SERVICE REQUEST	
3	<--		AUTHENTICATION AND CIPHERING REQUEST	
4	-->		AUTHENTICATION AND CIPHERING RESPONSE	
5	<--		SECURITY MODE COMMAND	
6	-->		SECURITY MODE COMPLETE	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU), Class 2 Short Message
8	-->		CP-ACK	
9	ME			The ME shall correctly store the short message in a free record of EFSMS in the USIM, i.e. -the ME shall use a free record - the first byte of the record shall indicate "message received by UE from network" - the TS-Service-Centre-Address shall be correctly stored - the TPDU shall be identical to that sent by the SS - bytes following the TPDU shall be set to "FF"
10	USIM			The USIM simulator returns the status response "OK" ("90 00"). The USIM simulator shall indicate if an attempt was made by the ME to store the short message in the USIM.
11	-->		CP-DATA	Contains RP-ACK RPDU.
12	<--		CP-ACK	
13	<--		RRC CONNECTION RELEASE	
14	-->		RRC CONNECTION RELEASE COMPLETE	
15			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
16	-->		SERVICE REQUEST	
17	<--		AUTHENTICATION AND CIPHERING REQUEST	
18	-->		AUTHENTICATION AND CIPHERING RESPONSE	
19	<--		SECURITY MODE COMMAND	
20	-->		SECURITY MODE COMPLETE	
21	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU), Class 2 Short Message
22	-->		CP-ACK	
23	ME			The ME shall attempt to store the short message in a free record of EFSMS in the USIM.

Step	Direction		Message	Comments
	UE	SS		
24	USIM			The USIM simulator returns the status response "memory problem" ("92 40"). The USIM simulator shall indicate if an attempt was made by the ME to store the short message in the USIM.
25	-->		CP-DATA	Contains RP-ERROR RPDU with error cause "protocol error, unspecified" if the UE supports storing of short messages in the ME, or error cause "memory capacity exceeded" if not.
26	<--		CP-ACK	
27	<--		RRC CONNECTION RELEASE	
28	-->		RRC CONNECTION RELEASE COMPLETE	

Specific Message Contents

SMS-DELIVER TPDU (containing a class 2 message) (SS to UE)

Information element	Comment	Value
TP-DCS	default alphabet, class 2	"1111 0010"B

16.2.5.3.5 Test requirements

After step 10 UE shall confirm that the short message is stored in the USIM and send CP-DATA containing RP-ACK RPDU.

After step 24 UE shall confirm that the short message cannot be stored in the USIM and send CP-DATA containing RP-ERROR RPDU. If UE supports storing of short message in the ME, the error cause of RP-ERROR RPDU shall be “protocol error, unspecified”, and if not the error cause of RP-ERROR RPDU shall be “memory capacity exceeded”

16.2.5.4 Test of class 3 short messages

For further study.

16.2.6 Test of short message type 0

For further study.

16.2.7 Test of the replace mechanism for SM type 1-7

16.2.7.1 Definition

16.2.7.2 Conformance requirement

On receipt of a short message, the UE shall check to see if the associated Protocol Identifier contains a Replace Short Message Type code. If such a code is present, then the UE will check the associated SC address (RP-OA) and originating address (TP-OA) and replace any existing stored message having the same Protocol Identifier code, SC address and originating address with the new short message.

Reference(s)

3GPP TS 23.040; sub-clause 9.2.3.9.

16.2.7.3 Test purpose

This procedure verifies the correct implementation of the replace mechanism for Replace Short Messages.

16.2.7.4 Method of test

Initial conditions

- System Simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~the idle updated state~~ GMM-state "GMM-REGISTERED";
  - the UE message store shall be empty.

Related ICS/IXIT Statements

Support for Short message MT/PP.

Description of the basic procedures to display a mobile terminated short message.

The value of timer TC1M.

Test procedure

a) Two different numbers n and m are drawn randomly between 1 and 7. Two different addresses for TP-Originating-Address (TPOA1 and TPOA2) are drawn. Two different addresses for RP-Originating-Address (RPOA1 and RPOA2) are drawn.

b) The SS delivers a short message to the UE as specified in sub-clause 16.2.1 step a). In the SMS-DELIVER TPDU, the TP-Protocol-Identifier parameter is "Replace Short Message Type n", the TP-Originating-Address is TPOA1, and the RP-Originating-Address is RPOA1.

c) Step b) is repeated but with a different TP-Originating-Address (TPOA2), and different contents of TP-User-Data in the SMS-DELIVER TPDU. The other parameters are the same as in step b).

d) Step c) is repeated but with RPOA2 in the RP-Originated-Address, and contents of TP-User-Data different from the former two messages. The other parameters are the same as in step c).

e) Step d) is repeated but with the TP-Protocol-Identifier equal to "Replace Short Message Type m", and contents of TP-User-Data different from the former three messages. The other parameters are the same as in step d).

f) Step e) is repeated but the contents of TP-User-Data are different from that used in step e).

g) The SS prompts the operator to display the Short Messages stored in the UE.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
2	-->		SERVICE REQUEST	
3	<--		AUTHENTICATION AND CIPHERING REQUEST	
4	-->		AUTHENTICATION AND CIPHERING RESPONSE	
5	<--		SECURITY MODE COMMAND	
6	-->		SECURITY MODE COMPLETE	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) TP-PID is "Replace Short Message Type n", TP-OA is TPOA1 and RP-OA is RPOA1
8	-->		CP-ACK	
9	-->		CP-DATA	Contains RP-ACK RPDU.
10	<--		CP-ACK	

Step	Direction		Message	Comments
	UE	SS		
11	<--		RRC CONNECTION RELEASE	
12	-->		RRC CONNECTION RELEASE COMPLETE	
13			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
14	-->		SERVICE REQUEST	
15	<--		AUTHENTICATION AND CIPHERING REQUEST	
16	-->		AUTHENTICATION AND CIPHERING RESPONSE	
17	<--		SECURITY MODE COMMAND	
18	-->		SECURITY MODE COMPLETE	
19	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) TP-PID is "Replace Short Message Type n", TP-OA is TPOA2 and RP-OA is RPOA1, TP-UD different from step 7
20	-->		CP-ACK	
21	-->		CP-DATA	Contains RP-ACK RPDU.
22	<--		CP-ACK	
23	<--		RRC CONNECTION RELEASE	
24	-->		RRC CONNECTION RELEASE COMPLETE	
25			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
26	-->		SERVICE REQUEST	
27	<--		AUTHENTICATION AND CIPHERING REQUEST	
28	-->		AUTHENTICATION AND CIPHERING RESPONSE	
29	<--		SECURITY MODE COMMAND	
30	-->		SECURITY MODE COMPLETE	
31	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) TP-PID is "Replace Short Message Type n", TP-OA is TPOA2 and RP-OA is RPOA2, TP-UD different from step 7 and 19
32	-->		CP-ACK	
33	-->		CP-DATA	Contains RP-ACK RPDU.
34	<--		CP-ACK	
35	<--		RRC CONNECTION RELEASE	
36	-->		RRC CONNECTION RELEASE COMPLETE	
37			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
38	-->		SERVICE REQUEST	
39	<--		AUTHENTICATION AND CIPHERING REQUEST	
40	-->		AUTHENTICATION AND CIPHERING RESPONSE	
41	<--		SECURITY MODE COMMAND	
42	-->		SECURITY MODE COMPLETE	
43	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) TP-PID is "Replace Short Message Type m", TP-OA is TPOA2 and RP-OA is RPOA2, TP-UD different from step 7, 19 and 31
44	-->		CP-ACK	
45	-->		CP-DATA	Contains RP-ACK RPDU.
46	<--		CP-ACK	
47	<--		RRC CONNECTION RELEASE	
48	-->		RRC CONNECTION RELEASE COMPLETE	
49			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
50	-->		SERVICE REQUEST	

Step	Direction		Message	Comments
	UE	SS		
51	<--		AUTHENTICATION AND CIPHERING REQUEST	
52	-->		AUTHENTICATION AND CIPHERING RESPONSE	
53	<--		SECURITY MODE COMMAND	
54	-->		SECURITY MODE COMPLETE	
55	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) TP-PID is "Replace Short Message Type m", TP-OA is TPOA2 and RP-OA is RPOA2, TP-UD different from step 43
56	-->		CP-ACK	
57	-->		CP-DATA	Contains RP-ACK RPDU.
58	<--		CP-ACK	
59	<--		RRC CONNECTION RELEASE	
60	-->		RRC CONNECTION RELEASE COMPLETE	
61	SS			Prompts the operator to display the Short Messages stored in the UE. Only the Short Messages delivered in step 7, 19, 31 and 55 shall be retrievable and displayed

Specific Message Contents

SMS-DELIVER TPDU

Information element	CommentValue
TP-MMS	no more messages are waiting in SC "1"B
TP-PID	binary 01000xxx, xxx represents n resp. m (see test method description)

16.2.7.5 Test requirements

After step 60 only the Short Messages delivered in step 7, 19, 31 and 55 shall be retrieved and displayed.

16.2.8 Test of the reply path scheme

16.2.8.1 Definition

16.2.8.2 Conformance requirement

When a replying UE receives an original mobile terminated short message it has:

- originating SME = TP-Originating Address in the SMS-DELIVER TPDU;
- original SC = RP-Originating Address in the RP-MT-DATA.

When submitting the reply mobile originated short message, the replying UE should use parameters as follows:

- TP-Destination Address in SMS-SUBMIT TPDU = originating SME;
- RP-Destination Address in RP-MO-DATA = original SC.

Reference(s)

3GPP TS 23.040 Annex D.5,D.6

16.2.8.3 Test purpose

This procedure verifies that the UE is able to send a Reply Short Message back to the correct originating SME even if in the meantime it receives another Short Message.

16.2.8.4 Method of test

Initial conditions

- System Simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~the idle updated state~~ GMM-state "GMM-REGISTERED";
  - the UE message store shall be empty.

Related ICS/IXIT Statements

Support for Short message MT/PP.

Support for Short message MO/PP.

Description of the basic procedures to display a mobile terminated short message.

Description of the basic procedures to send a mobile originated short message.

The value of timer TC1M.

Test procedure

a) The SS delivers a Short Message as specified in sub-clause 16.2.1, step b) with TP-Reply-Path set to 1.

b) Step a) is repeated but with:
   - different TP-Originating-Address for the originating SME;
   - different RP-Originating-Address for the original SC; and
   - different message contents TP-User-Data.

c) One of the two Short Messages is displayed (e.g. by means of the MMI) and the Reply Short Message is submitted (e.g. by means of the MMI).

d) step c) is repeated for the other Short Message.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
2	-->		SERVICE REQUEST	
3	<--		AUTHENTICATION AND CIPHERING REQUEST	
4	-->		AUTHENTICATION AND CIPHERING RESPONSE	
5	<--		SECURITY MODE COMMAND	
6	-->		SECURITY MODE COMPLETE	
7	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) TP-RP set to 1
8	-->		CP-ACK	Sent within TC1M after step 7

Step	Direction		Message	Comments
	UE	SS		
9	-->		CP-DATA	Contains RP-ACK RPDU.
10	<--		CP-ACK	
11	<--		RRC CONNECTION RELEASE	
12	-->		RRC CONNECTION RELEASE COMPLETE	
13			Mobile terminated establishment of Radio Resource Connection	See 3GPP TS34.108
14	-->		SERVICE REQUEST	
15	<--		AUTHENTICATION AND CIPHERING REQUEST	
16	-->		AUTHENTICATION AND CIPHERING RESPONSE	
17	<--		SECURITY MODE COMMAND	
18	-->		SECURITY MODE COMPLETE	
19	<--		CP-DATA	Contains RP-DATA RPDU (SMS DELIVER TPDU) TP-OA, RP-OA and TP-UD different from step 7
20	-->		CP-ACK	Sent within TC1M after step 7
21	-->		CP-DATA	Contains RP-ACK RPDU.
22	<--		CP-ACK	
23	<--		RRC CONNECTION RELEASE	
24	-->		RRC CONNECTION RELEASE COMPLETE	
25	UE			One of the two Short Messages is displayed and the Reply Short Message is submitted.
26	<--		SYSTEM INFORMATION	BCCH
27	-->		RRC CONNECTION REQUEST	CCCH
28	<--		RRC CONNECTION SETUP	CCCH
29	-->		RRC CONNECTION SETUP COMPLETE	DCCH
30	-->		SERVICE REQUEST	
31	<--		AUTHENTICATION AND CIPHERING REQUEST	
32	-->		AUTHENTICATION AND CIPHERING RESPONSE	
33	<--		SECURITY MODE COMMAND	
34	-->		SECURITY MODE COMPLETE	
35	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU) RP-DA = RP-OA corresponding to the message displayed TP-DA = TP-OA corresponding to the message displayed
36	<--		CP-ACK	Sent within TC1M after step 35
37	<--		CP-DATA	Contains RP-ACK RPDU
38	SS			Waits max 25 seconds for CP-ACK
39	-->		CP-ACK	
40	<--		RRC CONNECTION RELEASE	RRC connection is released.
41	-->		RRC CONNECTION RELEASE COMPLETE	
42	UE			The other Short Message is displayed and the Reply Short Message is submitted.
43	<--		SYSTEM INFORMATION	BCCH
44	-->		RRC CONNECTION REQUEST	CCCH
45	<--		RRC CONNECTION SETUP	CCCH
46	-->		RRC CONNECTION SETUP COMPLETE	DCCH
47	-->		SERVICE REQUEST	
48	<--		AUTHENTICATION AND CIPHERING REQUEST	
49	-->		AUTHENTICATION AND CIPHERING RESPONSE	
50	<--		SECURITY MODE COMMAND	
51	-->		SECURITY MODE COMPLETE	
52	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU) RP-DA = RP-OA corresponding to the Message displayed TP-DA = TP-OA corresponding to the message displayed
53	<--		CP-ACK	Sent within TC1M after step 52

Step	Direction		Message	Comments
	UE	SS		
54	<--		CP-DATA	Contains RP-ACK RPDU
55	SS			Waits max 25 seconds for CP-ACK
56	-->		CP-ACK	
57	<--		RRC CONNECTION RELEASE	RRC connection is released.
58	-->		RRC CONNECTION RELEASE COMPLETE	

Specific Message Contents

SMS-DELIVER TPDU

Information element	CommentValue	
TP-MMS	no more messages are waiting in SC	"1"B
TP-RP	Reply Path exists	"1"B

16.2.8.5 Test requirements

After step 34 UE shall send the Reply Short Message corresponding to one of two previously received short messages.

After step 51 UE shall send the Reply Short Message corresponding to the other of two previously received short messages.

16.2.9 Multiple SMS mobile originated

16.2.9.1 UE in idle mode

This test applies to UE supporting the ability of sending multiple short messages on the same RRC connection when there is no PDP context in progress.

16.2.9.1.1 Definition

16.2.9.1.2 Conformance requirements

When the UE chooses to use the same RRC connection to send another short message or a memory available notification, then:

- the UE shall transmit a SERVICE REQUEST for the new CM connection before the final CP-ACK (e.g. the one that acknowledges the CP-DATA that carried the RP-ACK) for the old GMM context is transmitted;
- before transmission of the first CP-DATA on the new GMM context, the UE shall transmit the CP-ACK for the old GMM context;
- the Transaction Identifier used on the new GMM context shall be different to that used on the old GMM context; and
- the UE shall not initiate establishment of the new GMM context before the final CP-DATA (e.g. the one carrying the RP-ACK) has been received.

Reference

- 3GPP TS 23.040; sub-clause 3.1.
- 3GPP TS 24.011; sub-clause 5.4.

16.2.9.1.3 Test purpose

To verify that the UE is able to correctly send multiple short messages on the same RRC connection when using an DCCH.

16.2.9.1.4 Method of test

Initial conditions

- System simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~"Idle, updated" state~~ GMM-state "GMM-REGISTERED";
  - the SMS message storage shall be empty.

Related ICS/IXIT statements

Support for multiple short message MO/PP on the same RRC connection.

Description of how to enter multiple SMS.

Description of the basic procedures to display a mobile originated short message.

Whether SMS messages are stored in the USIM and/or the ME.

Test procedure

a) The UE shall be set up to send 3 short messages as multiple SM to the SS. The SS answers correctly to RRC CONNECTION REQUEST on CCCH and then performs the authentication.

b) After receiving SECURITY MODE COMMAND UE shall send SECURITY COMMAND COMPLETE.

c) The SS responds to the CP-DATA containing RP-DATA RPDU (SMS SUBMIT TPDU) from the UE with a CP-ACK message followed by a CP-DATA message containing the correct RP-ACK RPDU. The Transaction Identifier used on this MM connection is 'x'.

d) The UE shall transmit a SERVICE REQUEST for the new CM connection (for the second short message) before the final CP-ACK (the one that acknowledges the CP-DATA that carried the RP-ACK before) for the old GMM context is transmitted. The UE shall not initiate establishment of the new GMM context before the final CP-DATA (i.e. the one carrying the RP-ACK for the first short message) has been received. Before transmission of the first CP-DATA on the new GMM context, the UE shall transmit the CP-ACK for the old GMM context. The Transaction Identifier used on the new GMM context shall be y, where y <> x (see procedure c)).

e) The SS waits a maximum of 5 seconds after receiving the SERVICE REQUEST for the CP-ACK message from the UE.

f) The SS responds to the CP-DATA containing RP-DATA RPDU (SMS SUBMIT TPDU) from the UE with a CP-ACK message followed by a CP-DATA message containing the correct RP-ACK RPDU.

g) The UE shall transmit a SERVICE REQUEST for the new CM connection (for the third short message) before the final CP-ACK (the one that acknowledges the CP-DATA that carried the RP-ACK before) for the old GMM context is transmitted. Before transmission of the first CP-DATA on the new GMM context, the UE shall transmit the CP-ACK for the old GMM context. The Transaction Identifier used on the new GMM context shall be z, where z <> y (see procedure d)). The UE shall not initiate establishment of the new GMM context before the final CP-DATA (i.e. the one carrying the RP-ACK for the second short message) has been received.

h) The SS waits a maximum of 5 seconds after receiving the SERVICE REQUEST for the CP-ACK message from the UE.

i) The SS responds to the CP-DATA containing RP-DATA RPDU (SMS SUBMIT TPDU) from the UE with a CP-ACK message followed by a CP-DATA message containing the correct RP-ACK RPDU.

j) The SS waits a maximum of 5 seconds after sending CP-DATA for the CP-ACK message from the UE.

k) The SS sends a RRC CONNECTION RELEASE to the UE.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		<--	SYSTEM INFORMATION	BCCH
2		-->	RRC CONNECTION REQUEST	CCCH
3		<--	RRC CONNECTION SETUP	CCCH
4		-->	RRC CONNECTION SETUP COMPLETE	DCCH
5		-->	SERVICE REQUEST	
6		<--	AUTHENTICATION AND CIPHERING REQUEST	
7		-->	AUTHENTICATION AND CIPHERING RESPONSE	
8		<--	SECURITY MODE COMMAND	
9		-->	SECURITY MODE COMPLETE	
10		-->	CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU). The Transaction Identifier used in steps 10, 11, 12 and 14 shall be x.
11		<--	CP-ACK	
12		<--	CP-DATA	Contains RP-ACK RPDU
13		-->	SERVICE REQUEST	
14		-->	CP-ACK	Shall be sent within 5 seconds of step 13
15		<--	SERVICE ACCEPT	
16		-->	CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU). The Transaction Identifier used in steps 16, 17, 18 and 20 shall be y where y <> x (see step 10).
17		<--	CP-ACK	
18		<--	CP-DATA	Contains RP-ACK RPDU
19		-->	SERVICE REQUEST	
20		-->	CP-ACK	Shall be sent within 5 seconds of step 19
21		<--	SERVICE ACCEPT	
22		-->	CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU). The Transaction Identifier used in steps 22, 23, 24 and 25 shall be z, where z <> y (see step 16).
23		<--	CP-ACK	
24		<--	CP-DATA	Contains RP-ACK RPDU
25		-->	CP-ACK	Shall be sent within 5 seconds of step 24
26		<--	RRC CONNECTION RELEASE	RRC connection is released.
27		-->	RRC CONNECTION RELEASE COMPLETE	

16.2.9.1.5 Test requirements

In step 12 the UE shall transmit a SERVICE REQUEST for the new CM connection (for the second short message) before the final CP-ACK for the old GMM context is transmitted.

In step 17 the UE shall transmit a SERVICE REQUEST for the new CM connection (for the third short message) before the final CP-ACK for the old GMM context is transmitted.

16.2.9.2 UE in active mode

This test applies to UE supporting the ability of sending concatenated multiple short messages when there is a PDP context in progress.

16.2.9.2.1 Definition

16.2.9.2.2 Conformance requirements

When the UE chooses to use the same RRC connection to send another short message or a memory available notification, then:

- the UE shall transmit a SERVICE REQUEST for the new CM connection before the final CP-ACK (e.g. the one that acknowledges the CP-DATA that carried the RP-ACK) for the old GMM context is transmitted;
- before transmission of the first CP-DATA on the new GMM context, the UE shall transmit the CP-ACK for the old GMM context;
- the Transaction Identifier used on the new GMM context shall be different to that used on the old GMM context; and
- the UE shall not initiate establishment of the new GMM context before the final CP-DATA (e.g. the one carrying the RP-ACK) has been received.

Reference

- 3GPP TS 23.040; sub-clause 3.1.
- 3GPP TS 24.011; sub-clause 5.4.

16.2.9.2.3 Test purpose

To verify that the UE is able to correctly concatenate multiple short messages on the same RRC connection when sent parallel to a PDP context.

16.2.9.2.4 Method of test

Initial conditions

- System simulator:
  - 1 cell, default parameters.
- User Equipment:
  - the UE shall be in ~~"Idle, updated" state~~ GMM-state "GMM-REGISTERED";
  - the SMS message storage shall be empty.

Related ICS/IXIT statements

Support for multiple short message MO/PP on the same RRC connection.

Description of how to enter multiple SMS.

Description of the basic procedures to display a mobile originated short message.

Support for state PDP-ACTIVATE of session management.

Whether SMS messages are stored in the USIM and/or the ME.

Test procedure

a) ~~a)~~ A PDP context is established with the SS and the state PDP-ACTIVE of session management is entered. The UE is set up to send 3 short messages as multiple SM to the SS. After the reception of the SERVICE REQUEST, the SS sends a SERVICE ACCEPT message.

b) ~~b)~~ Steps c) to k) of the test procedure in sub-clause 16.2.9.1.4 are repeated.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1		SS		A PDP context is established and the state PDP-ACTIVE of session management is entered.
2	UE			The UE is set up to send 3 short messages as multiple SM
3	-->		SERVICE REQUEST	
4	<--		SERVICE ACCEPT	
5	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU). The Transaction Identifier used in steps 5, 6, 7 and 9 shall be x.
6	<--		CP-ACK	
7	<--		CP-DATA	Contains RP-ACK RPDU
8	-->		SERVICE REQUEST	
9	-->		CP-ACK	Shall be sent within 5 seconds of step 8
10	<--		SERVICE ACCEPT	
11	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU). The Transaction Identifier used in steps 11, 12, 13 and 15 shall be y where y <> x (see step 5).
12	<--		CP-ACK	
13	<--		CP-DATA	Contains RP-ACK RPDU
14	-->		SERVICE REQUEST	
15	-->		CP-ACK	Shall be sent within 5 seconds of step 14
16	<--		SERVICE ACCEPT	
17	-->		CP-DATA	Contains RP-DATA RPDU (SMS SUBMIT TPDU). The Transaction Identifier used in steps 17, 18, 19 and 20 shall be z, where z <> y (see step 11).
18	<--		CP-ACK	
19	<--		CP-DATA	Contains RP-ACK RPDU
20	-->		CP-ACK	Shall be sent within 5 seconds of step 19
21	<--		RRC CONNECTION RELEASE	RRC connection is released.
22	-->		RRC CONNECTION RELEASE COMPLETE	

16.2.9.2.5 Test requirements

In step 7 the UE shall transmit a SERVICE REQUEST for the new CM connection (for the second short message) before the final CP-ACK for the old GMM context is transmitted.

In step 13 the UE shall transmit a SERVICE REQUEST for the new CM connection (for the third short message) before the final CP-ACK for the old GMM context is transmitted.

16.3 Short message service cell broadcast

16.3.1 Definition

16.3.2 Conformance requirements

In idle mode, the UE listens to the BCCH and to the paging sub-channel for the paging group it belongs to. The UE is required to receive and analyse the paging messages and immediate assignment messages sent on the paging subchannel corresponding to its paging subgroup.

Reference

- 3GPP TS 23.041;clause 8.
- 3GPP TS 25.324; clause 11

16.3.3 Test purpose

This test verifies that an UE supporting SMS-CB is able to receive SMS-CB messages.

16.3.4 Method of test

Initial conditions

- System Simulator:
  - 1 cell, default parameters;
  - the SS provides a BCCH/CCCH to support the UE in idle mode;
  - periodic location updating is disabled.
- User Equipment:
  - the UE shall be in the idle updated state.

Related ICS/IXIT Statements

Support for short message transmission cell broadcast.

Description of the basic procedures to display a cell broadcasted short message.

Test procedure

Three Cell Broadcast (CB) messages are sent by the SS on the CBCH with message codes 0,1,1 in serial number fields respectively.

The UE shall respond to the page.

Expected sequence

Since the SMS-CB messages are sent continuously, a table is not applicable in this test.

Specific Message Contents:

Cell broadcast test message content

Information element	Comment Value
Message Type	CBS Message "1"B (see 3GPP TS 25.324, sub-clause 11.1)
Message ID	
Serial Number	
- Geographical scope	"00"B
- Message code	see test procedure "0000000000"B or "0000000001"B
- Update number	as applicable
Data Coding Scheme	Default alphabet, English "00000001"B
CB Data	max 1246 octets

16.3.5 Test requirements

In consequence of test the UE shall ignore third message and store two messages.

16.4 Default message contents:

16.4.1 Default message contents for SM-CP protocol

CP-DATA

Protocol Discriminator	SMS messages ("1001"B)
Transaction Identifier	
TIO	any value from the set {0, ..., 6}
TI flag	0
Message type	00000001
CP-User data	
length indicator	
RPDU	max 248 octets

CP-ACK

Protocol Discriminator	SMS messages ("1001"B)
Transaction Identifier	
TIO	
TI flag	
Message type	00000100

CP-ERROR

Protocol Discriminator	SMS messages ("1001"B)
Transaction Identifier	
TIO	
TI flag	
Message type	00010000
CP-Cause	
Cause value	see 3GPP TS 24.011, sub-clause 8.1.4.2

16.4.2 Default message contents for SM-RP protocol

RP-DATA

Information element	Comment Value
RP-Message Type	"001"B (SS->UE) or "000"B(UE->SS)
RP-Message Reference	see 3GPP TS 24.011, sub-clause 8.2.3
RP-Originator Address	see 3GPP TS 24.011, sub-clause 8.2.5.1
RP-Destination Address	see 3GPP TS 24.011, sub-clause 8.2.5.2
RP-User Data	see 3GPP TS 24.011, sub-clause 8.2.5.3
Length indicator	
TP-DATA	max 233 octets

RP-ACK

Information element	Comment Value
RP-Message Type	"010"B (UE->SS) or "011"B(SS->UE)
RP-Message Reference	see 3GPP TS 24.011, sub-clause 8.2.3
RP-User Data	see 3GPP TS 24.011, subclause 8.2.5.3 : optional, may be present or not
RP-User Data IEI	"1000001"B
Length indicator	
TP-Data	max 232 octets

RP-ERROR

Information element	Comment Value
RP-Message Type	"100"B (UE->SS) or "101"B(SS->UE)
RP-Message Reference	see 3GPP TS 24.011, sub-clause 8.2.3
RP-Cause	see 3GPP TS 24.011, sub-clause 8.2.5.4
RP-User Data	see 3GPP TS 24.011, sub-clause 8.2.5.3: optional, may be present or not
RP-User Data IEI	"1000001"B
Length indicator	
TP-Data	max 232 octets

RP-SMMA UE->SS)

Information element	Comment Value
RP-Message Type	"110"B (UE->SS)
RP-Message Reference	see 3GPP TS 24.011, sub-clause 8.2.3

16.4.3 Default message contents for SM-TP protocol

SMS DELIVER TPDU

Information element	Comment Value
TP-MTI	SMS DELIVER "00"B
TP-MMS	more messages are waiting in SC "0"B
TP-RP	no reply path "0"B
TP-UDHI	TP-UD contains only the SM"0"B
TP-SRI	no status report returned"0"B
TP-OA	an international number coded E.164
TP-PID	default"00000000"B
TP-DCS	default alphabet "00000000"B
TP-SCTS	any legal value (cf. 3GPP TS 23.040)
TP-UDL	
TP-UD	max 140 octets

SMS SUBMIT TPDU

Information element	CommentValue
TP-MTI	SMS SUBMIT"01"B
TP-RD	SC shall accept same SMS-SUBMIT “0”B
TP-VPF	TP-VP field not present “00”B
TP-RP	no reply path "0"B
TP-UDHI	TP-UD contains only the SM “00”B
TP-SRR	no request of status report “00”B
TP-MR	
TP-DA	an international number coded E164
TP-PID	default"00000000"B
TP-DCS	default alphabet "00000000"B
TP-VP	
TP-UDL	
TP-UD	max 140 octets

SMS COMMAND TPDU

Information element	Comment Value
TP-MTI	SMS-COMMAND"10"B
TP-UDHI	TP-UD contains only the SM “00”B
TP-SRR	status report not requested "0"B
TP-MR	
TP-PID	default"00000000"B
TP-CT	
TP-MN	
TP-DA	an international number coded E164
TP-CDL	
TP-CD	

SMS STATUS REPORT TPDU

Information element	Comment Value
TP-MTI	SMS-STATUS-REPORT“10”B
TP-MMS	no more messages "1"B
TP-SRQ	result of SMS-SUBMIT "0"B
TP-MR	
TP-RA	the destination address of the previous SM MO
TP-SCTS	any legal value (cf. 3GPP TS 23.040, sub-clause 9.2.3.11)
TP-DT	any legal value (cf. 3GPP TS 23.040, sub-clause 9.2.3.13)
TP-ST	see 3GPP TS 23.040, sub-clause 9.2.3.15

3GPP TSG-T1 Meeting #10
Copenhagen, Denmark, 8-9 February, 2001

Tdoc T1-010091

CR-Form-v3

CHANGE REQUEST

⌘ **34.123-1** **CR** 052 ⌘ rev **-** ⌘ Current version: **3.2.0** ⌘

*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:	⌘	Annex B: Update of versions of core specifications
Source:	⌘	T1/Sig
Work item code:	⌘	***Date:*** ⌘ 02/02/2001
Category:	⌘	**F** ***Release:*** ⌘ R99

Use one of the following categories:
- ***F*** *(essential 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:	⌘	Update due to CRs on test case clauses
Summary of change:	⌘	Update of version number table Correction of Annex letter for revision history
Consequences if not approved:	⌘	Difficult to track which core specification versions are tested

Clauses affected:	⌘	Annex B	
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘
Other comments:	⌘		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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 B (informative): Core specification versions to which test cases relate

The table B/1 lists for each section of this specification the related core specification version on which the test cases were based. Where the test cases have been partially updated towards the next released version, but this work has not completed yet, each change request considered is listed in the final column.

Section number	Section heading	Related core specifications	Current version supported	Current change requests taken into account
6	Idle mode operations	25.304	3.53.0 (2000-06)	
		23.122	3.53.0 (2000-06)	
		31.102	3.3.0 (2000-10)	
		25.331	3.3.0 (2000-06)	
		25.133	3.42.0 (2000-06)	
		25.214	3.3.0 (2000-06)	
		25.101	3.53.01 (2000-06)	
		GSM 05.08	8.5.0 (2000-07)	
7.1	MAC	25.321	3.2.0	
7.2	RLC	25.322	3.4.0	
7.3	PDCP	25.323	3.2.0	
7.4	BMC	25.324	3.1.0	
8	Radio Resource Control (RRC)	25.331	3.5.04.1	
		04.18	9.0.0	
9	Elementary procedures of mobility management	24.008		
10	Circuit Switched Call Control (CC)	24.008	3.5.0	
11	Session Management Procedures	24.008	3.5.0	
12	Elementary procedure for Packet Switched Mobility Management	24.008	3.5.0	
13	General Tests	24.008	3.3.0	
14	Radio Bearer Services	N/A		
15	Supplementary Services	N/A		
16	Short message service (SMS)	23.040	3.5.0	
		23.041	3.3.0	
		24.011	3.54.0	
17	User Equipment features (MMI, VHE, MexE, SAT)			

Annex ~~B~~ C (informative): Change history

3GPP TSG-T1 Meeting #10 ***Tdoc T1-010106***
Copenhagen, Denmark, 8-9 February, 2001

3GPP TSG-T1/SIG Meeting #15 ***T1S-010019***
Copenhagen, Denmark, 5-7 February 2001

CR-Form-v3

CHANGE REQUEST

⌘ **34.123-1** **CR** **049** ⌘ rev ⌘ Current version: **3.2.0** ⌘

*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:	⌘	Updates to clause 8 of TS 34.123-1 version 3.2.0
Source:	⌘	Matsushita Communication Industries (MCI)
Work item code:	⌘	***Date:*** ⌘ 5 February 2001
Category:	⌘	**F** ***Release:*** ⌘ R99

Use one of the following categories:
F *(essential 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 update RRC test cases for terminal conformance testing, so as to be compatible with the latest version of RRC core specification (TS 25.331 version 3.5.0)

Summary of change: ⌘ Following a proposed change (by Ericsson) to the default RF settings for multiple cell environment specified in TS 34.108 clause 6.1, tables are added into "test procedures" sub-clauses of measurement test cases to clearly state the downlink power of each cell at various stages of test execution. As such, the "method of test" and "test requirements" clauses found in measurement test cases are revised.

This CR provides an update to the existing RRC test cases found in clause 8 of TS 34.123-1 version 3.2.0, in accordance to the following CRs to RRC core specification (TS 25.331 version 3.4.1) approved during RAN2 #16 and RAN2#17 meetings.

1. CR-544r1: IE "CFN-SFN observed time difference" in IE "Cell measured results" is renamed to "Cell synchronisation information", while the same IE in IE "Cell reporting quantities" is renamed to "Cell synchronisation information reporting indicator". At the same time, all IEs in IE "Cell reporting quantities" are appended with "reporting indicator" to explicitly show that these are flags for reporting quantities, rather than the reported quantities themselves.
2. CR-545r1: Sub-IEs in IE "Downlink information common for all radio links" are revised. IE "Timing Indication" is mandatory and IE "CFN-targetSFN frame offset" is absent if IE "Timing Indication" is set to "Maintain".
3. CR-548r1: Establishment cause and paging cause are revised.

- The enumeration of Paging cause is removed.
- The expression as “PS data call” or “CS data call” are revised. Clause 8.1.2.5, 8.1.2.7.
- Paging cause for SMS is revised as “Low Priority Signalling”.

4. CR-549: A possible deadlock can occur when all cells in the active set are forbidden to affect the reporting range. It was decided in RAN2 that the UE shall continue to update the reporting range in this case. This scenario was not previously considered in TS 34.123-1. A new test case is added to check for the UE’s conformance in this aspect. Clause 8.4.1.14 is added.

~~5.CR-571r3: RAN2 has specified some performance requirements for UE processing delay. The proposed changes related to CR-571r3 had to be discussed with T1-SIG members, as it was felt that the additional requirements for response time of uplink messages are highly performance-related in nature.~~

~~6.~~5. CR-573r1: “Flow id” concept is removed. Message routing will be performed using the CN domain identity. The content of clause 8.1.9 Signaling Connection Release Request is revised. UPLINK DIRECT TRANSFER and INITIAL DIRECT TRANSFER messages have been revised. SIGNALLING CONNECTION RELEASE REQUEST message is moved from clause 9 in TS34.108 to clause 8 in TS34.123-1.

~~7.~~6. CR-587r2: A series of changes are carried out in accordance to the modifications introduced in CR-587r1. They are listed below:

- IE “Measurement identity number” in MEASUREMENT CONTROL and MEASUREMENT REPORT messages is renamed to “Measurement identity” in all specific message contents of clause 8.4.X.
- The MEASUREMENT CONTROL FAILURE messages in clauses 8.4.1.9 and 8.4.1.10 shall have identical values for IE “RRC transaction identifier”, as that found in the respective MEASUREMENT CONTROL messages.
- IE “Measured Results on RACH” is added as an optional IE to MEASUREMENT REPORT messages. The purpose of this addition is to allow the UE to append neighbouring cell measurements to uplink RACH messages, in the case of traffic volume measurement reporting in CELL_FACH state. Since traffic volume measurements are currently not being tested, this optional IE is set to “Not Present” in all MEASUREMENT REPORT messages.
- The name of IE “Cell selection and re-selection info for SIB 11/12” is incorrect. It is corrected to “Cell selection and re-selection info”.
- IE “TGCFN” is added as a mandatory present IE into IEs “DPCH Compressed Mode Info” and “DPCH Compressed Mode Status Info”. All affected messages in the specific message content sub-clauses are updated to reflect this addition.
- IE “FACH measurement occasion info” has been re-structured. The corresponding IEs found in SIB type 11 or 12 in the specific message contents sub-clauses are updated.
- Both “Inter-frequency cell info list” and “Intra-frequency cell info list” IEs are changed to allow the possibility of removing all previously stored inter-frequency cells. The affected messages containing these IEs in the specific message content sub-clauses are updated.
- It is proposed in RAN2 that event-triggered periodic reporting be disallowed for inter-frequency type measurements. Therefore, IEs “Amount of reporting” and “Reporting interval” are removed from IE “Inter-frequency reporting criteria”. MEASUREMENT CONTROL messages

containing theseis IEs are updated.

- IE “Inter-system measurement” and its sub-IEs found in specific message contents of clause 8.4.1.9.4 are revised.
- All IEs with name containing the phrase “inter-system …” are renamed to “inter-RAT …”
- In IE “Intra-frequency measurement reporting criteria”, a new trigger condition (triggering condition 2) is defined on top of the existing condition (triggering condition 1). Affect messages are revised.
- It was decided in RAN2 that if “Measurement validity” IE is present in a message, the associated measurement task should be resumed in the state specified in “UE state” IE. Otherwise, if “Measurement validity” IE is absent in the message, the UE shall deleted the associated measurement task. Hence the sub-IE “resume/release” found in “Measurement validity” IE is no longer needed and deleted from all messages.
- IE “Reporting cell status” is rephrased and modified to include detected set. Affected messages containing this IE are revised.

8.7. CR-595r4: This CR states example of state-transition with RB control. According to this CR, two new taest -cases, RB set up from CELL-_DCH to CELL-_PCH and RB setup from CELL-_DCH to URA-_PCH are introduced. Clause 8.2.2.25 19 and 8.2.2.26 20 are added. PHYSICAL Physical Channel RECONFIGURATION Reconfiguration from CELL-_FACH to CELL-_PCH (clause 8.2.6.21), PHYSICALPhysical Channel RECONFIGURATION Reconfiguration from CELL-_FACH to URA-_PCH (clause 8.2.6.22), Transport Channel rReconfiguration from CELL-_FACH to CELL-_PCH (clause 8.2.4.22), Transport Channel rReconfiguration from CELL_-FACH to URA _PCH (clause 8.2.4.23) are removed.

9.8. CR-596r1: IE “References to other system information blocks” are removed from all instances of SIB messages in the specific message content sub-clauses. This is because RAN2 decided that only MIB and SB 1 or SB 2 contain system information scheduling information. Also, IE “SIB12 indicator” is inserted into SIB Type 11 messages. The value of this IE in SIB Type 11 is set to “FALSE” so that the UE will read only SIB Type 11 in connected state. IE “UE Timers and constants in connected mode” has been moved from SIB type 2 to SIB type 1.

10.9. CR-597r5: The following areas are revised due to this approved CR:

- In RRC Connection Establishment procedure, clause 8.1.2.9 is added to test for physical channel failure condition.
- All the definition and test cases in RRC connection re-establishment procedure are removed because these concept is moved to CELL UPDATE procedure.
- Since RRC connection re-establishment procedure has been removed, test cases that use this procedure have been revised using cell-update procedure.
- The possibility to assign PRACH and SCCPCH in UE dedicated messages for CELL_FACH, CELL_PCH and URA_PCH states has been removed since there is no Iur support. A RB control message cannot assign IE Downlink information for each radio link and PRACH info for state transition to CELL FACH, CELL PCH, URA PCH. The test-cases with transiton to CELL FACH, CELL PCH, URA PCH are revised. Clauses 8.2.1.8, 8.2.1.16, 8.2.2.8, 8.2.2.17, 8.2.3.7, 8.2.3.15, 8.2.4.7, 8.2.6.7 and 8.2.6.15.
- IE “DRX Indicator” has been changed to IE “RRC State Indicator”.
- The variables of IE “RRC State Indicator” have been totally removedal

and new variables have been added.“no DRX”, “DRX with cell updating” and “DRX with URA updating” are removed. “CELL_DCH”, “CELL_FACH”, “CELL_PCH” and “URA_PCH” are added. All message content that contains IE “DRX Indicator” are revised.

- Clarifications of when procedures end, has caused many test cases to be corrected.
- Cell update due to RB control response has been removed, hence the related test case has been removed.Clause 8.3.1.14 is removed.
- Two new causes for cell update has been added. They are “radio link failure” and “RLC unrecoverable error”. Therefore new test cases for these two causes have been added.
- T306 has been removed and all T306 timers have been replaced with T305 timers.
- In cell update, condition for invalid configuration has been added. Therefore, new clause 8.3.1.20 has been added.
- In active set update, the condition for unsupported configuration in the UE has been change and condition for invalid configuration has been added. Clause 8.3.4.4 has been ~~change~~ revised to cater for this change.
- In active set update, the condition for subsequently received active set update messages and for incompatible simultaneous reconfiguration has been removed. Clause 8.3.4.6 has therefore been removed.
- IE “URA update cause” with value of “change of URA” has been changed to “URA reselection”.
- T303 has been removed and all T303 timers have been replaced with T302 timers.
- V303 has been removed and all V303 ~~timers~~ constants have been replaced with V302 ~~timers~~constant.
- N303 has been removed and all N303 ~~timers~~ constants have been replaced with N302 ~~timers~~constants.
- In cell updating the UE shall respond~~se~~ to ~~Cell Update Confirm~~CELL UPDATE CONFIRM message on downlink CCCH with valid IE “U-RNTI” in the same way it respond~~se~~ to message sent on downlink DCCH.

~~11.~~10. CR-598: The name of IE in “Paging record” is revised.

~~12.~~11. CR-600r3: The following areas are revised due to this approved CR:

- Invalid configuration condition has been added to all RB procedures, therefore new test procedures have been added to current test cases. Clauses 8.2.1.7, 8.2.1.15, 8.2.2.6, 8.2.2.15, 8.2.3.6, 8.2.3.14, 8.2.4.6, 8.2.4.15, 8.2.5.4, 8.2.6.6, 8.2.6.14 are affected.
- Cell re-selection condition has been added to all RB procedures. Test cases concerning failure to access the assigned physical channel during the transition from CELL_FACH to CELL_DCH have been revised. Clauses 8.2.1.9, 8.2.2.9, 8.2.2.18, 8.2.3.8, 8.2.4.9, 8.2.4.17, 8.2.6.8, 8.2.6.16 are affected.
- Test cases concerning failure to revert to the old configuration after the detection of physical channel failure during the transition from CELL_DCH to CELL_FACH has been revised. Clauses 8.2.1.5, 8.2.1.13, 8.2.2.4, 8.2.2.13, 8.2.3.4, 8.2.3.12, 8.2.4.4, 8.2.4.13, 8.2.6.4, 8.2.6.12 are affected.
- IE “suspend/resume” change to “stop/continue”. Some changes in the word used are made. Test cases concerning the control of uplink transmission by RB reconfiguration messages have been revised.

Clauses 8.2.2.7, 8.2.2.16 are affected.

~~13.~~12. CR-602: Many IEs are revised.

- DRX indicator → RRC state indicator
- RRC transaction identifier is added.
- Critical spare values in downlink messages removed, conditions for creating invalid message reception test scenario have been revised. Clauses 8.1.1.7, 8.1.2.8, 8.1.3.5, 8.1.5.1, 8.1.5.4, 8.1.6.1, 8.1.6.2, 8.1.7.1, 8.1.7.2, 8.1.8.1, 8.1.8.2, 8.2.1.7, 8.2.1.15, 8.2.2.6, 8.2.2.15, 8.2.3.6, 8.2.3.14, 8.2.4.6, 8.2.4.15, 8.2.6.6, 8.2.6.14, 8.3.1.13 are affected.

~~14.~~13. CR-604r2: IE "FACH measurement occasion info" has been re-structured. The corresponding IEs found in SIB type 11 or 12 in the specific message contents sub-clauses are updated.

~~15.~~14. CR-641: Downlink outer loop control procedure has been removed. Hence, clause 8.2.9 has been removed.

The following errors are found and corrected:

- In many test cases, BCCH is stated as being broadcasted on primary CPICH, which is technically wrong. BCCH should be broadcast on primary CCPCH.
- In clause 8.3.1.X, the specific message contents of some CELL UPDATE CONFIRM messages contain an incorrect IE name - "Downlink DPCH info for one radio link". The correct name for this IE should be "Downlink information for each radio link".
- References for the initial condition in some of the test cases have been updated according to the new clause 7.4 in TS 34.108 version 3.2.0.
- All instances of "UL data transmission" for IE "Cell update cause" are renamed to "uplink data transmission". All instances of "Periodic cell update" for IE "Cell update cause" are renamed to "Periodical cell update".
- Clause 8.1.2.2 is revised such that two PRACHs are prepared in first step to let the UE randomly choose a PRACH.
- In the last meeting, it was decided that state 7 defined in clause 7.4 of TS 34.108 should be added in the initial condition of some test cases in RRC Connection Management.
- Clause 8.2.4.8 is an invalid test-case. PHYSICAL CHANNEL FAILURE can't be occurred when UE enter into CELL_-FACH state.
- In clause 8.1.1.1, UE is required to send RRC connection setup complete message to SS after step 5.
- Clause 8.4.1.10 – The condition that triggers the UE to send MEASUREMENT CONTROL FAILURE message is revised. Specifically, an unknown arbitrary 32-bits string is append to MEASUREMENT CONTROL message in step 3.
- Routing info requires unqiue identity as suggested by ESTI. In clauses 8.1.8.1 and 8.1.8.2, RB identity has been revised.

Other corrections

(a) Due to Nokia's comments:

- "Step xx" is missing from some of the specific message content sections. For the purpose of clarity, they are added.
- Clause 8.4.1.2 - Expected Sequence: An "arrow" is missing in step 4, RRC CONNECTION SETUP message.
- Pointed out by Nokia, test procedure in all the "Incompatible simultaneous reconfiguration" test cases should end with RB complete message. Clauses 8.2.1.6, 8.2.1.14, 8.2.2.5, 8.2.2.14, 8.2.3.5, 8.2.3.13, 8.2.4.5, 8.2.4.14, 8.2.6.5, 8.2.6.13 are affected.
- Following Nokia's comment, IE "Allowed Transport format combination" in TRANSPORT FORMAT COMBINATION CONTROL message has been revised. Clauses 8.2.5.1 and 8.2.5.2 are corrected.

This CR also provides an update to the existing RRC messages in Annex A of TS 34.123-1 version 3.2.0, in accordance to the following CRs to RRC core specification (TS 25.331 version 3.4.1) approved during RAN2 #16 and RAN2#17 meetings.

1. CR-542: "Logical channel max loss" IE is deleted.
2. CR-543r1: The missing IE "NAS Synchronisation Indicator" is added to IE "RAB info". The value of this IE is set to "Not Present".
3. CR-544r1: IE "CFN-SFN observed time difference" in IE "Cell measured results" is renamed to "Cell synchronisation information", while the same IE in IE "Cell reporting quantities" is renamed to "Cell synchronisation information reporting indicator". At the same time, all IEs in IE "Cell reporting quantities" are appended with "reporting indicator" to explicitly show that these are flags for reporting quantities, rather than the reported quantities themselves.
4. CR-545r1: IE "Timing indication" was previously absent in IE "Downlink DPCH info common for all RL", it is added and set to "Maintain". IE "CFN-targetSFN frame offset" is introduced as conditional (but Not Present) IE in IE "Downlink DPCH info common for all RL".
5. CR-548r1: The enumerated value "SMS" in IE "Paging cause" is changed to "Low Priority Signalling".
6. CR-554r1: The signalled range for IE "BLER Quality value" is changed. The current BLER quality value (0.00) is replaced by $10^{-6.3}$.
7. CR-549: A "CHOICE report criteria" IE is added before "Periodic reporting criteria" IE in MEASUREMENT CONTROL message.
8. CR-587r1: A series of changes are carried out in accordance to the modifications introduced in CR-587r1. They are listed below:
   - IE "Measurement identity number" in MEASUREMENT CONTROL and MEASUREMENT REPORT messages is renamed to "Measurement identity".
   - "Inter-system measurement" IE is renamed to "Inter-RAT measurement". Also, "LCS measurment" IE is renamed to "UP measurement".
9. CR-596: IE "UE Timers and constants in connected mode" is added to UTRAN MOBILITY INFORMATION message.
10. CR-597r5: Several modifications are introduced as described below:

IE “DRX Indicator” was changed to IE “RRC State Indicator”, with a set of different enumerated values.

Optional IEs “RB information to release list”, “RB information to reconfigure list”, “RB information to be affected list”, “UL Transport channel information common for all transport channels”, “Deleted UL TrCH information list”, “Added or reconfigured TrCH UL information list”, “DL Transport channel information common for all transport channels”, “Deleted DL TrCH information list”, “Added or reconfigured DL TrCH information list” and “Downlink information per radio link list” are added to CELL UPDATE CONFIRM message.

“Failure cause” and “RB timer indicator” IEs are added to CELL UPDATE message.

RRC connection re-establishment procedure is deleted, hence all related messages are removed from Annex A.

11. CR-598r1: IE “Paging Record” in PAGING TYPE 1 messages is revised.

12. CR-602: The following changes are carried out according to this CR:

    IE “RRC transaction identifier” is inserted into many messages

    IE “DRx indicator” is replaced by IE “RRC state indicator” in many messages. The appropriate value for this IE is chosen, depending on the final state the UE will reside on.

13. CR-606: Several measures are approved by RAN2 in order to reduce the size of IEs “RLC info” and “RB mapping info” transmitted in the downlink. As a result of these optimisation efforts, the corresponding changes to the default message contents need to be carried out:

    IE “Downlink RLC logical channel info” needs to be added to IE “RB mapping info”. RADIO BEARER SETUP, RADIO BEARER RELEASE and RRC CONNECTION SETUP messages are affected.

    IEs “RLC info” are modified to become IEs “CHOICE RLC info type” in RADIO BEARER SETUP message.

14. CR-609r1: Optional IE “COUNT-C activation time” is added to all uplink radio-bearer related complete messages (e.g. RADIO BEARER RECONFIGURATION COMPLETE, TRANSPORT CHANNEL RECONFIGURATION COMPLETE). The presence of this IE is conditional on whether the UE transits to CELL_DCH state and also existence of RLC-TM RB(s). Also, IE “Activation time for DPCH” in IE “Ciphering mode info” is renamed to “Ciphering activation time info”.

15. CR-615r2: IE “CHOICE RLC size list” is added into IE “RB mapping info”. All instances of this IE are set to “All” so that all the RLC sizes listed in the TFS can be used by the UE. Also, IE “Transport Format Set” is modified to include a list of logical channels so that configuration of RLC size for certain logical channels is made possible.

16. CR-625: An optional IE “RB with PDCP information list” is added into RADIO BEARER SETUP and RADIO BEARER RELEASE messages. These IEs are set to “Not Present” at the moment.

17. CR-629r1: An optional IE “Signalling Connection release indicator” is added into downlink RADIO BEARER RELEASE messages. This IE is set to “Not Present” as it’s not desired to release a RB and a signalling connection simultaneously in the test cases.

Other error corrections include:

18. IEs “CN Domain Identity” and “NAS Information” are deleted from MEASUREMENT REPORT message. At the same time, IEs “Additional Measured Results” and “Event results” were mistakenly left out of the default MEASUREMENT REPORT message are now reinstated.

19. IE “CHOICE Measurement type” was mistakenly left out of the default MEASUREMENT CONTROL message. It is now reinserted, with all the sub-IEs set to “Not Present”.

~~20.CR-XXX: IE “RRC transaction identity” is added into MEASUREMENT CONTROL and MEASUREMENT CONTROL FAILURE messages.~~

Technical error corrections:

~~21.~~20. RRC CONNECTION SETUP (Transition to CELL_FACH state): It was pointed out (by SAS on 10 Jan 01) that only RB#1 to RB#4 can be established by specifying IE “Signalling RB information to setup”. Therefore, IE “Signalling RB information to setup” for SRBs on CCCH, BCCH and PCCH are deleted.

~~22.~~21. The values of Transport channel identity, Logical channel identity and Radio Bearer identity were changed because of the revision of the channel structure as proposed by ETSI in the draft TS 34.123-3 version 1.0.0 (T1S-01001).

Consequences if not approved:	⌘	Test specifications will not be compatible with core specifications.

Clauses affected:	⌘	8.4.X, 8.4.1.14 (new), 8.4.1.9, 8.4.1.10		
Other specs affected:	⌘	[ ] Other core specifications [X] Test specifications [ ] O&M Specifications	⌘	TS 34.108 version 3.2.0
Other comments:	⌘			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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. Radio Resource Control RRC

8.1 RRC Connection Management Procedure

8.1.1 Paging

8.1.1.1 Paging for Connection in idle mode

8.1.1.1.1 Definition

8.1.1.1.2 Conformance requirement

In idle mode, UE monitors the paging occasions determined using parameters from SYSTEM INFORMATION BLOCK messages. When the UE receives a PAGING TYPE 1 message transmitted on PCCH during one of its assigned paging occasions, it should attempt to establish an RRC connection.

Reference

3GPP TS 25.331 clause 8.1.2, 3GPP TS 25.211 clause 5.3.3.7, 3GPP TS 25.304 clause 8.

8.1.1.1.3 Test purpose

To confirm that the UE establishes an RRC connection after it receives a PAGING TYPE 1 message which includes IE ”Paging Record”(UE identity) set to the IMSI of the UE.

8.1.1.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108- with a CN UE identity (set to IMSI) ,depending on the CN domain(s) supported by the UE.

Test Procedure

The SS transmits a PAGING TYPE 1 message, which includes an unmatched CN UE identity for the UE in the idle state. The UE shall not change its state. The SS transmits a PAGING TYPE 1 message, which includes a matched CN UE identity for the UE in the idle state. During transmission of PAGING TYPE 1 messages, SS selects the correct paging indicator on the PICH in order to allow the UE to respond to paging. Then the UE transmits an RRC CONNECTION REQUEST to the SS, the SS transmits an RRC CONNECTION SETUP to the UE. When the UE receives this message, the UE establishes an RRC connection and transmits an RRC CONNECTION SETUP COMPLETE message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	SYSTEM INFORMATION BLOCK TYPE 13	Transmit these messages on the BCCH, in addition to the normal BCCH transmissions. See specific message contents.
2		←	PAGING TYPE 1	The SS transmits the message, which includes an unmatched identity (incorrect IMSI), and the UE does not change its state.
3		←	PAGING TYPE 1	The SS transmits the message, which includes a matched identity (test-SIM IMSI).
4		→	RRC CONNECTION REQUEST	
5		←	RRC CONNECTION SETUP	SS assigns DPCH resources to allow UE to establish an RRC connection.
6		→	RRC CONNECTION SETUP COMPLETE	

Specific Message Contents

SYSTEM INFORMATION TYPE 13

Information Element	Value/remark
CN domain system information list	Only 1 entry
CN domain system information	
- CN domain identity	Supported Domain (PS Domain or CS Domain)
- CHOICE CN Type	Supported CN type
- CN domain specific NAS system information	Default
- CN domain specific DRX cycle length coefficient	6
UE Timers and constants in idle mode	
- T300	6000 milliseconds
- N300	3
- T312	10 sec
- N312	200

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Paging record list	Only 1 entry
Paging record	
CHOICEUsed ~~-P~~paging identity~~originator~~	CN identity~~originator~~
- Paging cause	Terminating Call with one of the supported services ~~(Conversational Call, Streaming Call, Interactive Call, Background Call, SMS)~~
- CN domain identity	Supported Domain (PS Domain or CS Domain)
- CHOICE UE Identity	IMSI
- IMSI	Set to an arbitrary octet string of length 7 bytes which is different from the IMSI value stored in the USIM card.

PAGING TYPE 1 (Step 3)

Information Element	Value/remark
Paging record list Paging record CHOICE Used ~~P~~paging identity~~originator~~ - Paging cause - CN domain identity - CHOICE UE Identity - IMSI	Only 1 entry CN identity~~originator~~ Terminating Call with one of the supported services ~~(Conversational Call, Streaming Call, Interactive Call, Background Call, SMS)~~ Supported Domain (PS Domain or CS Domain) IMSI Set to the same octet string as in the IMSI stored in the USIM card

RRC CONNECTION REQUEST (Step 4)

Information Element	**Value/remark**
Initial UE identity	Same as the IMSI stored in the USIM card, or the registered TMSI or P-TMSI
Establishment Cause	Check to see if it is set to the same value as "Paging Cause" IE in the PAGING TYPE 1 message transmitted on step 3.
Protocol Error Indicator	Check to see if it is set to FALSE
Measured results on RACH	Not checked.

8.1.1.1.5 Test requirement

After step 2 the UE shall not transmit on the uplink CCCH in order to establish a RRC connection.

After step 5 the UE shall have an RRC connection based on dedicated physical channel resources and transmit an RRC CONNECTION SETUP COMPLETE message on the uplink DCCH.

8.1.1.2 Paging for Connection in connected mode (CELL_PCH)

8.1.1.2.1 Definition

8.1.1.2.2 Conformance requirement

In CELL_PCH state, a UE can respond to a paging request from UTRAN. In this case, the UTRAN has requested to establish a connection with the UE. The UE should then attempt to perform a cell update procedure and move to CELL_FACH state in order to respond to the paging using uplink CCCH.

Reference

3GPP TS 25.331 clause 8.1.2

8.1.1.2.3 Test purpose

To confirm that the UE enters the CELL_FACH state after it receives a PAGING TYPE 1 message which indicates that the paging has originated from UTRAN. To verify that the UE performs cell update procedure after entering the CELL_FACH state.

8.1.1.2.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_PCH state (state 6-~~15~~12) as specified in clause 7.4 of TS 34.108 with a valid U-RNTI already assigned by the SS

Test Procedure

The SS transmits a PAGING TYPE 1 message, which includes an unmatched U-RNTI in CELL_PCH state. The UE does not change its state. Then SS transmits a PAGING TYPE 1 message with a matched identifier but originates from the CN instead of UTRAN. The UE should not change state after receiving this message. The SS transmits a PAGING TYPE 1 message, which includes a matched U-RNTI in the connected state. Then the UE enters the CELL_FACH state and performs the cell updating procedure.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		SYSTEM INFORMATION BLOCK TYPE 13	Transmit these messages on the BCCH, in addition to the normal BCCH transmissions. See specific message contents
2	←		PAGING TYPE 1	The SS transmits a message including an unmatched identifier. UE shall not respond to the paging.
3	←		PAGING TYPE 1	The SS transmits a message includes a matched identifier but with the originator being the CN, UE shall not respond to the paging.
4	←		PAGING TYPE 1	The SS transmits the message with the UTRAN being the originator and including the UE's assigned U-RNTI
5	→		CELL UPDATE	The UE enters the CELL_FACH state. UE performs cell updating procedure. The CELL UPDATE message shall contain the value "Cell Update Cause" set to "paging response".
6	←		CELL UPDATE CONFIRM	Use the default message specified in Annex A.

Specific Message Contents

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Paging record list	Only 1 entry
Paging record	
- CHOICE Used ~~P~~paging identity~~originator~~	UTRAN identity~~originator~~
- U-RNTI	
- SRNC Identity	Set to an arbitrary 16-bit string which is different from the SRNC identity assigned.
- S-RNTI	Set to an arbitrary 20-bit string which is different from the S-RNTI assigned.

PAGING TYPE 1 (Step 3)

Same as the PAGING TYPE 1 message as in Clause 8.1.1.1.4, with the exception that the "BCCH modification info" IE should be omitted in the message.

PAGING TYPE 1 (Step 4)

Information Element	Value/remark
Paging record list Paging record - CHOICE Used ~~P~~paging identity~~originator~~ - U-RNTI - SRNC Identity - S-RNTI	Only 1 entry UTRAN identity~~originator~~ Set to the same SRNC identity as previously assigned. Set to the same S-RNTI as previously assigned.

SYSTEM INFORMATION BLOCK TYPE 13

Use the same SYSTEM INFORMATION BLOCK TYPE 13 message as specified in Clause 8.1.1.1.4.

8.1.1.2.5 Test requirement

After step 2 the UE shall not respond to the PAGING TYPE 1 message sent in step 2.

After step 3 the UE shall not respond to the PAGING TYPE 1 message sent in step 2.

After step 4 the UE shall enter the CELL FACH state and send a CELL UPDATE message with “Cell Update Cause” IE set to “paging response”.

8.1.1.3 Paging for Connection in connected mode(URA_PCH)

8.1.1.3.1 Definition

8.1.1.3.2 Conformance requirement

This procedure is used to transmit a PAGING TYPE 1 message from the network to selected UEs in URA_PCH state using the paging control channel (PCCH). The UE listens to it and then enters the CELL_FACH state.

Reference

3GPP TS 25.331 clause 8.1.2

8.1.1.3.3 Test purpose

To confirm that the UE enters the CELL_FACH state after it receives a PAGING TYPE 1 message which includes IE ”Paging Record”(U-RNTI) for the UE and which is set to “UTRAN originator” in IE “paging originator”.

8.1.1.3.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH state (state 6-~~16~~13) as specified in clause 7.4 of TS 34.108 with a valid U-RNTI assigned by the SS.

Test Procedure

The SS transmits a PAGING TYPE 1 message, which includes an unmatched U-RNTI in URA_PCH state. The UE does not change its current state. The SS transmits a PAGING TYPE 1 message which includes a matched U-RNTI in the connected state. Then the UE listens to it and enters the CELL_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PAGING TYPE 1	The SS transmits the message that includes an unmatched identifier, then the UE does not change its state.
2	←		PAGING TYPE 1	The SS transmits the message that includes a matched identifier.
3	→		CELL UPDATE	The UE enters the CELL_FACH state.

Specific Message Contents

PAGING TYPE 1 (Step 1)

Information Element	Value/remark
Paging record list Paging record - CHOICE ~~P~~Used paging identity~~originator~~ - U-RNTI - SRNC Identity - S-RNTI	Only 1 entry UTRAN identity~~originator~~ Set to an unused SRNC identity which is different from the SRNC identity assigned. Set to an arbitrary 20-bit string which is different from the S-RNTI assigned.

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Paging record list Paging record - CHOICE Used ~~P~~paging identity~~originator~~ - U-RNTI - SRNC Identity - S-RNTI	Only 1 entry UTRAN identity~~originator~~ Set to the previously assigned SRNC identity Set to previously assigned S-RNTI

8.1.1.3.5 Test requirement

After step 1 the UE shall not respond to the paging.

After step 2 the UE shall enter the CELL FACH state, and transmit CELL UPDATE message to initiate the cell updating procedure with the paging cause set to “paging response”.

8.1.1.4 Paging for Notification in idle mode

8.1.1.4.1 Definition

8.1.1.4.2 Conformance requirement

When a system information block on the BCCH is modified, the PAGING TYPE 1 message can be sent on the PCCH to inform the UE about the changes, which are currently taking place in the idle mode. The PAGING TYPE 1 message includes the IE ”BCCH Modification Information”. Upon receiving this notification from the UTRAN, the UE shall read the relevant MIB and/or SIB(s) subsequently during idle mode.

Reference

3GPP TS 25.331 clause 8.1.1.2

8.1.1.4.3 Test purpose

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

8.1.1.4.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108 with a CN UE identity, depending on the CN domain(s) supported by the UE.

Test Procedure

The UE is in the idle state before it starts to change the SYSTEM INFORMATION BLOCK TYPE 1 or 13 messages, depending on the CN type supported by the UE. The SS transmits a PAGING TYPE 1 message on the paging occasions assigned to the UE. The message shall include the IE "BCCH Modification Information" indicating the time when the first modified master information block is available. Before the starting time, SS continuously broadcast the original MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on the BCCH mapped to BCH transport channel. SS maintains this status until the SFN which corresponds to the starting time is reached. Then it transmits the new master information block followed by the new SYSTEM INFORMATION BLOCK TYPE 1 or 13 messages. In the new SIB TYPE 1 or 13 messages, the IE "DRX Cycle Length Coefficient" is altered when compared to the original SIB TYPE 1 or 13 messages. At the next paging occasion, SS transmits a new PAGING TYPE 1 message. The message addresses the UE using its IMSI and the "paging cause" IE set to a terminating call type that is supported by the UE. The UE shall react to the PAGING TYPE 1 message and then send a RRC CONNECTION REQUEST message to SS.

Notes: For UEs supporting GSM-MAP CN type only, SYSTEM INFORMATION TYPE 1 messages are to be sent by SS in this test case. On the other hand, SS transmits SYSTEM INFORMATION TYPE 13 messages if the UE under test supports only ANSI-41 CN type.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 1 or SYSTEM INFORMATION BLOCK TYPE 13	SS transmits information on BCCH in order for UE to listen to one of the S-CCPCH physical channel, which carries PAGING TYPE 1 or 13 messages on PCCH. Relevant paging parameters are also broadcasted.
2		←	PAGING TYPE 1	SS transmits the message includes the IE "BCCH Modification Information", with the "Value Tag" changed from the "MIB Value Tag" of the current Master Information Block. Also the modification time is set to 4088 radio frame from the current SFN. SS continuously broadcast the same MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH for a period stretching 4087 frames.
3		← ←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 1 or SYSTEM INFORMATION BLOCK TYPE 13	SS starts to transmit the MIB with the "MIB Value Tag" IE different from the original setting. At the same time, SS starts to transmit the affected SIB TYPE 1 or TYPE 13 messages continuously. The value of IE "DR~~*~~X Cycle Length Coefficient" is changed in this message. SS starts to monitor the uplink RACH after approximately 4087 frames from step 2.
4		←	PAGING TYPE 1	SS starts to transmit this message continuously on the PCCH according to the new value of "DRX~~*~~ Cycle Length Coefficient", at the next paging occasion immediately following step 3.
5		→	RRC CONNECTION REQUEST	UE transmits a request due to answer to the PAGING TYPE 1 received in step 4. The IE "Establishment Cause" should be set to "Terminating Call" supported by the UE and the "Initial UE Identity" set to UE's IMSI.
6		←	RRC CONNECTION REJECT	UE shall return to idle mode after receiving this message

Specific Message Contents

SYSTEM INFORMATION BLOCK TYPE 1 (Step 1) – for UEs supporting GSM-MAP core networks

Information Element	Value/remark
References to other system information blocks	Not Present
CN common GSM-MAP NAS system information	Location Area Information (LAI)
CN domain system information list	Supports both CS and PS domains
- CN domain system information	
- CN domain identity	CS domain
- CHOICE CN Type	GSM-MAP
- CN domain specific NAS system information	Set to the same octet string as in IE "CN common GSM MAP-NAS system information"
- CN domain specific DRX cycle length coefficient	12
- CN domain system information	
- CN domain identity	PS domain
- CHOICE CN Type	GSM-MAP
- CN domain specific NAS system information	Set to the same octet string as in IE "CN common GSM MAP-NAS system information"
- CN domain specific DRX cycle length coefficient	12
UE Timers and constants in idle mode	
- T300	400 milliseconds
- N300	7
- T312	10 seconds
- N312	200
UE Timers and constants in connected mode	Not Present

SYSTEM INFORMATION BLOCK TYPE 13 (Step 1) – for UEs supporting ANSI-41 core networks

Information Element	Value/remark
References to other system information blocks	Not Present
CN domain system information list	Supports both CS and PS domains
CN domain system information	
- CN domain identity	CS
- CHOICE CN Type	ANSI-41
- CN domain specific NAS system information	
- ANSI-41 NAS System Information	
- ANSI-41 NAS Parameter	Set to an ANSI-41 user zone information
- CN domain specific DRX cycle length coefficient	12
- CN domain identity	PS
- CHOICE CN Type	ANSI-41
- CN domain specific NAS system information	
- ANSI-41 NAS System Information	
- ANSI-41 NAS Parameter	Set to an ANSI-41 user zone information
- CN domain specific DRX cycle length coefficient	12
UE Capability update requirement	Not Present

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Paging record list	Only 1 entry
Paging record	
- CHOICE Used ~~P~~paging identity~~originator~~	CN identity~~originator~~
- Paging Cause	Terminating Call with one of the supported services ~~(Conversation Call, Streaming Call, Interactive Call, Background Call, SMS)~~
- CN Domain Identity	CS Domain
- CHOICE UE Identity	IMSI
- IMSI	Set to the same octet string as in the IMSI value stored in the USIM card
BCCH modification info	
MIB Value Tag	2
BCCH Modification time	4088

MASTER INFORMATION BLOCK (Step 3)

Information Element	Value/remark
MIB Value tag	2

SYSTEM INFORMATION BLOCK TYPE 1 (Step 3) – for UEs supporting GSM-MAP core networks

Information Element	Value/remark
References to other system information blocks	Not Present
CN common GSM-MAP NAS system information	Location Area Information (LAI)
CN domain system information list	Supports both CS and PS domains
- CN domain system information	
- CN domain identity	CS domain
- CHOICE CN Type	GSM-MAP
- CN domain specific NAS system information	Set to the same octet string as in IE "CN common GSM MAP-NAS system information"
- CN domain specific DRX cycle length coefficient	6
- CN domain system information	
- CN domain identity	PS domain
- CHOICE CN Type	GSM-MAP
- CN domain specific NAS system information	Set to the same octet string as in IE "CN common GSM MAP-NAS system information"
- CN domain specific DRX cycle length coefficient	6
UE Timers and constants in idle mode	
- T300	400 milliseconds
- N300	7
- T312	10 seconds
- N312	200
UE Timers and constants in connected mode	Not Present

SYSTEM INFORMATION BLOCK TYPE 13 (Step 3) – for UEs supporting ANSI-41 core networks

Information Element	Value/remark
References to other system information blocks	Not Present
CN domain system information list	Supports both CS and PS domains
CN domain system information	
- CN domain identity	CS domain
- CHOICE CN Type	ANSI-41
- CN domain specific NAS system information	
- ANSI-41 NAS system information	
- ANSI-41 NAS Parameter	Set to an ANSI-41 user zone information
- CN domain specific DRX cycle length coefficient	6
- CN domain identity	PS domain
- CHOICE CN Type	ANSI-41
- CN domain specific NAS system information	
- ANSI-41 NAS system information	
- ANSI-41 NAS Parameter	Set to an ANSI-41 user zone information
- CN domain specific DRX cycle length coefficient	6

PAGING TYPE 1 (Step 4)

Information Element	Value/remark
Paging record list	Only 1 entry
Paging record	
- CHOICE Used ~~P~~paging identity~~originator~~	CN identity~~originator~~
- Paging Cause	Terminating Call with one of the supported service ~~(Conversation Call, Streaming Call, Interactive Call, Background Call, SMS)~~
- CN Domain Identity	CS Domain
- CHOICE UE Identity	IMSI
- IMSI	Set to the same octet string as in the IMSI value stored in the USIM card

RRC CONNECTION REJECT (Step 6)

Information Element	Value/remark
Initial UE identity	
- CHOICE UE id type	IMSI
- IMSI	Set to the same octet string as in the IMSI value stored in the USIM card
Rejection cause	Unspecified
Wait time	0
Redirection info	Not Present

8.1.1.4.5 Test requirement

After step 5 the UE shall transmit RRC CONNECTION REQUEST message in response to the PAGING TYPE 1 messages sent in step 4.

8.1.1.5 Paging for Notification in connected mode (CELL_PCH)

8.1.1.5.1 Definition

8.1.1.5.2 Conformance requirement

When a system information block on the BCCH is modified, the message PAGING TYPE 1 can be sent on the PCCH to inform the UE about this change in the CELL_PCH state. This message includes the IE “BCCH Modification Information”. Upon receiving this notification from the UTRAN, the UE shall read the relevant MIB and/or SIB(s) subsequently while in CELL_PCH state.

Reference

3GPP TS 25.331 clause 8.1.1.2

8.1.1.5.3 Test purpose

To confirm that the UE enters the CELL_FACH state, checks the new value tag of the master information block, and read the SYSTEM INFORMATION messages after it receives a PAGING TYPE 1 message which includes the IE ”BCCH Modification Information”

8.1.1.5.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_PCH state (state 6-~~15~~12) as specified in clause 7.4 of TS 34.108 with valid a U-RNTI assigned to it.

Test Procedure

Identical test steps 1 to 5 in Clause 8.1.1.4 are applied to this test. However, the PAGING TYPE 1 messages used in step 2 and step 4 are altered. The changes are indicated in the specific message content paragraph under this clause. At step 6, UE shall send the CELL UPDATE message indicating the “cell update cause” to be “paging response”. SS then replies with a CELL UPDATE CONFIRM message to allow the UE to transit to CELL_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 1 or SYSTEM INFORMATION BLOCK TYPE 13	SS transmits information on BCCH in order for UE to listen to one of the S-CCPCH physical channel, which carries PAGING TYPE 1 or 13 messages on PCCH. Relevant paging parameters are also broadcasted.
2		←	PAGING TYPE 1	SS transmits the paging message which comprises IE "BCCH Modification Information", with the "Value Tag" changed from the "MIB Value Tag" of the current Master Information Block. Also the modification time is set to 4088 radio frame from the current SFN. SS continuously broadcast the same MASTER INFORMATION BLOCK and various types of SYSTEM INFORMATION BLOCK on BCCH for a period stretching 4087 frames.
3		← ←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 1 or SYSTEM INFORMATION BLOCK TYPE 13	SS starts to transmit the MIB with the "MIB Value Tag" IE different from the original setting. At the same time, SS starts to transmit the affected SIB TYPE 1 or TYPE 13 messages continuously. The value of IE "DRX~~*~~ Cycle Length Coefficient" is changed in this message. SS starts to monitor the uplink RACH after approximately 4087 SFN from step 2.
4		←	PAGING TYPE 1	SS transmits this message continuously on the PCCH according to the new value of "DRX~~*~~ Cycle Length Coefficient", at the next paging occasion immediately following step 3. This message shall page the UE with its U-RNTI and setting the UTRAN as the paging originator.
5		→	CELL UPDATE	The IE "Cell Update Cause" should be set to "Paging Response" and the IE "U-RNTI" shall be similar to the UE's U-RNTI value. The "Protocol Error Indicator" IE shall be set to FALSE.
6		←	CELL UPDATE CONFIRM	UE shall transit to CELL_FACH state after receiving this message.

Specific Message Contents

SYSTEM INFORMATION BLOCK TYPE 1 or TYPE 13 (Step 1)

The content of this message is the same in the message used in step 1 specified in Clause 8.1.1.4.3.

PAGING TYPE 1 (Step 2)

Information Element	Value/remark
Paging record list	Only 1 entry
Paging record	
- CHOICE Used ~~P~~paging identity~~originator~~	UTRAN identity~~originator~~
- U-RNTI	Equal to the U-RNTI assigned earlier.
- SRNC Identity	
- S-RNTI	
BCCH modification info	
- MIB Value Tag	2
- BCCH Modification time	4088

MASTER INFORMATION BLOCK (Step 3) and

SYSTEM INFORMATION BLOCK TYPE 1 or TYPE 13 (Step 3)

The content of these messages is the same in the message used in step 3 specified in Clause 8.1.1.4.4.

PAGING TYPE 1 (Step 4)

Information Element	Value/remark
Paging record list	Only 1 entry
Paging record	
- CHOICE Used ~~P~~paging identity~~originator~~	UTRAN identity~~originator~~
- U-RNTI	Equal to the U-RNTI assigned earlier.
- SRNC Identity	Same as the current SRNC allocated
- S-RNTI	Same as the current S-RNTI allocated
BCCH modification info	Not Present

CELL UPDATE CONFIRM (Step 6)

Information Element	Value/remark
~~DRX Indicator~~RRC State Indicator	~~DRx with Cell Updating~~CELL_FACH

8.1.1.5.5 Test requirement

After step 5 the UE shall transmit a CELL UPDATE message with “cell update cause” IE set to “paging response”. Upon receiving CELL UPDATE CONFIRM message, the UE shall enter the CELL_FACH state.

8.1.1.6 Paging for Notification in connected mode (URA_PCH)

8.1.1.6.1 Definition

8.1.1.6.2 Conformance requirement

When a system information block on the BCCH is modified, the UTRAN can send a PAGING TYPE 1 message on the PCCH to inform UE about the changes while the UE is in the URA_PCH state. This message includes the IE ”BCCH Modification Information”. When receiving this message in URA_PCH state, the UE shall read the relevant MIB and/or SIB(s).

Reference

3GPP TS 25.331 clause 8.1.1.2

8.1.1.6.3 Test purpose

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

8.1.1.6.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH state (state 6-~~16~~13) as specified in clause 7.4 of TS 34.108 with a valid U-RNTI assigned.

Test Procedure

The UE is in the URA_PCH state before the SS starts changing SYSTEM INFORMATION BLOCK messages. SS modifies its SYSTEM INFORMATION and updates the "value tag" of both the SYSTEM INFORMATION BLOCK TYPE 1 and of the MASTER INFORMATION BLOCK. After a while, the SS transmits a PAGING TYPE 1 message, which includes the IE "BCCH Modification Information". The UE enters the CELL_FACH state and reads the modified SYSTEM INFORMATION BLOCK. The UE shall act according to the modified message. In this test case, the UE shall adjust it paging occasions and read the new PCCH blocks newly assigned to it under DRX mode.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	MASTER INFORMATION BLOCK SYSTEM INFORMATION	The SS changes the SYSTEM INFORMATION when the UE is in the connected state (URA_PCH).
2		←	PAGING TYPE 1	SS transmits the message includes the IE "BCCH Modification Information".
3				The UE enters the CELL_FACH state and reads the SYSTEM INFORMATION and then the UE follows this message.

Specific Message Contents

None

8.1.1.6.5 Test requirement

After step 2 the UE shall enter the CELL_FACH state and read the SYSTEM INFORMATION message and follow it.

8.1.1.7 Paging for Connection in connected mode (CELL_DCH)

8.1.1.7.1 Definition

8.1.1.7.2 Conformance requirement

This procedure is used to transmit a PAGING TYPE 2 message from the network to selected UEs in CELL_DCH state using the dedicated control channel (DCCH). The UE listens to it and responds to this message accordingly.

Reference

3GPP TS 25.331 clause 8.1.11

8.1.1.7.3 Test purpose

To confirm that the UE responds this message after it receives a PAGING TYPE2 message which includes IE ”Paging Record Type Identifier” for the UE.

8.1.1.7.4 Method of test

Initial Condition

System Simulator: 1 cell.

UE: CELL_DCH state (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108, depending on the CN domain(s) supported by the UE, after executing a location registration or attach procedure followed by the release of the TMSI of P-TMSI allocated.

Test Procedure

The SS transmits a PAGING TYPE 2 message which includes an unmatched Paging Record Type Identifier in CELL_DCH state. The UE shall not respond to this message. SS pages the UE again, this time with a matched Paging Record Type Identifier but with the IE “paging cause” set to an invalid value which is not definedone of the spare values. UE shall respond by transmitting a RRC STATUS message on the DCCH using RLC-AM mode. Finally, SS transmits a PAGING TYPE 2 message, which includes a matched Paging Record Type Identifier. Then the UE shall responds to this message by the transmission of an upper layer message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PAGING TYPE 2	The SS transmits the message includes an unmatched identifier, then the UE does not respond.
2	←		PAGING TYPE 2	The SS transmits the message includes a matched identifier. In the paging message, IE “paging cause” is set to invalid valueone of the spare values.
3	→		RRC STATUS	The UE shall respond by reporting the protocol error to the SS.
4	←		PAGING TYPE 2	SS pages the UE with a matched identifier and with a valid “paging cause” IE.
5	→		UPLINK DIRECT TRANSFER	The UE shall respond to the paging message sent in step 4.

Specific Message Contents

PAGING TYPE 2 (Step 1)

Information Element	Value/remark
Paging cause CN domain identity Paging Record record Type type Identifieridentifier	Terminating Call supported by the UE Domain supported by the UE Set to “TMSI” or “P-TMSI” allocated during the execution of location registration or attach procedure respectively

PAGING TYPE 2 (Step 2)

Information Element	Value/remark
Paging cause ~~CN domain identity~~ ~~Paging Record Type Identifier~~	invalid value which is not defined~~Use one of the spare values~~ ~~Domain supported by the UE~~ ~~Set to "IMSI (GSM-MAP)" for UEs supporting GSM-MAP core network type or "IMSI (DS-41)" for UEs supporting ANSI-41 core network type.~~

RRC STATUS (Step 3)

Information Element	Value/remark
Protocol error information	Checked to see if set to "Information element value not comprehended"

PAGING TYPE 2 (Step 4)

Information Element	Values/Remarks
Paging cause CN domain identity Paging ~~Record~~ record ~~Type~~ type ~~Identifier~~identifier	Terminating Call supported by the UE Domain supported by the UE Set to "IMSI (GSM-MAP)" for UEs supporting GSM-MAP core network type or "IMSI (DS-41)" for UEs supporting ANSI-41 core network type.

UPLINK DIRECT TRANSFER (Step 5)

Only the message type IE for this message is checked.

8.1.1.7.5 Test requirement

After step 1 the UE shall not respond to the paging message on the DCCH.

After step 2 the UE shall respond to the paging message by transmitting RRC STATUS on the DCCH, stating the protocol error as "Information element value not comprehended".

After step 4 the UE shall respond to the paging message by transmitting an UPLINK DIRECT TRANSFER message on the uplink DCCH.

8.1.1.8 Paging for Connection in connected mode (CELL_FACH)

8.1.1.8.1 Definition

8.1.1.8.2 Conformance requirement

This procedure is used to transmit a PAGING TYPE 2 message from the network to selected UEs in CELL_FACH state using the dedicated control channel (DCCH). The UE shall listen to it and responds to this message accordingly.

Reference

3GPP TS 25.331 clause 8.1.11

8.1.1.8.3 Test purpose

To confirm that the UE responds to a PAGING TYPE 2 message, which includes a matching value for IE "Paging Record Type Identifier".

8.1.1.8.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The SS transmits a PAGING TYPE 2 message, which includes an unmatched Paging Record Type Identifier in CELL_FACH state. The UE shall not respond to this message. The SS transmits a PAGING TYPE 2 message, which includes a matched Paging Record Type Identifier. Then the UE shall respond by transmitting an upper layer message to answer this page.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PAGING TYPE 2	The SS transmits the message includes an unmatched identifier, then the UE does not respond.
2	←		PAGING TYPE 2	The SS transmits the message includes a matched identifier.
3	→		UPLINK DIRECT TRANSFER	The UE responds by sending an upper layer message.

Specific Message Content

PAGING TYPE 2 (Step 1)

Use the same message content as in step 1 from 8.1.1.7.4

PAGING TYPE 2 (Step 2)

Use the same message content as in step 4 from 8.1.1.7.4

8.1.1.8.5 Test requirement

After step 1 the UE shall not respond.

After step 2 the UE shall respond to the second PAGING TYPE 2 message by transmitting an UPLINK DIRECT TRANSFER message on the uplink DCCH.

8.1.2 RRC Connection Establishment

8.1.2.1 RRC Connection Establishment in CELL_DCH state: Success

8.1.2.1.1 Definition

8.1.2.1.2 Conformance requirement

1. The RRC connection establishment is initiated by the UE, which leaves the idle mode and transmits an RRC CONNECTION REQUEST message. This message shall include the IE “Initial UE identity” and is to be transmitted on the uplink CCCH.

2. After the UE receives an RRC CONNECTION SETUP message which includes the same value of the IE “initial UE identity”, radio resource parameters (i.e. Signalling link type and multiplexing info) and U-RNTI, UE then configures

the layer 2 and layer 1 processing so as to support the DCCH according to the radio resource parameters specified. The procedure successfully ends when the network receives an RRC CONNECTION SETUP COMPLETE message on the uplink DCCH.

Reference

3GPP TS 25.331 clause 8.1.3

8.1.2.1.3 Test purpose

To confirm that the UE leaves the Idle Mode and correctly establishes a signalling link on the DCCH.

8.1.2.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by attempting to make an outgoing call. After SS receives this message, it assigns the necessary radio resources and U-RNTI to be used by the UE. SS then transmits an RRC CONNECTION SETUP message containing an IE “Initial UE Identity” that does not match the IE “Initial UE Identity” in the most recent RRC CONNECTION REQUEST message sent by the UE. UE receives the RRC CONNECTION SETUP message within timer T300 but discards it due to the IE “Initial UE Identity” mismatch. UE shall wait for timer T300 to time out before re-transmitting a RRC CONNECTION REQUEST message to the SS. SS again assigns the necessary radio resources and U-RNTI. SS then follows by transmitting a RRC CONNECTION SETUP message containing an IE “Initial UE Identity” that matches the IE “Initial UE Identity” in the most recent RRC CONNECTION REQUEST sent by the UE. SS then waits for the UE to transmit an RRC CONNECTION SETUP COMPLETE message on the DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	→		RRC CONNECTION REQUEST	By outgoing call operation
2	←		RRC CONNECTION SETUP	This message is not addressed to the UE.
3	→		RRC CONNECTION REQUEST	UE shall re-transmit the request message again after a time out of T300 from step 1.
4	←		RRC CONNECTION SETUP	
5				The UE configures the layer 2 and layer 1.
6	→		RRC CONNECTION SETUP COMPLETE	

Specific Message Content

RRC CONNECTION SETUP (Step 2)

Information Element	Value/remark
Initial UE Identity CHOICE UE id type IMSI	 IMSI Set to an arbitrary octet string of length 7 which different from the IMSI value stored in the USIM card.

8.1.2.1.5 Test requirement

After step 2 the UE shall re-transmit the RRC CONNECTION REQUEST message again in order to continue the RRC connection establishment procedure.

After step 6 the UE shall establish an RRC connection and continue the procedure of the outgoing call on the DCCH.

8.1.2.2 RRC Connection Establishment: Success after T300 timeout

8.1.2.2.1 Definition

8.1.2.2.2 Conformance requirement

1. The RRC connection establishment is initiated by the UE, which leaves the idle mode. The UE shall transmit an RRC CONNECTION REQUEST message which includes the IE "Initial UE identity". This message shall be sent on the uplink CCCH.

When there are more than one PRACHs available, the UE shall select one PRACH randomly and transmit an RRC CONNECTION REQUEST message by use of selected PRACH.

2. In the case of a failure to establish the RRC connection at the expiry of timer T300 ,the UE retries to establish the RRC connection until V300 is greater than N300

When the UE receives a RRC CONNECTION SETUP message, which contains a protocol error and causing the internal variable PROTOCOL_ERROR_REJECT set to TRUE, it shall perform the appropriate error handling procedure.

Reference

3GPP TS 25.331 clause 8.1.3

8.1.2.2.3 Test purpose

To confirm that the UE retries to establish the RRC connection until V300 is greater than N300 after the expiry of timer T300 when the SS transmits no response for an RRC CONNECTION REQUEST message.

8.1.2.2.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

Before the test starts, an internal counter K in SS is initialized to a value = 1. Following this, the UE shall transmit an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by use of selected PRACH from the available PRACH No.1 and PRACH No.2, after the operator attempts to make an outgoing call. SS ignores this message, increments K every time such a message is received and waits for T300 timer to expire. This cycle is repeated until K reaches N300. When K is equal to N300, the SS transmits the RRC CONNECTION SETUP message specified in step ~~5~~ 6 to the UE and wait until T300 expires. The UE shall send another RRC CONNECTION REQUEST message on the uplink CCCH. SS verifies that the UE does not access the radio resource allocated in step ~~5~~6. After confirming this restriction is observed, SS replies with a valid RRC CONNECTION SETUP message. The UE shall then acknowledge the establishment of RRC connection by sending the RRC CONNECTION SETUP COMPLETE message on uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		SYSTEM INFORMATION BLOCK TYPE 5	Transmit these messages on the BCCH. See specific message contents.
12				SS initializes counter K to 1. Operator is asked to make an outgoing call and SS starts to wait for RRC CONNECTION REQUEST on uplink CCCH.
23	→		RRC CONNECTION REQUEST	
34				SS checks to see if K is equal to N300. If so, goes to step 56. Else, continues to execute step 45.
45				SS increments K. The next step is step 23.
56	←		RRC CONNECTION SETUP	The message contains a protocol error, see specific message content. SS waits for T300 to expire again.
67	→		RRC CONNECTION REQUEST	UE shall not access the radio resource indicated in RRC CONNECTION SETUP message sent in step 56.
78	←		RRC CONNECTION SETUP	This is a legal message. See the clause 6.19 in TS 34.108 on default message content for RRC.
89				The UE configures the layer 1 and layer 2.
910	→		RRC CONNECTION SETUP COMPLETE	

Specific Message Contents

SYSTEM INFORMATION TYPE 5 (Step 1)

- PRACH system information	2PRACHs
- PRACH info (PRACH No.1)	
- CHOICE mode	FDD
- Available Signature	'0000 0000 1111 1111'B
- Available SF	Reference to clause 6.10 Parameter Set
- Preamble scrambling code number	0
- Puncturing Limit	Reference to clause 6.10 Parameter Set
- Available Sub Channel number	'1111 1111 1111'B
- Transport Channel Identity	15
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	(This IE is repeated for TFI number)
- RLC size	Reference to clause 6.10 Parameter Set
- Number of TB and TTI List	Reference to clause 6.10 Parameter Set
- Number of Tranport blocks	Reference to clause 6.10 Parameter Set
- CHOICE Mode	FDD
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	Reference to clause 6.10 Parameter Set
- Type of channel coding	Reference to clause 6.10 Parameter Set
- Coding Rate	Reference to clause 6.10 Parameter Set
- Rate matching attribute	Reference to clause 6.10 Parameter Set
- CRC size	Reference to clause 6.10 Parameter Set
- RACH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- PRACH partitioning	
- Access Service Class	
- ASC Settings	
- Available signature Start Index	0 (ASC#0)
- Available signature End Index	7 (ASC#0)
- Assigned Sub-channel Number	'1111'B
- Available signature Start Index	0 (ASC#1)
- Available signature End Index	7 (ASC#1)
- Assigned Sub-channel Number	'1111'B
- Available signature Start Index	0 (ASC#2)
- Available signature End Index	7 (ASC#2)
- Assigned Sub-channel Number	'1111'B
- Available signature Start Index	0 (ASC#3)
- Available signature End Index	7 (ASC#3)
- Assigned Sub-channel Number	'1111'B
- Available signature Start Index	0 (ASC#4)
- Available signature End Index	7 (ASC#4)
- Assigned Sub-channel Number	'1111'B
- Available signature Start Index	0 (ASC#5)
- Available signature End Index	7 (ASC#5)
- Assigned Sub-channel Number	'1111'B
- Available signature Start Index	0 (ASC#6)
- Available signature End Index	7 (ASC#6)

- Assigned Sub-channel Number	‘1111’B
- Available signature Start Index	0 (ASC#7)
- Available signature End Index	7 (ASC#7)
- Assigned Sub-channel Number	‘1111’B
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- Primary CPICH DL TX power	Reference to clause 6.10 Parameter Set
- Constant value	Reference to clause 6.10 Parameter Set
- PRACH power offset	
- Power Ramp Step	3dB
- Preamble Retrans Max	2
- RACH transmission parameters	
- Mmax	2
- NB01min	3 slot
- NB01max	10 slot
- AICH info	
- Channelisation code	SF-1(SF is reference to clause 6.10 Parameter Set)
- STTD indicator	FALSE
- AICH transmission timing	0
- PRACH info (PRACH No.2)	
- CHOICE mode	FDD
- Available Signature	‘0000 0000 1111 1111’B
- Available SF	Reference to clause 6.10 Parameter Set
- Preamble scrambling code number	1
- Puncturing Limit	Reference to clause 6.10 Parameter Set
- Available Sub Channel number	‘1111 1111 1111’B
- Transport Channel Identity	16
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport format information	(This IE is repeated for TFI number)
- RLC size	Reference to clause 6.10 Parameter Set
- Number of TB and TTI List	Reference to clause 6.10 Parameter Set
- Number of Tranport blocks	Reference to clause 6.10 Parameter Set
- CHOICE Mode	FDD
- CHOICE Logical Channel List	ALL
- Semi-static Transport Format information	
- Transmission time interval	Reference to clause 6.10 Parameter Set
- Type of channel coding	Reference to clause 6.10 Parameter Set
- Coding Rate	Reference to clause 6.10 Parameter Set
- Rate matching attribute	Reference to clause 6.10 Parameter Set
- CRC size	Reference to clause 6.10 Parameter Set
- RACH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB

- PRACH partitioning	
- Access Service Class	
- ASC Settings	
- Available signature Start Index	0 (ASC#0)
- Available signature End Index	7 (ASC#0)
- Assigned Sub-channel Number	'1111'B
- Available signature Start Index	0 (ASC#1)
- Available signature End Index	7 (ASC#1)
- Assigned Sub-channel Number	'1111'B
- Available signature Start Index	0 (ASC#2)
- Available signature End Index	7 (ASC#2)
- Assigned Sub-channel Number	'1111'B
- Available signature Start Index	0 (ASC#3)
- Available signature End Index	7 (ASC#3)
- Assigned Sub-channel Number	'1111'B
- Available signature Start Index	0 (ASC#4)
- Available signature End Index	7 (ASC#4)
- Assigned Sub-channel Number	'1111'B
- Available signature Start Index	0 (ASC#5)
- Available signature End Index	7 (ASC#5)
- Assigned Sub-channel Number	'1111'B
- Available signature Start Index	0 (ASC#6)
- Available signature End Index	7 (ASC#6)
- Assigned Sub-channel Number	'1111'B
- Available signature Start Index	0 (ASC#7)
- Available signature End Index	7 (ASC#7)
- Assigned Sub-channel Number	'1111'B
- Persistence scaling factor	
- Persistence scaling factor	0.9 (for ASC#2)
- Persistence scaling factor	0.9 (for ASC#3)
- Persistence scaling factor	0.9 (for ASC#4)
- Persistence scaling factor	0.9 (for ASC#5)
- Persistence scaling factor	0.9 (for ASC#6)
- Persistence scaling factor	0.9 (for ASC#7)
- AC-to-ASC mapping table	
- AC-to-ASC mapping	6 (AC0-9)
- AC-to-ASC mapping	5 (AC10)
- AC-to-ASC mapping	4 (AC11)
- AC-to-ASC mapping	3 (AC12)
- AC-to-ASC mapping	2 (AC13)
- AC-to-ASC mapping	1 (AC14)
- AC-to-ASC mapping	0 (AC15)
- Primary CPICH DL TX power	Reference to clause 6.10 Parameter Set
- Constant value	Reference to clause 6.10 Parameter Set
- PRACH power offset	
- Power Ramp Step	3dB
- Preamble Retrans Max	2
- RACH transmission parameters	
- Mmax	2
- NB01min	3 slot
- NB01max	10 slot
- AICH info	
- Channelisation code	SF-1(SF is reference to clause 6.10 Parameter Set)
- STTD indicator	FALSE
- AICH transmission timing	0

RRC CONNECTION SETUP (Step ~~5~~6)

Information Element	Value/remark
RRC State Indicator ~~Uplink Radio Resource~~ ~~CHOICE *channel requirement*~~	Not Present ~~Neither PRACH Info (for RACH) nor Uplink DPCH info is chosen. One of the spare value is used.~~

8.1.2.2.5 Test requirement

After step 2 the UE shall select either PRACH No.1 or PRACH No.2 and transmit an RRC CONNECTION REQUEST message.

After step ~~5~~ 6 the UE shall re-send another RRC CONNECTION REQUEST message and not access any radio resources specified in RRC CONNECTION SETUP message sent in step ~~5~~6.

After step ~~8~~ 9 the UE shall transmit an RRC CONNECTION SETUP COMPLETE message and establish an RRC connection on the DCCH logical channel.

8.1.2.3 RRC Connection Establishment: Failure (V300 is greater than N300)

8.1.2.3.1 Definition

8.1.2.3.2 Conformance requirement

1. The RRC connection establishment is initiated by the UE, which leaves the idle mode and transmits an RRC CONNECTION REQUEST message. This message shall include the IE "Initial UE identity" on the uplink CCCH.

2. In the case of a failure to establish the RRC connection after (N300+1) attempts, the UE goes back to idle mode.

Reference

3GPP TS 25.331 clause 8.1.3

8.1.2.3.3 Test purpose

To confirm that the UE stops retrying to establish the RRC connection if V300 is greater than N300 and goes back to idle mode.

8.1.2.3.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

Before the test starts, SS initializes an internal counter K to 1. The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by an outgoing call operation. SS shall not respond to any RRC CONNECTION REQUEST message, instead the counter K is increased by 1 every time such a message is received. To arrive at the verdict, the SS checks that a total of (N300+1) such messages are received.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS initializes counter K to 1and then prompts the operator to make an outgoing call.
2	→		RRC CONNECTION REQUEST	
3				SS increments K by 1.
4				If K is greater than N300, goes to step 5 else proceed to step 2.
5				SS monitor the uplink CCCH for a time period enough for UE to goes back to normal service. The exact amount of time to wait shall be derived from TS related to cell selection. If any uplink transmission is detected, the test fails.

Specific Message Contents

None

8.1.2.3.5 Test requirement

After step 5, counter K shall be equals to (N300+1) and there shall be no uplink transmission in the monitoring period specified in step 5.

8.1.2.4 RRC Connection Establishment: Reject ("wait time" is not equal to 0)

8.1.2.4.1 Definition

8.1.2.4.2 Conformance requirement

1. The RRC connection establishment is initiated by the UE, which leaves the idle mode and transmits an RRC CONNECTION REQUEST message . This message shall include the IE "Initial UE identity" and is to be sent on the uplink CCCH.

2. After the UE receives an RRC CONNECTION REJECT message which includes IE "wait time" not set to 0, and neither IE "frequency info" nor IE "system info" is present, the UE shall wait for a period specified in the IE "wait time". Thereafter re-transmit an RRC CONNECTION REQUEST message to attempt to establish the RRC connection again. However, either IE "frequency info" or IE "system info" is available in the message, the UE shall attempt to perform cell reselection using these information.

Reference

3GPP TS 25.331 clause 8.1.3

8.1.2.4.3 Test purpose

To confirm that the UE retries to establish the RRC connection after the "wait time" if the UE receives an RRC CONNECTION REJECT message which includes the IE "wait time" not set to 0.

To confirm that the UE perform a cell reselection when receiving an RRC CONNECTION REJECT message, containing relevant frequency information of the target cell to be re-selected.

8.1.2.4.4 Method of test

Initial Condition

System Simulator: 2 cells – both cell 1 and cell 2 are active and suitable for camping, but cell 1 is transmitted using a larger power. Cell 1 and cell 2 are being transmitted from different 2 UARFCNs.

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by an outgoing call operation in cell 1. SS rejects the first request by transmitting an RRC CONNECTION REJECT message which indicates a non-zero wait time. In this message, frequency information for cell 2 is available. SS then waits for RRC CONNECTION REQUEST message on the uplink CCCH of cell 2. SS will also monitor the uplink of cell 1 simultaneously to ensure that all transmission activities from cell 1 have ceased. When the UE has successfully camp onto cell 2, it shall send an RRC CONNECTION REQUEST with the same establishment cause as its previous attempt in cell 1. SS responds with an RRC CONNECTION REJECT message, indicating a non-zero "wait time" and omitting the IE "Redirection Info". The UE shall observe the wait time period indicated. After the wait time has elapsed, the UE shall re-transmit RRC CONNECTION REEQUEST again. Finally, SS transmits an RRC CONNECTION SETUP message to establish an RRC connection with the UE, and the UE replies with an RRC CONNECTION SETUP COMPLETE message and enters CELL_DCH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		→	RRC CONNECTION REQUEST	SS prompts the operator to make an outgoing call in cell 1.
2		←	RRC CONNECTION REJECT	This message shall includes the IE "wait time" set to 15 seconds and IE "frequency info" set to the UARFCN of cell 2.
3				SS waits for a period of time sufficient for UE to reselect to cell 2. At the same time, it monitors the uplink of cell 1 to make sure that all transmissions have ceased.
4		→	RRC CONNECTION REQUEST	UE shall attempt to re-start an RRC connection establishment procedure in cell 2. The establishment cause shall remain unchanged.
5		←	RRC CONNECTION REJECT	This message shall includes the IE "wait time" set to 15 seconds, but with IE "Redirection Info" absent.
6		→	RRC CONNECTION REQUEST	SS waits until the duration specified in IE "wait time" has elapsed and then listens to the uplink CCCH for a second RRC CONNECTION REQUEST message.
7		←	RRC CONNECTION SETUP	SS sends the message to UE, to setup an RRC connection with the UE.
8				The UE shall configure the layer 2 and layer 1 in order to access the uplink and downlink DCCH assigned.
9		→	RRC CONNECTION SETUP COMPLETE	

Specific Message Contents

RRC CONNECTION REQUEST (Step 1)

Information Element	Value/remark
Initial UE Identity	Must be equal to U-RNTI assigned previously
Initial UE Capability	Must be compatible with UE settings in TS25.926
Establishment Cause	Must be “Originating Call”

RRC CONNECTION REJECT (Step 2)

Information Element	Value/remark
Wait time	15 seconds
Redirection Info	
Frequency Info	
UARFCN uplink (Nu)	Set to a different UARFCN from uplink carrier of cell 1
UARFCN uplink (Nd)	Not present – assuming a duplex distance of 190MHz.

RRC CONNECTION REQUEST (Step 4 and step 6)

Same requirement as in step 1.

RRC CONNECTION REJECT (Step 5)

Information Element	Value/remark
Wait time	15 seconds
Redirection Info	Not present

8.1.2.4.5 Test requirement

After step 3 the UE shall have successfully re-selected to cell 2, using information transmitted in IE “frequency info” of RRC CONNECTION REJECT message. UE shall trigger the start of RRC connection establishment by transmitting RRC CONNECTION REQUEST. The establishment cause shall be similar to the message sent in step 1.

After step 5 the UE shall observe the period specified in IE “wait time” of an RRC CONNECTION REJECT message and not transmit an RRC CONNECTION REQUEST message in this period.

After step 7 the UE shall transmit an RRC CONNECTION SETUP COMPLETE message to SS on uplink DCCH and then establish an RRC connection.

8.1.2.5 RRC Connection Establishment: Reject (“wait time” is not equal to 0 and V300 is greater than N300)

8.1.2.5.1 Definition

8.1.2.5.2 Conformance requirement

The RRC connection establishment is initiated by the UE, which leaves the idle mode and transmits an RRC CONNECTION REQUEST message . This message shall include the IE “Initial UE identity” and is to be sent on the uplink CCCH.

After the UE receives an RRC CONNECTION REJECT message which includes IE “wait time” not set to 0, and neither IE “frequency info” nor IE “system info” is present, the UE shall wait for a period specified in the IE “wait time”. Thereafter it re-transmits an RRC CONNECTION REQUEST message to attempt to establish the RRC connection again. In the case of a failure to establish the RRC connection after (N300+1) attempts, the UE goes back to idle mode.

Reference

3GPP TS 25.331 clause 8.1.3

8.1.2.5.3 Test purpose

To confirm that the UE retries to establish the RRC connection after the “wait time” if the UE receives an RRC CONNECTION REJECT message which specifies a non-zero IE ”wait time”.

To confirm that the UE stops retrying to establish the RRC connection if V300 is greater than N300 and goes back to idle mode.

8.1.2.5.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

Before the test starts, SS initializes an internal counter K to 0. The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH, triggered by an outgoing data call operation. SS rejects all requests by transmitting an RRC CONNECTION REJECT message which indicates a non-zero wait time and the counter K is increased by 1 every time such a message is received. To arrive at the verdict, the SS checks that a total of (N300+1) such messages are received.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS initializes counter K to 0 and then prompts the operator to make an outgoing data call.
2	→		RRC CONNECTION REQUEST	Shall be sent on CCCH and contain the correct establishment cause.
3	←		RRC CONNECTION REJECT	This message includes the IE “wait time” set to 15 seconds.
4				SS increments K by 1.
5				If K is greater than N300, goes to step 6. Else SS waits for 15 sec before proceeding to step 2.
6				SS monitor the uplink CCCH for a time period enough for UE to goes back to normal service. The exact amount of time to wait shall be derived from TS related to cell selection. If any uplink transmission is detected, the test fails.

Specific Message Contents

RRC CONNECTION REQUEST (Step 2)

Information Element	Value/remark
Initial UE Identity	Must be equal to U-RNTI assigned previously
Initial UE Capability	Must be compatible with UE settings in TR25.926
Establishment Cause	Must be "Originating ~~CS Data~~ Call" ~~or "Originating PS Data Call"~~

RRC CONNECTION REJECT (Step 3)

Information Element	Value/remark
Wait time	15 seconds

8.1.2.5.5 Test requirement

After step 6, counter K shall be equals to (N300+1) and there shall be no uplink transmission in the monitoring period specified in step 6.

8.1.2.6 RRC Connection Establishment: Reject ("wait time" is set to 0)

8.1.2.6.1 Definition

8.1.2.6.2 Conformance requirement

1. The RRC connection establishment is initiated by the UE, which leaves the idle mode and transmits an RRC CONNECTION REQUEST message on the uplink CCCH.

2. In the case of a failure to establish the RRC connection by the reception of a RRC CONNECTION REJECT message which contains IE "wait time" equals to 0, the UE shall go back to idle mode immediately.

Reference

3GPP TS 25.331 clause 8.1.3

8.1.2.6.3 Test purpose

To confirm that the UE goes back to idle mode, if the SS transmits an RRC CONNECTION REJECT message which includes IE "wait time" set to 0. To confirm that the UE ignores an RRC CONNECT REJECT message not addressed to it. To confirm that the UE is capable of handling an erroneous RRC CONNECTION REJECT message correctly.

8.1.2.6.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by making an outgoing call. After the SS receives this message, it transmits an RRC CONNECTION REJECT message which is not addressed to the UE. The UE shall disregard this message and proceed to re-transmit RRC CONNECTION REQUES message upon T300 timer expiry. SS answers the second RRC CONNECTION REQUEST message by transmitting an RRC CONNECTION REJECT message with IE "wait time" set to 15 seconds, but without the mandatory IE "rejection cause". The UE shall continue to send the third RRC CONNECTION REQUEST message after a 15 second lapse. Next, the SS sends a legal RRC CONNECTION REJECT message which is expected to cause the UE to move to idle mode spontaneously. To confirm that finally the UE goes back to idle mode immediately after receiving the reject message, SS shall monitor the uplink CCCH for the next 60 second and verify that there is no further transmission in the uplink direction.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	→		RRC CONNECTION REQUEST	Test operator is prompted to make an out-going call,
2	←		RRC CONNECTION REJECT	IE "Initial UE identity" contains an identity different from any of the UE identities available.
3	→		RRC CONNECTION REQUEST	UE shall continue to send this message after T300 time-out.
4	←		RRC CONNECTION REJECT	IE "Reject Cause" is omitted, IE "wait time" is set to 15 seconds (maximum).
5	→		RRC CONNECTION REQUEST	UE shall continue to send this message after the expiry of "wait time" IE indicated in RRC CONNECTION REJECT message in step 4.
6	←		RRC CONNECTION REJECT	IE "wait time" is set to 0.
7				The UE goes back to idle mode..

Specific Message Contents

RRC CONNECTION REQUEST (Step 1)

Information Element	Value/remark
Initial UE Identity	Checked to see if it is set to IMSI stored in the test USIM card.
Initial UE Capability	Checked to see if it is compatible to ICS/IXIT statements.
Establishment Cause	Checked to see if set to one of the supported originating call types
Protocol Error Indicator	Checked to see if set to "FALSE"
Measured Results on RACH	Checked to see if it is absent

RRC CONNECTION REJECT (Step 2)

Information Element	Value/remark
Initial UE Identity	
IMSI	Set to an arbitrary octet string of length 7 bytes, which is different from the IMSI stored in USIM.
Wait time	15 seconds
Redirection Info	Not present

RRC CONNECTION REQUEST (Step 3)

Information Element	Value/remark
Initial UE Identity	Checked to see if it is set to IMSI stored in the test USIM card.
Initial UE Capability	Checked to see if it is compatible to ICS/IXIT statements.
Establishment Cause	Checked to see if set to one of the supported originating call types
Protocol Error Indicator	Checked to see if set to "TRUE"
Measured Results on RACH	Checked to see if it is absent

RRC CONNECTION REJECT (Step 4)

Information Element	Value/remark
Initial UE Identity	
IMSI	Set to the identical octet string as the IMSI stored in the USIM card.
Reject Cause	Not Present
Wait time	15 seconds (Maximum)
Redirection Info	Not Present

RRC CONNECTION REQUEST (Step 5)

The contents of this message must be identical to those specified for the message in step 3.

RRC CONNECTION REJECT (Step 6)

Information Element	Value/remark
Initial UE Identity	
IMSI	Set to the identical octet string as the IMSI stored in the USIM card.
Reject Cause	Congestion
Wait time	0 second
Redirection Info	Not present

Note: T300 is set to 5 seconds and N300 is arbitrarily selected from 4 to 8 in SYSTEM INFORMATION BLOCK TYPE 1 message on BCCH.

8.1.2.6.5 Test requirement

After step 2 the UE shall transmit an RRC CONNECTION REQUEST message on uplink CCCH.

After step 4 the UE shall re-transmit an RRC CONNECTION REQUEST message on the uplink CCCH 15 seconds after the transmission of the second downlink RRC CONNECTION REJECT message. In this message, the "protocol error indicator" IE shall be set to "TRUE".

After step 6 the UE shall stop sending an RRC CONNECTION REQUEST message, go back to idle mode immediately and not transmit in the uplink direction again.

8.1.2.7 RRC Connection Establishment in CELL_FACH state: Success

8.1.2.7.1 Definition

8.1.2.7.2 Conformance requirement

During the RRC connection establishment, the UTRAN might assign common physical resource to the UE using an RRC CONNECTION SETUP message. When no information about the physical channels accessible is available from

the message, the UE shall utilize the PRACH and S-CCPCH information transmitted on the BCCH and then enter the CELL_FACH. Subsequently, the UE shall establish the required signalling links with the UTRAN using common physical resources.

Reference

3GPP TS 25.331 clause 8.1.3

8.1.2.7.3 Test Purpose

To confirm that the UE is able to enter CELL_FACH state and setup signalling links using common physical channels.

8.1.2.7.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Idle state (state 2 or state 3 or state 7) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE transmits an RRC CONNECTION REQUEST message to the SS on the uplink CCCH by attempting to make an outgoing call. After the SS receives this message, it assigns the necessary radio resources and U-RNTI to be used by the UE, and then transmits an RRC CONNECTION SETUP message to the UE within timer T300. SS then waits for the UE to transmit an RRC CONNECTION SETUP COMPLETE message on the DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		→	RRC CONNECTION REQUEST	Test operator is requested to make an outgoing call. The UE shall transmit this message, indicating the correct establishment cause.
2		←	RRC CONNECTION SETUP	SS omits both IE “Uplink DPCH Info” and IE “Downlink DPCH Info” from the message.
3				The UE shall configure the layer 2 and layer 1.
4		→	RRC CONNECTION SETUP COMPLETE	UE shall send this message on the DCCH, carried by the assigned PRACH resources.

Specific Message Content

RRC CONNECTION REQUEST

Information Element	Value/remark
Establishment Cause	Originating ~~PS Data~~Interactive Call

RRC CONNECTION SETUP

For this message, the contents of the message to be used are basically identical to the message sub-type entitled “RRC CONNECTION SETUP message (Transition to CELL_FACH)” found in the default message content part. The following exceptions are applicable in this test:

Information Element	Value/remark
Uplink DPCH Info	Not Present
Downlink information common for all radio links	Not Present
Downlink information per radio link list	Not Present

RRC CONNECTION SETUP COMPLETE

Information Element	Value/remark
UE Radio Access Capability	Checked to see if compatible with the stated capability in PIXIT/PICS statements.

8.1.2.7.5 Test requirements

After step 3 the UE shall establish the RRC connection, and transmit RRC CONNECTION SETUP COMPLETE message on the DCCH using PRACH physical resource specified in system information block messages.

8.1.2.8 RRC Connection Establishment: Invalid system information message reception

8.1.2.8.1 Definition

8.1.2.8.2 Conformance requirement

The UE shall ignore the message and shall not select the cell, if the associated a SYSTEM INFORMATION message on the BCCH which includes ~~the~~an ~~unknown~~ invalid value in the mandatory information element which ~~criticality is set to "reject"~~ in the master information block is broadcasting.

Reference

3GPP TS 25.331 clause 8.1.1 clause 16

8.1.2.8.3 Test purpose

To confirm that the UE does not select the cell if the transmitted SYSTEM INFORMATION message on the BCCH which includes ~~the~~an ~~unknown~~ invalid value in the ~~mandatory~~ information element ~~whose criticality is set to "reject" value~~ in the master information block is broadcasting

8.1.2.8.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Power off (state 1) as specified in clause 7.4 of TS 34.108

Test Procedure

The SS broadcasts the SYSEM INFORMATION message on the BCCH which includes the PLMN Type information element having ~~"spare value"~~an invalid value in the master information block. When the UE is supplied the power, it finds that the SYSTEM INFORMATION message on the BCCH includes the unknown value in the mandatory information element and the UE shall ignore this message. When an outgoing call is attempted, the test operator shall be informed that the UE is in a "No Service" state. The UE shall not transmit an RRC CONNECTION REQUEST message on the uplink CCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	SYSTEM INFORMATION	The SS broadcasts the SYSTEM INFORMATION message on the BCCH which includes an invalid value~~an unknown value in the mandatory information element whose criticality is set to "reject"~~ in the master information block.
2				The UE is supplied the power.
3				SS waits for 1 minute and then asks the test operator to attempt to make an outgoing call.
4				SS checks that no uplink transmission on CCCH is detected.

Specific Message Contents

SYSTEM INFORMATION (master information block)

The contents of a SYSTEM INFORMATION message in this test case is identical to the corresponding message found in the default contents of layer 3 messages for RRC tests, with the following exceptions:

Information Element	Value/remark
Supported PLMN Types	invalid value which is not defined~~spare value~~

8.1.2.8.5 Test requirement

After step 3 the UE shall not transmit an RRC CONNECTION REQUEST message on the uplink CCCH.

8.1.2.9 RRC Connection Establishment: Success after Physical channel failure

8.1.2.9.1 Definition

8.1.2.9.2 Conformance requirement

1. The RRC connection establishment is initiated by the UE, which leaves the idle mode. The UE shall transmit an RRC CONNECTION REQUEST message which includes the IE "Initial UE identity". This message shall be sent on the uplink CCCH.

2. In the case of a failure to establish the RRC connection at the physical channel failure after the UE receives an RRC CONNECTION SETUP message ,the UE retries to establish the RRC connection until V300 is greater than N300

Reference

3GPP TS 25.331 clause 8.1.3

8.1.2.9.3 Test purpose

To confirm that the UE retries to establish the RRC connection until V300 is greater than N300 for the physical channel failure as the SS does not configure the physical channel which is specified in the transmitted RRC CONNECTION SETUP message.

8.1.2.9.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Idle state (state 2 or state 3 or state 7) -as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

Before the test starts, an internal counter K in SS is initialised to a value = 1. Following this, the UE shall transmit an RRC CONNECTION REQUEST message to the SS on the uplink CCCH, after the operator attempts to make an outgoing call. SS transmits an RRC CONNECTION SETUP message to make the UE configure the physical channel in order to communicate on the DCCH but SS does not configure the physical channel. Then the UE detects the physical channel failure and transmits an RRC CONNECTION REQUEST message. SS increments K every time such a message is received. This cycle is repeated until K reaches N300. When K is equal to N300, the SS transmits the RRC CONNECTION SETUP message and configures the physical channel. The UE shall detect "in-sync" from physical layer and then acknowledge the establishment of RRC connection by sending the RRC CONNECTION SETUP COMPLETE message on uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS initialises counter K to 1. Operator is asked to make an outgoing call and SS starts to wait for RRC CONNECTION REQUEST on uplink CCCH.
2	→		RRC CONNECTION REQUEST	
3				SS checks to see if K is equal to N300+1. If so, goes to step 6. Else, continues to execute step 4.
4	←		RRC CONNECTION SETUP	See the clause 9 in TS 34.108 on default message content for RRC. But SS does not configure the physical channel.
5				SS increments K. The next step is step 2.
6	←		RRC CONNECTION SETUP	See the clause 9 in TS 34.108 on default message content for RRC. SS configures the physical channel.
7				The UE configures the layer 1 and layer 2.
8	→		RRC CONNECTION SETUP COMPLETE	

Specific Message Contents

None

8.1.2.9.5 Test requirement

After step 4 the UE shall re-send RRC CONNECTION REQUEST message.

After step 8 the UE shall transmit an RRC CONNECTION SETUP COMPLETE message and establish an RRC connection.

8.1.3 RRC Connection Release

8.1.3.1 RRC Connection Release in CELL_DCH state: Success

8.1.3.1.1 Definition

8.1.3.1.2 Conformance requirement

In case of an RRC connection release from CELL_DCH state, the UTRAN transmits an RRC CONNECTION RELEASE message to the UE using unacknowledged mode on the DCCH. The UE then responds by transmitting an RRC CONNECTION RELEASE COMPLETE message using unacknowledged mode to UTRAN for N308 times, each time at the expiry of T308 timer. Then the UE leaves the RRC connected mode and initiates release of the layer 2 signalling link. The RRC Connection Release procedure ends when all UE dedicated resources (such as radio resources and radio access bearers) associated with the RRC connection are released and the UE returns to idle mode.

Reference

3GPP TS 25.331 clause 8.1.4

8.1.3.1.3 Test purpose

To confirm that the UE releases the L2 signalling link and dedicated resources and goes back to the idle state after it receives an RRC CONNECTION RELEASE message from the SS and transmits an RRC CONNECTON RELEASE COMPLETE message to the SS for N308 times at the interval specified by the value of T308 timer.

8.1.3.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_DCH state (state 6-1 or state 6-3) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE is brought to the CELL_DCH state by prompting the operator to initiate an outgoing call. After the DCCH is established, SS transmits an RRC CONNECTION RELEASE message to the UE to disconnect the connection. SS then waits for the UE to transmit an RRC CONNECTION RELEASE COMPLETE message using unacknowledged mode. SS checks to see if P such messages has been received at each expiry of T308 timer. P is equal to the value of IE "Number of RRC Message Transmissions" in an RRC CONNECTION RELEASE message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_DCH state after a successful RRC connection establishment by virtue of the operator making an outgoing call.
2	←		RRC CONNECTION RELEASE	SS disconnect the connection established. The value in IE "Number of RRC Message Transmissions" is arbitrarily chosen from 4 to 8 and denoted by P.
3	→		RRC CONNECTION RELEASE COMPLETE	SS waits for the arrival of N308 such message at the expiry of each T308 timer, using unacknowledged mode.
4				The UE releases L2 signalling link and dedicated resources. Then the UE goes to idle mode.

Specific Message Content

RRC CONNECTION RELEASE (Step 2)

Information Element	Value/remark
Number of RRC Message Transmission	Arbitrarily chosen between 4 and 8

8.1.3.1.5 Test requirement

After step 2 the UE shall start to transmit P times RRC CONNECTION RELEASE COMPLETE messages at the expiry of each T308 timer.

After step 3 the UE shall initiate the release L2 signalling link and dedicated resources, then it shall go to idle mode.

8.1.3.2 RRC Connection Release using on DCCH in CELL_FACH state: Success

8.1.3.2.1 Definition

8.1.3.2.2 Conformance requirement

In CELL_FACH state, the RRC layer entity in the network may issue an RRC CONNECTION RELEASE message using unacknowledged mode on the DCCH. Upon the reception of this message, the UE transmits an RRC CONNECTION RELEASE COMPLETE message using acknowledged mode to UTRAN on the DCCH and goes back to idle mode after it receives an RLC confirmation from the UTRAN.

Reference

3GPP TS 25.331 clause 8.1.4

8.1.3.2.3 Test purpose

To confirm that the UE releases the L2 signalling link and resources and goes back to the idle state after it receives an RRC CONNECTION RELEASE message on downlink DCCH from the SS. It shall transmit an RRC CONNECTON RELEASE COMPLETE message using acknowledged mode on uplink DCCH to the SS.

8.1.3.2.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_FACH state (state 6-2 or state 6-4) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE is brought to an initial state of CELL_FACH. After the successful establishment of the RRC connection, the SS transmits an RRC CONNECTION RELEASE message to the UE to disconnect the radio link. When the UE receives this message the UE transmits an RRC CONNECTION RELEASE COMPLETE message using acknowledged mode to the SS. Finally, SS checks that the UE performs proper release of all radio resources and then goes back to idle mode.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_FACH state.
2	←		RRC CONNECTION RELEASE	SS sends this message using unacknowledged mode RLC operations on the uplink DCCH.
3	→		RRC CONNECTION RELEASE COMPLETE	The UE transmits this message using acknowledged mode.
4				The UE releases L2 signalling link and radio resources. Then the UE goes to idle mode.

Specific Message Contents

None.

8.1.3.2.5 Test requirement

After step 2 the UE shall transmit an RRC CONNECTION RELEASE COMPLETE message using acknowledged mode then it shall receive a response for this message from the SS-RLC.

After step 3 the UE shall release its L2 signalling link and radio resources, then it shall go back to idle mode.

8.1.3.3 RRC Connection Release using on CCCH in CELL_FACH state: Success

8.1.3.3.1 Definition

8.1.3.3.2 Conformance requirement

In CELL_FACH state, the RRC layer entity in the network may issue an RRC CONNECTION RELEASE message using unacknowledged mode on the CCCH. Upon the reception of this message, the UE shall release the RRC connection immediately, without replying with a RRC CONNECTION RELEASE COMPLETE message on the uplink.

Reference

3GPP TS 25.331 clause 8.1.4

8.1.3.3.3 Test purpose

To confirm that the UE releases all its radio resources upon the reception of a RRC CONNECTION RELEASE message on the downlink CCCH, without transmitting RRC CONNECTION RELEASE COMPLETE message on the uplink.

8.1.3.3.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_FACH state (state 6-2 or state 6-4) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE is brought to an initial state of CELL_FACH. After the successful establishment of the RRC connection, SS transmits RRC CONNECTION RELEASE message on the downlink CCCH. The UE shall terminate the RRC connection and release all radio resources allocated to it. SS monitors the uplink DCCH and CCCH to verify that no transmission is detected.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_FACH state.
2	←		RRC CONNECTION RELEASE	SS transmits this message with the contents identical to that found in TS 34.108 clause 9 on downlink CCCH.
3				SS waits for a period equivalent to (N308+1) times T308 timer expiry. The UE shall not send any response message on uplink direction during this period. It shall release the radio resources allocated and return to idle mode.

Specific Message Contents

None.

8.1.3.3.5 Test requirement

After step 2 the UE shall release all its radio resources, return to idle mode, without transmitting RRC CONNECTION RELEASE COMPLETE message on the uplink direction.

8.1.3.4 RRC Connection Release in CELL_FACH state: Failure

8.1.3.4.1 Definition

8.1.3.4.2 Conformance requirement

In case of RRC connection release from CELL_FACH state, the RRC layer entity in the network issues an RRC CONNECTION RELEASE message using unacknowledged mode on the DCCH. When the UE does not succeed to transmit the RRC CONNECTION RELEASE COMPLETE message using acknowledged mode, it shall release all its radio resources, enter idle mode and the procedure ends on the UE side.

Reference

3GPP TS 25.331 clause 8.1.4

8.1.3.4.3 Test purpose

To confirm that the UE releases all its radio resources and enters idle mode when the UE does not succeed in transmitting the RRC CONNECTION RELEASE COMPLETE message using acknowledged mode to the SS (i.e. the UE-RLC cannot receive acknowledgement for the transmission of the RRC CONNECTION RELEASE COMPLETE message from SS.).

8.1.3.4.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_FACH state (state 6-2 or state 6-4) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

At the start of the test, the UE is brought to CELL_FACH state. When the RRC connection has been established, the SS transmits an RRC CONNECTION RELEASE message to the UE to disconnect the radio link. When the UE receives this message the UE transmits an RRC CONNECTION RELEASE COMPLETE message using acknowledged mode to the SS. The SS ignores the message and does not transmit a STATUS PDU of RLC for this message. SS checks to see that UE continues to release all its radio resources and then enters idle mode.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought into CELL_FACH state by asking the operator to perform an outgoing call attempt. clause
2	←		RRC CONNECTION RELEASE	SS ask to disconnect the radio link
3	→		RRC CONNECTION RELEASE COMPLETE	The UE transmits this message using acknowledged mode. The SS ignores this message and shall not transmit a STATUS PDU of RLC for this message.
4				SS checks to make sure that UE releases its all radio resources and enter idle mode.

Specific Message Contents

None

8.1.3.4.5 Test requirement

After step 3 the UE shall release its L2 signalling link and radio resources then it shall go to idle mode.

8.1.3.5 RRC Connection Release in CELL_FACH state: Invalid message

8.1.3.5.1 Definition

8.1.3.5.2 Conformance requirement

In CELL_FACH state, the RRC layer entity in UTRAN may issue an RRC CONNECTION RELEASE message using unacknowledged mode on the DCCH. If an invalid RRC CONNECTION RELEASE message is received by the UE, the UE shall activate the appropriate error-handling mechanism and report the error to the UTRAN. After this, the UE shall release the RRC connection.

Reference

3GPP TS 25.331 clause 8.1.4

8.1.3.5.3 Test purpose

When the UE receives an invalid RRC CONNECTION RELEASE message on the downlink DCCH, it shall transmit an RRC CONNECTON RELEASE COMPLETE message that includes the appropriate error cause on the uplink DCCH. Thereafter, it shall release the RRC connection.

8.1.3.5.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_FACH state (state 6-2 or state 6-4) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE is brought to an initial state of CELL_FACH. SS transmits an RRC CONNECTION RELEASE message on the DCCH to request to disconnect the RRC connection. However, the message contains an ~~spare~~ invalid value in the IE "Release cause". As a result, the UE shall transmit an RRC CONNECTION RELEASE COMPLETE message on the uplink DCCH, which includes the IE "Error indication". This IE shall contain "Failure cause" IE which is set to "Protocol error" and "Protocol error information" IE which is set to "Information element value not comprehended". The UE shall release the RRC connection and go back to idle mode after transmitting the RRC CONNECTION RELEASE COMPLETE message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to the CELL_FACH state.
2	←		RRC CONNECTION RELEASE	See specific message contents for this message
3	→		RRC CONNECTION RELEASE COMPLETE	The IE "Protocol error cause" found in IE "Protocol error information" shall be set to "Information element value not comprehended".
4				The UE shall release the signalling link and radio resources, and then return to idle mode.

Specific Message Contents

RRC CONNECTION RELEASE (Step 2)

Information Element	Value/remark
Release cause	~~Contains a spare value in this Ie~~invalid value

RRC CONNECTION RELEASE COMPLETE

Information Element	Value/remark
Error Indication Failure cause Protocol error information Protocol error cause	 Protocol error Information element value not comprehended

8.1.3.5.5 Test requirement

After step2 the UE shall transmit an RRC CONNECTION RELEASE COMPLETE message which includes the appropriate cause values in IE "Error Indication".

After step3 the UE shall release its L2 signalling link and radio resources, then it shall go back to idle mode.

8.1.4 Void~~RRC Connection Re-Establishment~~

~~8.1.4.1 RRC Connection Re-Establishment: Success~~

~~8.1.4.1.1 Definition~~

~~8.1.4.1.2 Conformance requirement~~

~~RRC connection re-establishment is needed, when a UE loses the radio connection due to e.g. radio link failure in CELL_DCH state. After a successful cell re-selection and transiting to CELL_FACH state, the UE transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH to request for the re-establishment of an RRC connection. The UTRAN transmits an RRC CONNECTION RE-ESTABLISHMENT message on the downlink DCCH, which includes the new configuration information. Then the UE transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

~~Reference~~

~~3GPP TS 25.331 clause 8.1.5~~

~~8.1.4.1.3 Test purpose~~

~~To confirm that the UE tries to find a new cell by transiting to CELL_FACH state, after detecting that a radio link failure has occurred. The UE shall then attempt to establish a new RRC connection using an RRC CONNNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI". Finally when the SS allocates a new configuration to the UE using RRC CONNECTION ESTABLISHMENT message, the UE shall establish a new RRC connection link.~~

~~8.1.4.1.4 Method of test~~

~~Initial Condition~~

~~System Simulator: 2 cells (Cell 1 is active, Cell 2 is inactive)~~

~~UE: CELL_DCH state (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.10 in cell 1~~

Test Procedure

The UE is brought to CELL_DCH state in a cell 1 after a successful outgoing call attempt. After the call has been established, the SS stops transmitting and receiving in a cell No.1 and begins to broadcast the BCCH in cell 2, the UE should detect a radio link failure in cell 1 and attempts to re-select to cell 2. It should then enter CELL_FACH state and transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH to SS. The SS transmits an RRC CONNECTION RE-ESTABLISHMENT message which includes a new configuration information. After the UE receives an RRC CONNECTION RE-ESTABLISHMENT message, it reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_DCH state in a cell 1, after making a successful outgoing call.
2		←	BCCH	The SS starts transmitting the BCCH in a cell 2 using the same contents (except for cell identity which is set to "0000 0000 0000 0010") for system information sent on cell 1. SS starts to listen to the uplink CCCH of cell 2.
3				The SS stops transmitting and receiving in a cell .1.
4		→	RRC CONNECTION RE-ESTABLISHMENT REQUEST	The UE should find a new cell 2 and then transmits this message which includes the IE "U-RNTI" assigned previously.
5		←	RRC CONNECTION RE-ESTABLISHMENT	Including the new configuration information.
6		→	RRC CONNECTION RE-ESTABLISHMENT COMPLETE	

Specific Message Contents

Cell 1: SYSTEM INFORMATION TYPE 2

Information Element	Value/remark
UE Timers and constants in connected mode	
T301	8 seconds
T313	15 seconds
T314	20 seconds
T315	30 seconds
N313	50

8.1.4.1.5 Test requirement

After step 3, the UE shall detect the presence of cell 2 and attempts to re-established the lost RRC connection by transmitting RRC CONNECTION RE-ESTABLISHMENT REQUEST in the new cell.

After step 5, the UE shall re-establish an RRC connection and observe the new configuration information specified in an RRC CONNECTION RE-ESTABLISHMENT message.

8.1.4.2 RRC Connection Re-Establishment: Success after T301 timeout (T314 and T315 are running)

8.1.4.2.1 Definition

8.1.4.2.2 Conformance requirement

1. RRC connection re-establishment is needed when a UE loses the radio connection due to e.g. radio link failure in CELL_DCH state. After a cell re-selection to a new cell, the UE transits to CELL_FACH state. In this state, the UE transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH to request the re-establishment of an RRC connection.

2. In the case of a failure to re-establish the RRC connection after the expiry of timer T301, the UE retries to re-establish the RRC connection. Finally when the UTRAN allocates a new configuration to the UE using RRC CONNECTION ESTABLISHMENT message, the UE shall establish a new RRC connection link.

Reference

3GPP TS 25.331 clause 8.1.5

8.1.4.2.3 Test purpose

To confirm that the UE retries to re-establish a new RRC connection after the expiry of timer T301. This occurs after the UE loses the radio connection and starts to transmit an RRC CONNECTION RE-ESTABLISHMENT REQUEST message.

8.1.4.2.4 Method of test

Initial Condition

System Simulator: 2 cells (Cell 1 is active, Cell 2 is inactive)

UE: CELL_DCH state (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE is in the CELL_DCH state in cell 1, after making a successful outgoing call attempt. SS begins to broadcast the BCCH in cell 2 and then stops transmitting and receiving in cell 1. The UE shall detect a radio link failure and the presence of cell 2. It then enters CELL_FACH state and transmits to SS an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH. The SS does not transmit an RRC CONNECTION RE-ESTABLISHMENT to answer to the request. This causes T301 timer to expire and the UE re-transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message again. Then the SS transmits an RRC CONNECTION RE-ESTABLISHMENT message and the UE reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS prompts the operator to make an outgoing call. The UE is in the CELL_DCH state in cell 1.
2		←	BCCH	The SS starts to transmit BCCH in a cell 2, with the SYSTEM INFORMATION message similar (with the exception of cell identity IE) to that transmitted in cell 1.
3				The SS stops transmitting and receiving in cell 1.
4	→		RRC CONNECTION RE-ESTABLISHMENT REQUEST	The UE finds cell 2 and transmits this message which includes the IE "U-RNTI".
5				The SS does not transmit a response.
6	→		RRC CONNECTION RE-ESTABLISHMENT REQUEST	After the expiry of T301 the UE re-transmits this message.
7		←	RRC CONNECTION RE-ESTABLISHMENT	Including the new configuration information.
8	→		RRC CONNECTION RE-ESTABLISHMENT COMPLETE	

Specific Message Contents

None

8.1.4.2.5 Test requirement

After step 3, the UE shall detect presence of cell 2 and starts to transmit an RRC CONNECTION RE-ESTABLISHMENT REQUEST message to setup the radio link again.

After step 5, the UE shall re-transmit an RRC CONNECTION RE-ESTABLISHMENT REQUEST message on the uplink CCCH after the expiry of timer T301.

After step 7 the UE shall re-establish an RRC connection in cell 2, using the new configuration commanded by the SS.

8.1.4.3 RRC Connection Re-Establishment: Success after reception of invalid message (V301 is not greater than N301)

8.1.4.3.1 Definition

8.1.4.3.2 Conformance requirement

1. RRC connection re-establishment is needed when a UE loses the radio connection due to e.g. radio link failure in CELL_DCH state. After a cell re-selection to a new cell, the UE transits to CELL_FACH state. In this state, the UE transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH to request the re-establishment of an RRC connection.

2. In the case of a reception of an invalid RRC CONNECTION RE-ESTABLISHMENT message, the UE retries to re-establish the RRC connection until up to a maximum of N301 attempts.

~~Reference~~

~~3GPP TS 25.331 clause 8.1.5~~

~~8.1.4.3.3 Test purpose~~

~~To confirm that the UE retries to re-establish a new RRC connection until its internal variable V301 is greater than N301 when the UE receives an invalid RRC CONNECTION RE-ESTABLISHMENT message.~~

~~8.1.4.3.4 Method of test~~

~~Initial Condition~~

~~System Simulator: 2 cells (Cell 1 is active, Cell 2 is inactive)~~

~~UE: CELL_DCH state (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108 in cell 1~~

~~Test Procedure~~

~~Before the test starts, an SS internal counter K is initialized to 1. The UE is in the CELL_DCH state in cell 1, after making a successful outgoing call attempt. SS begins to broadcast the BCCH in cell 2 and then stops transmitting and receiving in cell 1. The UE shall detect a radio link failure and the presence of cell 2. It then enters CELL_FACH state and transmits to SS an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH. The SS transmits an RRC CONNECTION RE-ESTABLISHMENT message to answer to the request which includes the "DRX Indicator" IE set to "spare value". SS increments internal counter K. After receiving this invalid message, the UE shall re-transmit an RRC CONNECTION RE-ESTABLISHMENT REQUEST message again. After the reception of each RRC CONNECTION RE-ESTABLISHMENT REQUEST message on the uplink CCCH, SS checks the value of K. If K is less than (N301+1), SS re-sends the same invalid RRC CONNECTION RE-ESTABLISHMENT message again on the downlink DCCH and then increments the internal counter K. When K is equal to N301+1 then the SS transmits a valid RRC CONNECTION RE-ESTABLISHMENT message and the UE shall reconfigure the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS sets internal counter K to 1 and prompts the operator to make an outgoing call. The UE is in the CELL_DCH state in cell 1.
2		←	BCCH	The SS starts to transmit BCCH in a cell 2, with the SYSTEM INFORMATION message similar (with the exception of cell identity IE) to that transmitted in cell 1.
3				The SS stops transmitting and receiving in cell 1.
4	→		RRC CONNECTION RE-ESTABLISHMENT REQUEST	The UE finds cell 2 and transmits this message which includes the IE "U-RNTI".
5		←	RRC CONNECTION RE-ESTABLISHMENT	The SS transmits a response which includes the "DRX indicator" IE set to "spare value" and increments K.
6	→		RRC CONNECTION RE-ESTABLISHMENT REQUEST	The UE transmits this message which includes the IE "U-RNTI".
7				If K is less than or equal to N301 then jump back to Step 5, otherwise proceed with step 8.
8		←	RRC CONNECTION RE-ESTABLISHMENT	Including the new configuration information.
9	→		RRC CONNECTION RE-ESTABLISHMENT COMPLETE	

Specific Message Contents

RRC CONNECTION RE-ESTABLISHMENT REQUEST (Step 4)

The content of this message shall be identical to the expected default message specified in Annex A.

RRC CONNECTION RE-ESTABLISHMENT (Step 5)

The content of this message is identical to the message sub-type titled "Speech in CS", specified in Annex A with the following exceptions.

Information Element	Value/remark
"DRX Indicator"	'spare value'

RRC CONNECTION RE-ESTABLISHMENT REQUEST (Step 6)

Information Element	Value/remark
"Protocol error indicator" "Protocol error information"	TRUE 'Information element value not comprehended'

RRC CONNECTION RE-ESTABLISHMENT (Step 8)

The content of this message is identical to the message sub-type titled “Speech in CS”, specified in Annex A.

8.1.4.3.5 Test requirement

After step 3, the UE shall detect presence of cell 2 and starts to transmit RRC CONNECTION RE-ESTABLISHMENT REQUEST message to setup the radio link again.

After step 5, the UE shall re-transmit an RRC CONNECTION RE-ESTABLISHMENT REQUEST message on the uplink CCCH. The total number of RRC CONNECTION RE-ESTABLISHMENT messages received by SS shall be equal to N301+1.

After step 8 the UE shall re-establish an RRC connection in cell 2, using the new configuration commanded by the SS.

8.1.4.4 RRC Connection Re-Establishment: Failure after reception of invalid message (V301 is greater than N301)

8.1.4.4.1 Definition

8.1.4.4.2 Conformance requirement

1. RRC connection re-establishment is needed when a UE loses the radio connection due to e.g. radio link failure in CELL_DCH state. After cell re-selection and then transiting to CELL_FACH state, the UE RRC transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE “U-RNTI” on the uplink CCCH to request for re-establishment of an RRC connection.

2. In the case of a reception of an invalid RRC CONNECTION RE-ESTABLISHMENT message, if the UE retries to re-establish the RRC connection until up to a maximum of N301 attempts and receives the invalid message, the UE goes back to idle mode.

Reference

3GPP TS 25.331 clause 8.1.5

8.1.4.4.3 Test purpose

To confirm that the UE stops retrying to re-establish the RRC connection if its internal counter V301 is greater than N301 and then goes back to idle state.

8.1.4.4.4 Method of test

Initial Condition

System Simulator: 2 cells (Cell 1 is active, Cell 2 is inactive)

UE: CELL_DCH state (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE is in the CELL_DCH state in a cell 1. SS begins to broadcast the BCCH in cell 2, and then stops transmitting and receiving in cell 1. The UE shall detect a radio link failure and the presence of cell 2. It then enters CELL_FACH state and transmits to SS an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE “U-RNTI” on the uplink CCCH. The SS transmits an RRC CONNECTION RE-ESTABLISHMENT message to answer to the request which includes the “DRX Indicator” IE set to “spare value”, resulting in a protocol error and the UE shall re-transmit an RRC CONNECTION RE-ESTABLISHMENT REQUEST message again. The SS keeps a count of the number of RRC CONNECTION RE-ESTABLISHMENT REQUEST messages received. The UE shall go back to idle mode after making exactly N301 re-transmission attempts.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				SS set counter K to 1. The UE is in CELL_DCH state in a cell 1 after establishing an outgoing call.
2	—←		BCCH	The SS starts to transmit BCCH in a cell 2.
3				The SS stops transmitting and receiving in a cell 1.
4	—→		RRC CONNECTION RE-ESTABLISHMENT REQUEST	The UE finds new cell 2 and transmits this message which includes the IE "U-RNTI".
5	←		RRC CONNECTION RE-ESTABLISHMENT	The SS transmits a response which includes the "DRX indicator" IE set to "spare value" and increments K.
6	—→		RRC CONNECTION RE-ESTABLISHMENT REQUEST	The UE transmits this message which includes the IE "U-RNTI".
7				If K is less than or equal to N301 then jump back to Step 5, otherwise proceed with step 8.
8	←		RRC CONNECTION RE-ESTABLISHMENT	The SS transmits a response which includes the "DRX Indicator" IE set to "spare value"
9				SS waits for a period equivalent to time T301 time-out value. The UE shall not transmit RRC CONNECTION RE-ESTABLISHMENT REQUEST message on the uplink CCCH during this period. The UE shall go back to idle mode.

Specific Message Contents

RRC CONNECTION RE-ESTABLISHMENT REQUEST (Step 4)

The content of this message shall be identical to the expected default message specified in Annex A.

RRC CONNECTION RE-ESTABLISHMENT (Steps 5 and 8)

Information Element	Value/remark
DRX Indicator	spare value

RRC CONNECTION RE-ESTABLISHMENT REQUEST (Step 6)

Information Element	Value/remark
Protocol error indicator	TRUE
Protocol error information	Information element value not comprehended

8.1.4.4.5 Test requirement

After step 3 the UE shall find the presence of cell 2, enters CELL_FACH state, and starts to transmit RRC CONNECTION RE-ESTABLISHMENT REQUEST message to setup the radio link again.

After step 5 the UE shall transmit an RRC CONNECTION RE-ESTABLISHMENT REQUEST message on the uplink CCCH until V301 is greater than N301.

After step 8, when V301 is greater than N301 the UE shall stop sending RRC CONNECTION RE-ESTABLISHMENT REQUEST on the uplink CCCH and then go back to idle mode.

8.1.4.5 RRC Connection Re-Establishment: Failure (Release)

8.1.4.5.1 Definition

8.1.4.5.2 Conformance requirement

RRC connection re-establishment is needed, when a UE loses the radio connection due to e.g. radio link failure in CELL_DCH state. After the completion of cell re-selection and transiting to CELL_FACH state, the UE transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH to request for re-establishment of an RRC connection. The UTRAN transmits an RRC CONNECTION RELEASE message signifying that it is not able to accept the request, so the UE shall go back to idle mode.

Reference

3GPP TS 25.331 clause 8.1.5

8.1.4.5.3 Test purpose

To confirm that the UE transmits an RRC CONNECTION RELEASE COMPLETE message and goes back to idle mode after its request to re-establish an RRC connection was rejected by the SS in the new cell. The request to re-establish should be made with an RRC CONNNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI".

8.1.4.5.4 Method of test

Initial Condition

System Simulator: 2 cells Cell 1 is active, Cell 2 is inactive

UE: CELL_DCH state (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE starts from CELL_DCH state in cell 1 after making a successful outgoing call. When the SS stops transmitting and receiving in cell 1 and begins to broadcast the BCCH in cell 2, the UE should detect radio link failure and the presence of cell 2. It then enters CELL_FACH state and transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message, which includes the IE "U-RNTI" on the uplink CCCH. The SS replies with a RRC CONNECTION RELEASE message on the downlink CCCH using transport mode operation. Finally, it goes back to idle mode.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_DCH state in cell 1 after completing a successful outgoing call setup.
2		←	BCCH	The SS transmits BCCH in cell 2
3				The SS stops transmitting and receiving in cell 1.
4		→	RRC CONNECTION RE-ESTABLISHMENT REQUEST	The UE finds new cell 2 and transmits this message which includes the IE "U-RNTI".
5		←	RRC CONNECTION RELEASE	SS rejects the re-establishment request. Sent on downlink CCCH using RLC-TM.
6				The UE goes back to idle.

Specific Message Contents

RRC CONNECTION RELEASE: TM

Information Element	Value/remark
Message Type	
U-RNTI	Not Present
- SRNC Identity	Set to the same SRNC identity as previously assigned
- S-RNTI	Set to the same S-RNTI as previously assigned
Integrity check info	Not Checked
Number of RRC Message Transmissions	Not Present
Release cause	Check to see if set to "Re-establishment reject"

8.1.4.5.5 Test requirement

After step 3 the UE shall find the new cell 2 and transmits RRC CONNECTION RE-ESTABLISHMENT REQUEST to ask for re-connection of the radio link.

After step 5 the UE shall go back to idle mode.

8.1.4.6 RRC Connection Re-Establishment: Failure(T315=0,T314=0)

8.1.4.6.1 Definition

8.1.4.6.2 Conformance requirement

RRC connection re-establishment is needed, when a UE loses the radio connection due to e.g. radio link failure in CELL_DCH state. However the UE must enter to idle mode when T314 is set to 0 in RADIO BEARER SETUP message and also T315 is set to 0 in SYSTEM INFORMATION message.

Reference

3GPP TS 25.331 clause 8.1.5

~~8.1.4.6.3 Test purpose~~

~~To confirm that the UE enters to idle mode, after detecting that a radio link failure has occurred.~~

~~8.1.4.6.4 Method of test~~

~~Initial Condition~~

~~System Simulator: 1 cell~~

~~UE: idle state (state 2 or state 3) as specified in clause 7.4 of TS 34.108~~

~~Test Procedure~~

~~The MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK TYPE 2 messages on the downlink BCCH are modified with respect to the default settings. The UE is brought to CELL_DCH state, after successfully executing the mobile originated RRC connection establishment procedure (i.e. P3+P7 or P2+P5) as outlined in clause 7.4 in TS 34.108. Next, SS transmits RADIO BEARER SETUP message on the downlink DCCH in order to establish radio bearers for user data on DTCH. In this message, the re establishment timers T314 and T315 are both set to 0. The UE shall respond by sending a RADIO BEARER SETUP COMPLETE message on the uplink DCCH. After the DTCH has been established, the SS stops transmitting and receiving on the radio link except P CCPCH, the UE should detect a radio link failure . Then the UE shall enter to idle mode as both T314 and T315 are set to 0.The SS transmits a PAGING TYPE 1 message on the PCCH to confirm that the UE is in idle state., the UE transmits an RRC CONNECTION REQUEST message on the uplink CCCH. SS replies with an RRC CONNECTION SETUP message and allocates dedicated channels to the UE. Then, the UE shall complete this test by transmitting RRC CONNECTION SETUP COMPLETE message on the uplink DCCH.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 2	T315=0
2				RRC connection establishment procedure (i.e. P3+P7 or P5+P9) as outlined in clause 7.4 in TS 34.108.
3		←	RADIO BEARER SETUP	T314=0
4		→	RADIO BEARER SETUP COMPLETE	
5				The UE is brought to CELL_DCH state, after making a successful outgoing call.
6				The SS stops transmitting and receiving on the radio link except the PCCPCH.
7				The UE should enter to idle mode after it detects the radio link failure and SS confirms that the UE does not transmit any RRC CONNECTION RE-ESTABLISHMENT REQUEST messages for 20 seconds.
8		←	PAGING TYPE 1	SS resumes transmission and reception on radio links suspended in step 4. SS pages the UE using a matched identity (test-SIM IMSI).
9		→	RRC CONNECTION REQUEST	SS checks the following IEs: "Initial UE identity" – must be the same as test SIM IMSI. "Establishment Cause – must "Terminating Call" "Protocol Indicator" – must be FALSE
10		←	RRC CONNECTION SETUP	SS assigns DPCH resources to allow UE to establish a RRC connection.
11		→	RRC CONNECTION SETUP COMPLETE	UE shall acknowledge the completion of RRC connection establishment procedure.

Specific Message Contents

MASTER INFORMATION BLOCK (Step 1)

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

Information Element	Value/remark
MIB Value Tag	2

SYSTEM INFORMATION BLOCK TYPE 2 (Step 1)

Use the same message type in clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
UE Timers and constants in connected mode	
T301	3 seconds
T313	15 seconds
T314	20 seconds
T315	0 seconds
N313	50

RADIO BEARER SETUP (Step 3)

For circuit switch only UEs that do not support speech service, use the same message sub-type titled "Non-speech in CS" in Annex A, with the following exceptions:

For circuit switch only UEs that support speech service, use the same message sub-type titled "Speech in CS" in clause 9 of TS 34.108, with the following exceptions:

For all other types of UEs, use the same message sub-type titled "Packet to CELL_DCH from CELL_DCH in PS" in Annex A, with the following exceptions:

Information Element	Value/remark
RAB information to setup list	
- RAB information for setup	
- RAB info	
- RAB identity	1
- CN Domain Identity	One of the CN domains supported by the UE
- Re-establishment timer	
- CHOICE Timer value	T314
- T314 value	0

PAGING TYPE 1 (Step 8)

Information Element	Value/remark
Paging record list	Only 1 entry
Paging record	
CHOICE Paging originator	CN originator
- Paging cause	Terminating Call with one of the supported services (Conversational Call, Streaming Call, Interactive Call, Background Call, SMS)
- CN domain identity	Supported Domain (PS Domain or CS Domain)
- CHOICE UE Identity	IMSI
- IMSI	Set to the same octet string as in the IMSI stored in the USIM card

8.1.4.6.5 Test requirement

After step 6 the UE shall not transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message.

After step 10 the UE shall have an RRC connection based on dedicated physical channel resources. SS verifies that the UE transmits RRC CONNECTION SETUP COMPLETE on the uplink DCCH.

8.1.4.7 RRC Connection Re-Establishment: Success(T314=0, T315>0 and radio link failure)

8.1.4.7.1 Definition

~~8.1.4.7.2 Conformance requirement~~

~~RRC connection re-establishment is needed, when a UE loses the radio connection due to e.g. radio link failure in CELL_DCH state. But the UE must release the radio bearer which is associated with T314 if T314 is set to 0. After a successful cell re-selection and a subsequent transition to CELL_FACH state, the UE transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH to request for the re-establishment of an RRC connection. The UTRAN transmits an RRC CONNECTION RE-ESTABLISHMENT message on the downlink DCCH, which includes the new configuration information assigned. Then the UE transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

~~Reference~~

~~3GPP TS 25.331 clause 8.1.5~~

~~8.1.4.7.3 Test purpose~~

~~To confirm that the UE indicates to the non-access stratum the release of radio access bearer which is associated with T314 and tries to find a new cell by transiting to CELL_FACH state, after detecting that a radio link failure has occurred. The UE shall then attempt to establish a new RRC connection using an RRC CONNNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI". Finally when the UTRAN allocates a new configuration to the UE using RRC CONNECTION ESTABLISHMENT message,the UE shall establish a new RRC connection link.~~

~~8.1.4.7.4 Method of test~~

~~Initial Condition~~

~~System Simulator: 2 cells (Cell 1 is active, Cell 2 is inactive)~~

~~UE: CELL_DCH state (state 6-5 or state 6-7) as specified in clause 7.4 of TS 34.108 in cell 1~~

~~Test Procedure~~

~~The UE is brought to CELL_DCH state in a cell 1 after making an successful outgoing call attempt. After the call has been established, SS begins to broadcast the BCCH in cell 2, and then stops transmitting and receiving in cell 1. 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 T314. It shall attempt to re-select to cell 2. It should then enter CELL_FACH state and transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH to SS. The SS transmits an RRC CONNECTION RE-ESTABLISHMENT message which includes a new configuration. After the UE receives an RRC CONNECTION RE-ESTABLISHMENT message, it reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	T314=0
2		→	RADIO BEARER SETUP COMPLETE	
3				The UE is brought to CELL_DCH state in a cell 1, after making a successful outgoing call.
4		←	BCCH	The SS starts transmitting the BCCH in a cell 2 using the same contents (except for cell identity which is set to "0000 0000 0000 0010") for system information sent on cell 1. SS starts to listen to the uplink CCCH of cell 2.
5				The SS stops transmitting and receiving in a cell .1.
6				The UE detects the radio link failure which is associated with T314. The UE indicates to the non-access stratum the release of the affected radio bearer .
7		→	RRC CONNECTION RE-ESTABLISHMENT REQUEST	The UE should find a new cell 2 and then transmits this message which includes the IE "U-RNTI" assigned previously.
8		←	RRC CONNECTION RE-ESTABLISHMENT	Including the new configuration information.
9		→	RRC CONNECTION RE-ESTABLISHMENT COMPLETE	

Specific Message Contents

RADIO BEARER SETUP

For circuit-switched only UEs that do not support speech service, use the same message sub-type titled "Non-speech in CS" in Annex A, with the following exceptions:

For circuit-switched only UEs that support speech service, use the same message sub-type titled "Speech in CS" in clause 9 of TS 34.108, with the following exceptions:

For all other types of UEs, use the same message sub-type titled "Packet to CELL_DCH from CELL_DCH in PS" in Annex A, with the following exceptions:

Information Element	Value/remark
RAB information to setup list - RAB information to setup - RAB info - T314	 0

8.1.4.7.5 Test requirement

After step 5, the UE shall indicate to the non-access stratum the release of the radio bearer which is associated with T314. SS checks that no further data transmission from the affected radio bearer is received from the UE.

After step 6, the UE shall detect the presence of cell 2 and attempts to re-established the lost RRC connection by transmitting RRC CONNECTION RE-ESTABLISHMENT REQUEST in the new cell.

After step 8, the UE shall re-establish an RRC connection .

8.1.4.8 RRC Connection Re-Establishment: Success(T314>0, T315=0 and radio link failure)

8.1.4.8.1 Definition

8.1.4.8.2 Conformance requirement

RRC connection re-establishment is needed, when a UE loses the radio connection due to e.g. radio link failure in CELL_DCH state. But the 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 an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH to request for the re-establishment of an RRC connection. The UTRAN transmits an RRC CONNECTION RE-ESTABLISHMENT message on the downlink DCCH, which includes the new configuration information assigned. Then the UE transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.1.5

8.1.4.8.3 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 by transiting to CELL_FACH state, after detecting that a radio link failure has occurred. The UE shall then attempt to establish a new RRC connection using an RRC CONNNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI". Finally when the SS allocates a new configuration to the UE using RRC CONNECTION ESTABLISHMENT message,the UE shall establish a new RRC connection link.

8.1.4.8.4 Method of test

Initial Condition

System Simulator: 2 cells (Cell 1 is active, Cell 2 is inactive)

UE: CELL_DCH state (state 6-5 or state 6-7) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE is brought to CELL_DCH state in a cell 1 after making an successful outgoing call attempt. After the call has been established, SS begins to broadcast the BCCH in cell 2, and then stops transmitting and receiving in cell 1. 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 should then enter CELL_FACH state and transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH to SS. The SS transmits an RRC CONNECTION RE-ESTABLISHMENT message which includes a new configuration information. After the UE receives an RRC CONNECTION RE-ESTABLISHMENT message, it reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	T315=0
2		→	RADIO BEARER SETUP COMPLETE	
3				The UE is brought to CELL_DCH state in a cell 1, after making a successful outgoing call.
4		←	BCCH	The SS starts transmitting the BCCH in a cell 2 using the same contents (except for cell identity which is set to "0000 0000 0000 0010") for system information sent on cell 1. SS starts to listen to the uplink CCCH of cell 2.
5				The SS stops transmitting and receiving in a cell .1.
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		→	RRC CONNECTION RE-ESTABLISHMENT REQUEST	The UE should find a new cell 2 and then transmits this message which includes the IE "U-RNTI" assigned previously.
8		←	RRC CONNECTION RE-ESTABLISHMENT	Including the new configuration information channel.
9		→	RRC CONNECTION RE-ESTABLISHMENT COMPLETE	

Specific Message Contents

RADIO BEARER SETUP

For circuit switched only UEs that do not support speech service, use the same message sub-type titled "Non-speech in CS" in Annex A, with the following exceptions:

For circuit switched only UEs that support speech service, use the same message sub-type titled "Speech in CS" in clause 9 of TS 34.108, with the following exceptions:

For all other types of UEs, use the same message sub-type titled "Packet to CELL_DCH from CELL_DCH in PS" in Annex A, with the following exceptions:

Information Element	Value/remark
RAB information to setup list - RAB information to setup - RAB info - T314	 0

8.1.4.8.5 Test requirement

After step 5, the UE shall indicate to the non-access stratum the release of the radio bearer which is associated with T314.

After step 6, the UE shall detect the presence of cell 2 and attempts to re-established the lost RRC connection by transmitting RRC CONNECTION RE-ESTABLISHMENT REQUEST to the new cell.

After step 8, the UE shall re-establish an RRC connection.

8.1.4.9 RRC Connection Re-Establishment: Failure (T314 is timeout and T315=0)

8.1.4.9.1 Definition

8.1.4.9.2 Conformance requirement

RRC connection re-establishment is needed, when a UE loses the radio connection due to e.g. radio link failure in CELL_DCH state. When the UE could not find a new cell before timer T314 expires, the UE shall enter idle mode.

Reference

3GPP TS 25.331 clause 8.1.5

8.1.4.9.3 Test purpose

To confirm that the UE enters idle mode, after T314 timeout following a radio link failure.

8.1.4.9.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_DCH state (state 6-5 or state 6-7) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is brought to CELL_DCH state after a successful RRC connection establishment. After the DTCH has been established using radio bearer establishment procedure, the SS stops transmitting and receiving the DPCCH and DPDCH on the radio link. The UE shall detect a radio link failure. Before T314 is timeout, the UE shall continue to search for a new cell. During this period, SS transmits a PAGING TYPE 1 message on the PCCH to confirm that the UE has not entered the idle state. This is confirmed when no response from UE is received before T314 timeout. After T314 timeout, the UE shall enter idle mode. The SS transmits a PAGING TYPE 1 message on the PCCH again to confirm that the UE is in idle state. The UE shall respond by transmitting an RRC CONNECTION REQUEST message on the uplink CCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	T314=20 seconds
2		→	RADIO BEARER SETUP COMPLETE	
3				The UE is brought to CELL_DCH state, after making a successful outgoing call.
4				The SS stops transmitting and receiving the DPCCH and DPDCH on the radio link.
5		←	PAGING TYPE 1	The SS transmits this message, which includes a matched identity (set to the test-USIM IMSI) before T314 timeout.
6				The SS confirms that the UE does not transmit a response in the next 20 seconds.
7		←	PAGING TYPE 1	The SS transmits the message, which includes a matched identity (set to the test-USIM IMSI).
8		→	RRC CONNECTION REQUEST	SS checks the following IEs: "Initial UE identity" – must be the same as test-SIM IMSI. "Establishment Cause – must "Terminating Call" "Protocol Indicator" – must be FALSE
9		←	RRC CONNECTION SETUP	SS assigns DPCH resources to allow UE to establish a RRC connection.

Specific Message Contents

SYSTEM INFORMATION TYPE 2

Information Element	Value/remark
UE Timers and constants in connected mode	
T301	3 seconds
T313	15 seconds
T314	20 seconds
T315	0 seconds
N313	50

RADIO BEARER SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is identical to message which is defined in clause 9 of TS 34.108 in case of speech and in Annex .A in case of the other with the following exceptions:

Information Element	Value/remark
RAB information to setup	
- RAB info	
- RAB identity	0000 0001B
- CN domain identity	CS domain
Re-establishment timer	
- T314	20 seconds
- RB information to setup	
- RB identity	5
- PDCP info	Not Present
- RLC info	
- Downlink RLC mode	TM RLC
- In-sequence delivery	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	2
- MAC logical channel priority	1
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	2
- Logical channel identity	1

PAGING TYPE 1 (Step 5 and 7)

Information Element	Value/remark
Paging record list	Only 1 entry
Paging record	
CHOICE Paging originator	CN originator
- Paging cause	Terminating Call with one of the supported services (Conversational Call, Streaming Call, Interactive Call, Background Call, SMS)
- CN domain identity	Supported Domain (PS Domain or CS Domain)
- CHOICE UE Identity	IMSI
- IMSI	Set to the same octet string as in the IMSI stored in the USIM card

RRC CONNECTION SETUP (Step 9)

Use the default message found in clause 9 of TS 34.108.

8.1.4.9.5 Test requirement

After step 5 the UE shall not transmits an RRC CONNECTION REQUEST message.

After step 9 the UE shall have an RRC connection based on dedicated physical channel resources.

8.1.4.10 RRC Connection Re-Establishment: Failure (T315 is timeout and T314=0)

8.1.4.10.1 Definition

8.1.4.10.2 Conformance requirement

RRC connection re-establishment is needed, when a UE loses the radio connection due to e.g. radio link failure in CELL_DCH state. When the UE could not find a new cell before timer T315 is expires, the UE shall enter idle mode.

Reference

3GPP TS 25.331 clause 8.1.5

~~8.1.4.10.3 Test purpose~~

~~To confirm that the UE enters idle mode, after T315 is expires following a radio link failure.~~

~~8.1.4.10.4 Method of test~~

~~Initial Condition~~

~~System Simulator: 1 cell~~

~~UE: CELL_DCH state (state 6-5 or state 6-7) as specified in clause 7.4 of TS 34.108~~

~~Test Procedure~~

~~The UE is brought to CELL_DCH state after a successful RRC connection establishment. After the DTCH has been established using the radio bearer establishment procedure, the SS stops transmitting and receiving the DPCCH and DPDCH on the radio link. The UE shall detect a radio link failure. Before T315 is timeout, the UE shall continue to search for a new cell. During this period, SS transmits a PAGING TYPE 1 message on the PCCH to confirm that the UE has not entered the idle state. This is confirmed when no response from the UE is received before T315 timeout. After T315 is timeout, the UE shall enter idle mode. The SS transmits a PAGING TYPE 1 message on the PCCH again to confirm that the UE is in idle state. The UE shall respond by transmitting an RRC CONNECTION REQUEST message on the uplink CCCH.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	T315=30 seconds
2		→	RADIO BEARER SETUP COMPLETE	
3				The UE is brought to CELL_DCH state, after making a successful outgoing call.
4				The SS stops transmitting and receiving the DPCCH and DPDCH on the radio link.
5		←	PAGING TYPE 1	The SS transmits this message, which includes a matched identity (set to the test-USIM IMSI) before T315 timeout.
6				The SS confirms that the UE does not transmit a response in the next 30 seconds.
7		←	PAGING TYPE 1	The SS transmits the message, which includes a matched identity (set to the test-USIM IMSI).
8		→	RRC CONNECTION REQUEST	SS checks the following IEs: "Initial UE identity" – must be the same as test-SIM IMSI. "Establishment Cause – must "Terminating Call" "Protocol Indicator" – must be FALSE
9		←	RRC CONNECTION SETUP	SS assigns DPCH resources to allow UE to establish a RRC connection.

Specific Message Contents

SYSTEM INFORMATION TYPE 2

Information Element	Value/remark
UE Timers and constants in connected mode	
T301	3 seconds
T313	15 seconds
T314	0 seconds
T315	30 seconds
N313	50

RADIO BEARER SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is identical to message which is defined in clause 9 of TS 34.108 in case of speech and in Annex .A in case of the other of speech with the following exceptions:

Information Element	Value/remark
RAB information to setup	
- RAB info	
- RAB identity	0000 0001B
- CN domain identity	CS domain
Re-establishment timer	
- T315	30 seconds
- RB information to setup	
- RB identity	5
- PDCP info	Not Present
- RLC info	
- Downlink RLC mode	TM RLC
- In-sequence delivery	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	2
- MAC logical channel priority	1
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	2
- Logical channel identity	1

PAGING TYPE 1 (Step 5 and 7)

Information Element	Value/remark
Paging record list	Only 1 entry
Paging record	
CHOICE Paging originator	CN originator
- Paging cause	Terminating Call with one of the supported services (Conversational Call, Streaming Call, Interactive Call, Background Call, SMS)
- CN domain identity	Supported Domain (PS Domain or CS Domain)
- CHOICE UE Identity	IMSI
- IMSI	Set to the same octet string as in the IMSI stored in the USIM card

RRC CONNECTION SETUP (Step 9)

Use the default message found in clause 9 of TS 34.108.

8.1.4.10.5 Test requirement

After step 5 the UE shall not transmits an RRC CONNECTION REQUEST message.

After step 9 the UE shall have an RRC connection based on dedicated physical channel resources.

8.1.4.11 RRC Connection Re-Establishment: Success (Unrecoverable error in RLC)

8.1.4.11.1 Definition

~~8.1.4.11.2 Conformance requirement~~

~~RRC connection re-establishment is needed, when a UE loses the radio connection due to e.g. detection of RLC unrecoverable error (amount of the retransmission of RESET_PDU reaches the value of Max_DAT and receives no ACK) in CELL_DCH state. After a successful cell re-selection and transition to CELL_FACH state, the UE transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH to request for the re-establishment of an RRC connection. The UTRAN transmits an RRC CONNECTION RE-ESTABLISHMENT message on the downlink DCCH, which includes the new configuration information assigned. Then the UE transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

~~Reference~~

~~3GPP TS 25.331 clause 8.1.5~~

~~8.1.4.11.3 Test purpose~~

~~To confirm that the UE tries to find a new cell by transiting to CELL_FACH state, after detecting that a RLC unrecoverable error has occurred. The UE shall then attempt to establish a new RRC connection using an RRC CONNNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI". Finally when the SS allocates a new configuration to the UE using RRC CONNECTION ESTABLISHMENT message, the UE shall establish a new RRC connection link.~~

~~8.1.4.11.4 Method of test~~

~~Initial Condition~~

~~System Simulator: 2 cells (Cell 1 is active, Cell 2 is inactive)~~

~~UE: CELL_DCH state (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108 in cell 1~~

~~Test Procedure~~

~~The UE is brought to CELL_DCH state in a cell 1 after a successful outgoing call attempt. After the call has been established, the SS transmits a PAGING TYPE 2 message on the downlink DCCH. Then the UE transmits an UPLINK DIRECT TRANSFER message on the uplink using AM RLC for the response and the SS does not transmit a STATUS PDU for the response to AM RLC PDU. SS begins to broadcast the BCCH in cell 2. The UE should detect an unrecoverable error in cell 1 and attempts to re-select to cell 2. It should then enter CELL_FACH state and transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH to SS. The SS transmits an RRC CONNECTION RE-ESTABLISHMENT message which includes "TRUE" in RLC reset indicator(for C-plane) IE and a new TFCS setting according to the new transport channel. After the UE receives an RRC CONNECTION RE-ESTABLISHMENT message, it reconfigures the RLC and the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_DCH state in a cell 1, after making a successful outgoing call.
2	←		PAGING TYPE 2	The SS transmits a PAGING TYPE 2 message to the UE on the downlink DCCH in cell 1.
3	→		UPLINK DIRECT TRANSFER	The UE responds to the PAGING TYPE 2 message using AM-RLC but the SS does not transmit a STATUS PDU as an acknowledgement.
4	←		BCCH	The SS starts transmitting the BCCH in a cell 2 using the same contents (except for cell identity which is set to "0000 0000 0000 0010") for system information sent on cell 1. SS starts to listen to the uplink CCCH of cell 2.
5				The UE detects an unrecoverable error in the RLC level.
6	→		RRC CONNECTION RE-ESTABLISHMENT REQUEST	The UE should find a new cell 2 and then transmits this message which includes the IE "U-RNTI" assigned previously.
7	←		RRC CONNECTION RE-ESTABLISHMENT	Including the new configuration information.
8	→		RRC CONNECTION RE-ESTABLISHMENT COMPLETE	

Specific Message Contents

Cell 1: SYSTEM INFORMATION TYPE 2

Information Element	Value/remark
UE Timers and constants in connected mode	
T301	8 seconds
T313	15 seconds
T314	20 seconds
T315	30 seconds
N313	20

8.1.4.11.5 Test requirement

After step 5, the UE shall detect the presence of cell 2 and attempt to re-established the RRC connection by transmitting RRC CONNECTION RE-ESTABLISHMENT REQUEST in the new cell.

After step 7, the UE shall re-establish an RRC connection.

8.1.5 UE capability

8.1.5.1 UE Capability in CELL_DCH state: Success

8.1.5.1.1 Definition

8.1.5.1.2 Conformance requirement

1. The UE CAPABILITY ENQUIRY message is sent by the UTRAN to request the UE to transmit its capability information related to any radio access network that is supported by the UE or if the UTRAN needs an update of the UE's UMTS capability information or of its inter-system classmark.

When the UE receives a UE CAPABILITY ENQUIRY message, the UE transmits a UE CAPABILITY INFORMATION message on the uplink DCCH. Then the UTRAN transmits a UE CAPABILITY INFORMATION CONFIRM message.

If during the execution of UE capability update procedure, an invalid UE CAPABILITY INFORMATION CONFIRM is received, the UE shall respond with RRC STATUS message and decide whether to re-transmit UE CAPABILITY INFORMATION message by comparing its internal counter against N304.

Reference

3GPP TS 25.331 clause 8.1.6, 8.1.7

8.1.5.1.3 Test purpose

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

8.1.5.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_DCH state (state 6-1 or state 6-3) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE is brought to the CELL_DCH state after a successful outgoing call attempt. The SS transmits an erroneous UE CAPABILITY ENQUIRY message containing ~~spare~~ invalid value in the IE "Capability update requirement" as a correct message. After receiving such a message, the UE should report the error using RRC STATUS message with the appropriate error cause specified. Then SS transmits a UE CAPABILITY ENQUIRY message which includes the IE "Capability update requirement", the UE receives this message and transmits a UE CAPABILITY INFORMATION message on the uplink DCCH which includes the "Inter-system message"IE. The SS transmits a UE CAPABILITY INFORMATION CONFIRM message to the UE to complete the test. Then SS initiates another UE capability update procedure by transmitting the same UE CAPABILITY ENQUIRY using as in step 4. The UE shall reply with a UE CAPABILITY INFORMATION message on the uplink DCCH. When SS receives this message, it transmit an erroneous UE CAPABILITY INFORMATION CONFIRM message. The content of this message is lack of a mandatory IE~~a concatenation of the message type IE and an arbitrary 32 bits string~~. The UE shall detect a protocol error and send RRC STATUS message to report this event. After receiving RLC acknowledgement for this message, the UE shall re-transmit UE CAPABILITY INFORMATION message on the uplink DCCH. SS completes this test by an error-free UE CAPABILITY INFORMATION CONFIRM message similar to the message sent in step 6.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_DCH state after an outgoing call has been established successfully.
2	←		UE CAPABILITY ENQUIRY	See specific message contents for this message
3	→		RRC STATUS	The IE “Protocol error cause” found in IE “Protocol error information” should be set to “Information element value not comprehended”
4	←		UE CAPABILITY ENQUIRY	Use default message.
5	→		UE CAPABILITY INFORMATION	The message shall includethe IE “Inter-system message”, which carries the GSM classmark information requested.
6	←		UE CAPABILITY INFORMATION CONFIRM	Use default message.
7	←		UE CAPABILITY ENQUIRY	Same as in step 4.
8	→		UE CAPABILITY INFORMATION	Shall be the same message content as in step 5.
9	←		UE CAPABILITY INFORMATION CONFIRM	See specific message contents for this message~~This message contains an arbitrary 32-bits patterns, following the IE “Message Type”~~
10	→		RRC STATUS	UE shall detect an error and then transmit this message.
11	→		UE CAPABILITY INFORMATION	UE shall re-transmit this message after receiving acknowledgement from the SS for RRC STATUS message.
12	←		UE CAPABILITY INFORMATION CONFIRM	SS sends an error-free message to acknowledge the receipt of the uplink message.

Specific Message Contents

UE CAPABILITY ENQUIRY (Step 2)

Information Element	Value/remark
Capability update requirement	
- UE radio access FDD capability update requirement	TRUE
- UE radio access FDD capability update requirement	FALSE
- System specific capability update requirement list	invalid value
- System specific capability update requirement~~Capability update requirement~~	~~TRUE~~
~~- UE radio access capability update requirement~~	~~Contains a spare value in this IE~~
~~- System specific capability update requirement list~~	
~~- System specific capability update requirement~~	

RRC STATUS (Step 3)

Information Element	Value/remark
Protocol Error Information - Protocol Error Cause	Checked to see if set to “Information element not comprehended”

UE CAPABILITY INFORMATION CONFIRM (Step 9)

Information Element	Value/remark
RRC transaction identifier~~Unknown bit pattern~~	Not Present~~An arbitrary 32 bits~~

RRC STATUS (Step 10)

Information Element	Value/remark
Protocol Error Information - Protocol Error Cause	Checked to see if set to “ASN.1 violation or encoding error” ~~or “conditional information element error”~~

8.1.5.1.5 Test requirement

After step 2, the UE shall transmit a RRC STATUS message on the uplink DCCH, reporting the error with protocol error cause set to “Information element value not comprehended”.

After step 4 the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH to respond to the UE CAPABILITY ENQUIRY message.

After step 9, the UE shall transmit a RRC STATUS message on the uplink DCCH. The protocol error cause shall be set to “ASN.1 violation or encoding error” ~~or “conditional information element error”~~.

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

8.1.5.2 UE Capability in CELL_DCH state: Success after T304 timeout

8.1.5.2.1 Definition

8.1.5.2.2 Conformance requirement

1. The UE CAPABILITY ENQUIRY message is sent by the UTRAN to request the UE to transmit its capability information related to any radio access network that is supported by the UE, if the UTRAN needs an update of the UE’s UMTS capability information or of its inter-system classmark.

2. After the UE receives a UE CAPABILITY ENQUIRY message, it transmits a UE CAPABILITY INFORMATION message on the uplink DCCH. If it fails to receive a UE CAPABILITY INFORMATION CONFIRM message, the UE re-transmits another UE CAPABILITY INFORMATION message until V304 is greater than N304.

Reference

3GPP TS 25.331 clause 8.1.6, 7

8.1.5.2.3 Test purpose

To confirm that the UE re-transmits a UE CAPABILITY INFORMATION message until V304 is greater than N304, after the expiry of timer T304 when the UE cannot receive a UE CAPABILITY INFORMATION CONFIRM message in response to a UE CAPABILITY INFORMATION message.

8.1.5.2.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_DCH state (state 6-1 or state 6-3) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE is brought to CELL_DCH state. When the SS transmits a UE CACAPABILITY ENQUIRY message which includes the "Capability update requirement" IE, the UE shall reply with a UE CAPABILITY INFORMATION message on the uplink DCCH which includes the "Inter-system message" IE. The SS does not transmits a UE CAPABILITY INFORMATION CONFIRM message to the UE, resulting in the T304 timer to expire. SS shall observe that the UE attempts to transmit a UE CAPABILITY INFORMATION message again. The UE shall re-transmit N304 times, and SS transmits a UE CAPABILITY INFORMATION CONFIRM message to answer the last request and completes this test procedure.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_DCH state. SS sets internal counter K =1
2	←		UE CAPABILITY ENQUIRY	Including the "Capability update requirement"IE.
3	→		UE CAPABILITY INFORMATION	Including the "Inter-system message" IE, which indicated the radio access network supported by the UE.
4				If K is greater to N304, then proceed to step 6.
5				The SS does not transmit a response and wait for T304 timer to expire. K=K+1 and goes to step 3.
6	←		UE CAPABILITY INFORMATION CONFIRM	Use default message contents

Specific Message Contents

None

8.1.5.2.5 Test requirement

After step 3 the UE shall re-transmits a UE CAPABILITY INFORMATION message on the uplink DCCH, after each expiry of timer T304. The UE CAPABILITY INFORMATION message shall contain IE "UE radio access capability" indicating the settings found in PIC/PIXIT statements. IE "UE system specific capability" shall carry relevant GSM classmark information. After (N304+1) re-transmissions, the UE shall receive a UE CAPABILITY INFORMATION CONFIRM message.

8.1.5.3 UE Capability in CELL_DCH state: Failure (After N304 re-transmissions)

8.1.5.3.1 Definition

8.1.5.3.2 Conformance requirement

1. The UE CAPABILITY ENQUIRY message is sent by the UTRAN to request the UE to transmit its capability information related to any radio access network that is supported by the UE if the UTRAN needs an update of the UE's UMTS capability information or of its inter-system classmark.

2. In the case of a failure to transmit a UE CAPABILITY INFORMATION in excess of N304 times, the UE initiates the RRC connection re-establishment procedure.

Reference

3GPP TS 25.331 clause 8.1.6, 8.1.7

8.1.5.3.3 Test purpose

To confirm that the UE stops retrying to transmit a UE CAPABILITY INFORMATION message if V304 is greater than N304. It then initiates the RRC re-establishment procedure.

8.1.5.3.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_DCH state (state 6-1 or state 6-3) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE is brought to CELL_DCH state. When the SS transmits a UE CAPABILITY ENQUIRY message which includes the "Capability update requirement" IE, the UE receives this message and transmits a UE CAPABILITY INFORMATION message on the uplink DCCH which includes the "Inter-system message" IE. The SS does not respond with a UE CAPABILITY INFORMATION CONFIRM message but keeps a count on the number of messages received When the T304 timer expires, the UE shall transmit a UE CAPABILITY INFORMATION message again. After sending (N304+1) messages, the UE shall stop sending UE CAPABILITY INFORMATION messages and initiates the RRC connection re-establishment procedure. This is verified in SS by the reception of RRC CONNECTION RE-ESTABLISHMENT REQUEST. SS allows UE to return to "connected state" by issuing RRC CONNECTION RE-ESTABLISHMENT message on the downlink CCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE starts from CELL_DCH state. SS sets counter K to 1
2	←		UE CAPABILITY ENQUIRY	Including the "Capability update requirement" IE.
3	→		UE CAPABILITY INFORMATION	Including the "Inter-system message" IE.
4				The SS does not transmit a response and allows T304 timer to expire. SS increments counter K If K is greater than N304, proceeds to step 5 else returns to 3.
5	→		RRC CONNECTION RE-ESTABLISHMENT REQUEST	The UE assumes that radio link failure has occurred and transmits this message which includes the IE "U-RNTI" containing the U-RNTI allocated to the UE earlier.
6	←		RRC CONNECTION RE-ESTABLISHMENT	Including the new TFCS according to the new transport channel.
7	→		RRC CONNECTION RE-ESTABLISHMENT COMPLETE	

Specific Message Contents

None

8.1.5.3.5 Test requirement

After step 3 the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH. The UE shall re-transmit this message for N304 times. Thereafter, the UE shall initiate the RRC re-establishment procedure by sending the message RRC CONNECTION RE-ESTALISHMENT REQUEST.

After step 7 the UE shall have a new RRC connection, using the new transport format dictated in the RRC CONNECTION RE-ESTABLISHMENT message.

8.1.5.4 UE Capability in CELL_FACH state: Success

8.1.5.4.1 Definition

8.1.5.4.2 Conformance requirement

1. The UE CAPABILITY ENQUIRY message is sent by the UTRAN to request the UE to transmit its capability information related to any radio access network(s) supported by the UE. UTRAN initiates this procedure when it needs an update of the UE's UMTS capability information or of its inter-system classmark.

2. When the UE receives a UE CAPABILITY ENQUIRY message, the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH.

3. If during the execution of UE capability update procedure, an invalid UE CAPABILITY INFORMATION CONFIRM is received, the UE shall respond with RRC STATUS message and decide whether to re-transmit UE CAPABILITY INFORMATION message by comparing its internal counter against N304.

Reference

3GPP TS 25.331 clause 8.1.6, 8.1.7

8.1.5.4.3 Test purpose

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

8.1.5.4.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_FACH state (state 6-2 or state 6-4) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE is brought to the CELL_FACH state after a successful outgoing call attempt. The SS transmits an erroneous UE CAPABILITY ENQUIRY message containing ~~spare~~ invalid value in the IE "Capability update requirement". After receiving such a message, the UE shall report an error using RRC STATUS message with the appropriate error cause specified. Then SS transmits a UE CAPABILITY ENQUIRY message which includes the IE "Capability update requirement" as a correct message, the UE receives this message and transmits a UE CAPABILITY INFORMATION message on the uplink DCCH, which includes the IE "Inter-system message". The SS transmits a UE CAPABILITY INFORMATION CONFIRM message to the UE to complete the UE capability enquiry procedure. Then SS initiates another UE capability enquiry procedure by transmitting the same UE CAPABILITY ENQUIRY message as in step 4. The UE shall reply with a UE CAPABILITY INFORMATION message on the uplink DCCH. When SS receives this message, it transmits an erroneous UE CAPABILITY INFORMATION CONFIRM message. The content of this message is lack of a mandatory IE~~a concatenation of the message type IE and an arbitrary 32 bits string~~. The UE shall detect a protocol error and send RRC STATUS message to report this event. After receiving the RLC layer acknowledgement PDU for this message, the UE shall re-transmit UE CAPABILITY INFORMATION message on the uplink DCCH. SS completes this test by sending an error-free UE CAPABILITY INFORMATION CONFIRM message similar to the message sent in step 6.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state after an outgoing call has been established successfully.
2	←		UE CAPABILITY ENQUIRY	See specific message contents for this message
3	→		RRC STATUS	The IE "Protocol error cause" found in IE "Protocol error information" should be set to "Information element value not comprehended"
4	←		UE CAPABILITY ENQUIRY	Use default message.
5	→		UE CAPABILITY INFORMATION	The message shall include the IE "Inter-system message", which carries the GSM classmark information requested.
6	←		UE CAPABILITY INFORMATION CONFIRM	Use default message.
7	←		UE CAPABILITY ENQUIRY	Same as in step 4.
8	→		UE CAPABILITY INFORMATION	The message content shall be the same as in step 5.
9	←		UE CAPABILITY INFORMATION CONFIRM	See specific message contents for this message~~This message contains an arbitrary 32-bits patterns, following the IE "Message Type"~~
10	→		RRC STATUS	UE shall detect an error and then transmit this message on uplink DCCH.
11	→		UE CAPABILITY INFORMATION	UE shall re-transmit this message after receiving the RLC acknowledgement PDU for RRC STATUS message from SS.
12	←		UE CAPABILITY INFORMATION CONFIRM	SS sends an error-free message to acknowledge the receipt of the uplink message.

Specific Message Contents

UE CAPABILITY ENQUIRY (Step 2~~ and 7~~)

Information Element	Value/remark
Capability update requirement	
- UE radio access FDD capability update requirement	TRUE
- UE radio access FDD capability update requirement	FALSE
- System specific capability update requirement list	~~Contains a spare value in this Ie~~invalid value
- System specific capability update requirement	

RRC STATUS (Step 3)

Information Element	Value/remark
Protocol Error Information - Protocol Error Cause	Checked to see if set to “Information element not comprehended”

UE CAPABILITY INFORMATION CONFIRM (Step 9)

Information Element	Value/remark
RRC transaction identifier~~Unknown bit pattern~~	Not Present~~An arbitrary 32 bits~~

RRC STATUS (Step 3)

Information Element	Value/remark
Protocol Error Information - Protocol Error Cause	Checked to see if set to “ASN.1 violation or encoding error” ~~or “conditional information element error”~~

8.1.5.4.5 Test requirement

After step 2, the UE shall transmit a RRC STATUS message on the uplink DCCH, reporting the error with protocol error cause set to “Information element value not comprehended”.

After step 4 the UE shall transmit a UE CAPABILITY INFORMATION message on the uplink DCCH to respond to the downlink UE CAPABILITY ENQUIRY message.

After step 9, the UE shall transmit a RRC STATUS message on the uplink DCCH. The protocol error cause shall be set to “ASN.1 violation or encoding error” ~~or “conditional information element error”~~.

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

8.1.5.5 UE Capability in CELL_FACH state: Success after T304 timeout

8.1.5.5.1 Definition

8.1.5.5.2 Conformance requirement

1. The UE CAPABILITY ENQUIRY message is sent by the UTRAN to request the UE to transmit its capability information related to any radio access network(s) supported by the UE. UTRAN initiates this action when it needs an update of the UE’s UMTS capability information or of its inter-system classmark.

2. After the UE receives a UE CAPABILITY ENQUIRY message, it transmits a UE CAPABILITY INFORMATION message on the uplink DCCH. If it fails to receive a UE CAPABILITY INFORMATION CONFIRM message, the UE re-transmits another UE CAPABILITY INFORMATION message until its internal counter V304 is greater than N304.

Reference

3GPP TS 25.331 clause 8.1.6, 7

8.1.5.5.3 Test purpose

To confirm that the UE re-transmits a UE CAPABILITY INFORMATION message until V304 is greater than N304, after the expiry of timer T304 when it fail to receive a downlink UE CAPABILITY INFORMATION CONFIRM message in response to the uplink UE CAPABILITY INFORMATION message sent.

8.1.5.5.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_FACH state (state 6-2 or state 6-4) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE is brought to CELL_FACH state. When the SS transmits a UE CAPABILITY ENQUIRY message which includes the IE “Capability update requirement”, the UE shall reply with a UE CAPABILITY INFORMATION message on the uplink DCCH that contains the IE “Inter-system message”. The SS waits and does not transmit a UE CAPABILITY INFORMATION CONFIRM message to the UE, resulting in the T304 timer to expire. SS shall observe that the UE attempts to transmit a UE CAPABILITY INFORMATION message again. The UE shall re-transmit N304 times, and SS transmits a UE CAPABILITY INFORMATION CONFIRM message to answer the last request and completes this test procedure.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state. SS sets internal counter K =1
2	←		UE CAPABILITY ENQUIRY	Including the IE “Capability update requirement”.
3	→		UE CAPABILITY INFORMATION	Including the IE “Inter-system capability”, which indicated the radio access network supported by the UE.
4				If K is greater to N304,then proceeds to step 6. Else, continue with step 5.
5				The SS does not transmit a response and wait for T304 timer to expire. K=K+1 and goes to step 3.
6	←		UE CAPABILITY INFORMATION CONFIRM	Use default message contents

Specific Message Contents

None

8.1.5.5.5 Test requirement

After step 3 the UE shall re-transmit a UE CAPABILITY INFORMATION message on the uplink DCCH, after each expiry of timer T304. The UE CAPABILITY INFORMATION message shall contain IE ”UE radio access capability” with the value matching those stated in the ICS/IXIT statements. In the same message, IE ”UE system specific capability” shall be present and it carries relevant GSM classmark information. After (N304+1) re-transmissions, the UE shall receive a UE CAPABILITY INFORMATION CONFIRM message.

8.1.6 Direct Transfer

8.1.6.1 Direct Transfer in CELL DCH state (invalid message reception)

8.1.6.1.1 Definition

8.1.6.1.2 Conformance requirement

The UE shall transmit an RRC STATUS message stating the reason "protocol error" in IE "failure cause" and also set value "Information element value not comprehended" in IE "Protocol error cause" when the UE receives a DOWNLINK DIRECT TRANFER message, which does not includes ~~a spare value for~~ the ~~mandatory~~ IE "~~CN domain identity" having criticality defined as "Reject"~~NAS message".

Reference

3GPP TS 25.331 clause 8.1.9

8.1.6.1.3 Test purpose

To confirm that the UE transmits an RRC STATUS message on the DCCH using AM RLC if it receives a DOWNLINK DIRECT TRANSFER message which does not include the ~~specifying a spare value in the mandatory~~ IE "NAS message~~CN domain identity~~"

8.1.6.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_DCH (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 the CELL_DCH state. The SS transmits a DOWNLINK DIRECT TRANSFER message to the UE and does not includes the ~~spare value in the mandatory~~ IE "NAS message~~CN domain identity~~". The UE shall transmit an RRC STATUS message on the DCCH using AM RLC, setting the value "protocol error" in IE "failure cause". The error type "Information element value not comprehended" shall also be indicated in IE "Protocol error cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		DOWNLINK DIRECT TRANSFER	
2	→		RRC STATUS	

Specific Message Contents

DOWNLINK DIRECT TRANSFER

The contents of DOWNLINK DIRECT TRANSFER message in this test case is identical to those in default contents of layer 3 messages for RRC tests with the following exceptions:.

Information Element	Value/remark
NAS message~~CN domain identity~~	~~Spare value~~Not Present

RRC STATUS

Information Element	Value/remark
Message Type	
Protocol error information	Information element value not comprehended
Other information element	Not checked

8.1.6.1.5 Test requirement

After step 1 the UE shall transmit a n RRC STATUS message on the DCCH using AM RLC setting "protocol error" in IE "failure cause" and setting "Information element value not comprehended" in IE "Protocol error cause".

8.1.6.2 Direct Transfer in CELL FACH state (invalid message reception)

8.1.6.2.1 Definition

8.1.6.2.2 Conformance requirement

The UE shall transmit an RRC STATUS message stating the reason "protocol error" in IE "failure cause" and also set value "Information element value not comprehended" in IE "Protocol error cause" when the UE receives a DOWNLINK DIRECT TRANFER message, which does not include~~s a spare value for~~ the ~~mandatory~~ IE "NAS message~~CN domain identity~~" ~~having criticality defined as "Reject"~~.

Reference

3GPP TS 25.331 clause 8.1.9

8.1.6.2.3 Test purpose

To confirm that the UE transmits an RRC STATUS message on the DCCH using AM RLC if it receives a DOWNLINK DIRECT TRANSFER message which does not include~~specifying a spare value in~~ the ~~mandatory~~ IE "NAS message~~CN domain identity~~".

8.1.6.2.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_FACH (state 6-2 or state 6-4) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE is in the CELL_FACH state. The SS transmits a DOWNLINK DIRECT TRANSFER message to the UE and does not include ~~includes~~ the ~~spare value in the mandatory~~ IE "NAS message~~CN domain identity~~". The UE shall transmit an RRC STATUS message on the DCCH using AM RLC, setting the value "protocol error" in IE "failure cause". The error type "Information element value not comprehended" shall also be indicated in IE "Protocol error cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	DOWNLINK DIRECT TRANSFER	
2		→	RRC STATUS	

Specific Message Contents

DOWNLINK DIRECT TRANSFER

The contents of DOWNLINK DIRECT TRANSFER message in this test case is identical to those in default contents of layer 3 messages for RRC tests with the following exceptions:.

Information Element	Value/remark
NAS message~~CN domain identity~~	~~Spare value~~Not Present

RRC STATUS

Information Element	Value/remark
Message Type	
Protocol error information	Information element value not comprehended
Other information element	Not checked

8.1.6.2.5 Test requirement

After step 1 the UE shall transmit a n RRC STATUS message on the DCCH using AM RLC setting “protocol error” in IE “failure cause” and setting “Information element value not comprehended” in IE “Protocol error cause”.

8.1.7 Security mode control

8.1.7.1 Security mode control in CELL_DCH state

8.1.7.1.1 Definition

8.1.7.1.2 Conformance requirement

1. This procedure is used to trigger the stop or start of ciphering or to command the restart of ciphering with the new ciphering configuration. It is also used to start integrity protection or modify integrity protection configuration, both for the signalling links and any of radio bearers.

2. When the UE receives a SECURITY MODE COMMAND message from the UTRAN, which indicates the downlink activation time and new integrity protection configuration, the UE shall apply the old ciphering configuration before the stated downlink activation time. It shall start to decipher using the new ciphering configuration at the downlink activation time.

3. After the UE transmit the SECURITY MODE COMPLETE message using the new integrity protection configuration which includes uplink activation time, it starts to cipher transmission in the uplink using the new configuration at the uplink activation time.

Reference

3GPP TS 25.331 clause 8.1.12

8.1.7.1.3 Test purpose

To confirm that the UE correctly communicates to the UTRAN and activates the new ciphering configurations after the stated activation time. To confirm that after the UE receives a SECURITY MODE COMMAND message, it transmits a SECURITY MODE COMPLETE message to the UTRAN using the old ciphering configuration together with the application of the new integrity protection configuration.

8.1.7.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_DCH (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 the RRC connected state CELL_DCH. The SS transmits a SECURITY MODE COMMAND message in which ciphering is requested to be activated, but the IE "Ciphering algorithm capability" is set to an unknown value. The UE shall not trigger any ciphering algorithm and it shall respond by sending SECURITY MODE FAILURE message on the DCCH. Next, SS transmits a valid SECURITY MODE COMMAND message which includes the "Downlink activation time" IE for RB2 and "Integrity check info" IE. Then the UE shall check the integrity check info and shall start to configure ciphering in downlink and transmits a SECURITY MODE COMPLETE message which contains the uplink activation time for RB1,RB2,RB 3 and RB 4 and also "Integrity check info" IE. SS records the uplink ciphering activation time for RB 2. Next, SS transmits COUNTER CHECK message repeated on the downlink DCCH using RLC-AM mode. The UE shall respond to each downlink message with a COUNTER CHECK RESPONSE message on the uplink DCCH using RLC-AM. This cycle repeats itself until both the uplink and downlink ciphering activation time for RB 2 has elapsed. SS checks all uplink COUNTER CHECK RESPONSE messages are integrity-protected by UIA algorithm, and that the messages contain the correct values for "Integrity mode info" IE. After both the uplink and downlink ciphering activation time for RB 2 has passed, the UE shall be able to communicate with the SS. This can be verified in SS through the reception of a correctly ciphering and integrity-protected COUNTER CHECK RESPONSE message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				RRC connected state on DCCH
2	←		SECURITY MODE COMMAND	IE "Ciphering Algorithm capability" is set to an invalid value
3	→		SECURITY MODE FAILURE	IE "Failure Cause" should be set to "Protocol Error" and IE "Protocol Error Information" should be set to "Information element value not comprehended".
4	←		SECURITY MODE COMMAND	See specific message contents.
5	→		SECURITY MODE COMPLETE	SS verifies that this message is sent unciphered. SS records the uplink ciphering activation time for RB 2.
6	←		COUNTER CHECK	SS repeats step 6 and step 7 until its internal uplink and downlink RLC SN have both surpassed the uplink and downlink ciphering activation time specified for RB2. This message is sent on the downlink DCCH using RLC-AM. See specific message content.
7	→		COUNTER CHECK RESPONSE	UE shall send this message on the uplink DCCH using RLC-AM. See specific message content.
8				SS verifies that the last COUNTER CHECK RESPONSE message is both integrity-protected and ciphered correctly.

Specific Message Contents

SECURITY MODE COMMAND (Step 2)

See notes below for the value of Y.

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	
Message authentication code	Calculated result in SS
RRC Message sequence number	0
Security Capability	
Ciphering algorithm capability	"1111111111111111"B ~~Spare value~~
Integrity protection algorithm capability	"1111111111111111"B ~~Spare value~~
Ciphering mode info	
Ciphering mode command	Start
Activation time for DPCH	Not Present
Radio bearer downlink ciphering activation time info	
RB Identity	2
RLC sequence number	Current RLC SN + Y
Integrity protection mode info	
Integrity protection mode command	Start
Downlink integrity protection activation info	Not Present
Integrity protection algorithm	If integrity is indicated to be active on IXIT statements in TS 34.123-2, use one of the supported integrity algorithms
Integrity protection initialisation number	0000 0000 0000 0000 H (FRESH)
CN domain identity	Supported domain

SECURITY MODE COMMAND (Step 4)

See notes below for the value of Y.

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	
Message authentication code	Calculated result in SS
RRC Message sequence number	0
Security Capability	
Ciphering algorithm capability	If ciphering is indicated to be active on IXIT statements in TS 34.123-2, use one of the supported ciphering algorithms
Integrity protection algorithm capability	0000000000000010B(UIA1)
Ciphering mode info	Start
Ciphering mode command	Not Present
Activation time for DPCH	
Radio bearer downlink ciphering activation time info	2
RB Identity	Current RLC SN + Y
RLC sequence number	Start
Integrity protection mode info	Not Present
Integrity protection mode command	If integrity is indicated to be active on IXIT statements in TS 34.123-2, use one of the supported integrity algorithms
Downlink integrity protection activation info	0000 0000 0000 0000 H (FRESH)
Integrity protection algorithm	Supported domain
Integrity protection initialisation number	
CN domain identity	

SECURITY MODE COMPLETE (Step 5)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	
- Message Authentication code	Checked to see if present
- RRC Message sequence number	Checked to see if present
Uplink integrity protection activation info	
- RRC message sequence number list	Check to see if it the RRC SN for RB 0 to RB 4 are present
Radio bearer uplink ciphering activation info	
- RB Identity	2
- RLC sequence number	SS records this value. See step 8 in 'expected sequence'

COUNTER CHECK (Step 6)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	Calculated value
RB COUNT-C MSB information	
- RB identity	2
- COUNT-C MSB uplink	Current COUNT-C MSB for RB#2 in uplink
- COUNT-C MSB downlink	Current COUNT-C MSB for RB#2 in downlink

COUNTER CHECK RESPONSE (Step 7)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	Checked to see if the MAC code match
RB COUNT-C information	Check to if this IE is absent
- RB identity	
- COUNT-C uplink	
- COUNT-C downlink	

Note: Y = 2 * (size of COUNTER CHECK message, after PER encoding). The unit of Y is the number of RLC-AM PDU.

8.1.7.1.5 Test requirement

After step 2 the UE shall transmit a SECURITY MODE FAILURE message to report the protocol error detected in the first SECURITY MODE COMMAND message. The UE shall be able to communicate normally with the SS, with all control data on the signalling radio bearers unciphered.

After step 4 the UE shall RLC-acknowledge the receipt of the SECRUITY MODE COMMAND message using unciphered mode and which includes calculated integrity check info. SS checks that the SECURITY MODE COMPLETE message is received unciphered and that the calculated "integrity check info" IE is correct.

After step 5 SS verifies that all uplink signalling messages on RB1, RB2, RB3 and RB4 are integrity protected with UIA1 algorithm.

After step 7 SS verifies that the last COUNTER CHECK RESPONSE message received is integrity protected with UIA algorithm and ciphered with the algorithm indicated in the second SECURITY MODE COMMAND (Step 4) message.

8.1.7.2 Security mode control in CELL_FACH state

8.1.7.2.1 Definition

8.1.7.2.2 Conformance requirement

1. This procedure is used to trigger the stop or start of ciphering, or to command the restart of ciphering with the new ciphering configuration. It is also used to start integrity protection or modify integrity protection configuration, both for signalling link(s) and any radio access bearer(s).

2. When the UE receives a SECURITY MODE COMMAND message from the UTRAN, which indicates the downlink activation time and new integrity protection configuration, the UE shall apply the old ciphering configuration before the stated downlink activation time. It shall start to decipher using the new ciphering configuration at the downlink activation time.

3. The UE shall transmit SECURITY MODE COMPLETE message using the new integrity protection configuration stated in the received SECURITY MODE COMMAND message. The SECURITY MODE COMPLETE message shall include the ciphering uplink activation time. The UE shall start to apply the new ciphering configuration on the uplink direction, after the uplink activation time has elapsed.

Reference

3GPP TS 25.331 clause 8.1.12

8.1.7.2.3 Test purpose

To confirm that after the UE receives a SECURITY MODE COMMAND message, it transmits a SECURITY MODE COMPLETE message to the UTRAN using the old ciphering configuration together with the application of the new integrity protection configuration. To confirm that the UE applies the old ciphering configuration in the downlink prior to the activation time; and uses the new ciphering configuration on and after the activation time. To confirm that the UE starts to cipher its uplink transmissions after the uplink activation time stated in SECURITY MODE COMPLETE message is reached.

8.1.7.2.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_FACH (state 6-2 or state 6-4) as specified in clause 7.4 of TS 34.108 ,depending on the CN domain(s) supported by the UE

Test Procedure

The UE is in the RRC connected state CELL_FACH. The SS transmits a SECURITY MODE COMMAND message in which ciphering is requested to be activated, but the IE "Ciphering algorithm capability" is set to an unknown value. The UE shall not trigger any ciphering algorithm and it shall respond by sending SECURITY MODE FAILURE message on the DCCH. Next, SS transmits a valid SECURITY MODE COMMAND message which includes IE "Downlink activation time" for RB2 and IE "Integrity check info". The UE shall check the integrity check info. It shall start to configure ciphering in downlink and transmit a SECURITY MODE COMPLETE message, which contains the uplink activation time for RB2. This message shall contain the IE "Integrity check info". SS records the uplink ciphering activation time for RB 2. Next, SS transmits COUNTER CHECK message repeated on the downlink DCCH using RLC-AM mode. The UE shall respond to each downlink message with a COUNTER CHECK RESPONSE message on the uplink DCCH using RLC-AM. SS confirms that the uplink COUNTER CHECK RESPONSE messages are not ciphered. SS also checks all uplink messages are integrity-protected by UIA1 algorithm, and that the messages contain the correct values for "Integrity mode info" IE. This cycle repeats itself until both the uplink and downlink ciphering activation time for RB 2 have elapsed. After both the uplink and downlink ciphering activation time for RB 2 have passed, the UE shall be able to communicate with the SS using the new ciphering configurations. This can be verified in SS through the reception of a correctly ciphered and integrity-protected COUNTER CHECK RESPONSE message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is initially in CELL_FACH state.
2		←	SECURITY MODE COMMAND	IE "Ciphering Algorithm capability" is set to an invalid value
3		→	SECURITY MODE FAILURE	IE "Failure Cause" shall be set to "Protocol Error" and IE "Protocol Error Information" shall be set to "Information element value not comprehended".
4		←	SECURITY MODE COMMAND	See specific message contents.
5		→	SECURITY MODE COMPLETE	SS verifies that this message is sent unciphered. SS records the uplink ciphering activation time for RB 2.
6		←	COUNTER CHECK	SS repeats step 6 and step 7 until its internal uplink and downlink RLC sequence numbers have both surpassed the uplink and downlink ciphering activation times specified for RB2. This message is sent on the downlink DCCH using RLC-AM. See specific message content.
7		→	COUNTER CHECK RESPONSE	UE shall send this message on the uplink DCCH using RLC-AM. See specific message content.
8				SS verifies that the last COUNTER CHECK RESPONSE message is both integrity-protected and ciphered correctly.

Specific Message Contents

SECURITY MODE COMMAND (Step 2)

See notes below for the value of Y.

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	
Message authentication code	Calculated result in SS
RRC Message sequence number	0
Security Capability	
Ciphering algorithm capability	"1111111111111111"B ~~Spare value~~
Integrity protection algorithm capability	"1111111111111111"B~~Spare value~~
Ciphering mode info	
Ciphering mode command	Start
Activation time for DPCH	Not Present
Radio bearer downlink ciphering activation time info	
RB Identity	2
RLC sequence number	Current RLC SN + Y
Integrity protection mode info	
Integrity protection mode command	Start
Downlink integrity protection activation info	Not Present
Integrity protection algorithm	If integrity is indicated to be active on IXIT statements in TS 34.123-2, use one of the supported integrity algorithms
Integrity protection initialisation number	0000 0000 0000 0000 H (FRESH)
CN domain identity	Supported domain

SECURITY MODE COMMAND (Step 4)

See notes below for the value of Y.

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	
Message authentication code	Calculated result in SS
RRC Message sequence number	0
Security Capability	
Ciphering algorithm capability	If ciphering is indicated to be active on IXIT statements in TS 34.123-2, use one of the supported ciphering algorithms
Integrity protection algorithm capability	0000000000000010B(UIA1)
Ciphering mode info	Start
Ciphering mode command	Not Present
Activation time for DPCH	
Radio bearer downlink ciphering activation time info	2
RB Identity	Current RLC SN + Y
RLC sequence number	Start
Integrity protection mode info	Not Present
Integrity protection mode command	If integrity is indicated to be active on IXIT statements in TS 34.123-2, use one of the supported integrity algorithms
Downlink integrity protection activation info	
Integrity protection algorithm	
Integrity protection initialisation number	0000 0000 0000 0000 H (FRESH)
CN domain identity	Supported domain

SECURITY MODE COMPLETE (Step 5)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	
- Message Authentication code	Checked to see if present
- RRC Message sequence number	Checked to see if present
Uplink integrity protection activation info	
- RRC message sequence number list	Check to see if it the RRC SN for RB 0 to RB 4 are present
Radio bearer uplink ciphering activation info	
- RB Identity	2
- RLC sequence number	SS records this value. See step 8 in 'expected sequence'

COUNTER CHECK (Step 6)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	Calculated value
RB COUNT-C MSB information	
- RB identity	2
- COUNT-C MSB uplink	Current COUNT-C MSB for RB#2 in uplink
- COUNT-C MSB downlink	Current COUNT-C MSB for RB#2 in downlink

COUNTER CHECK RESPONSE (Step 7)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	Checked to see if the MAC code match
RB COUNT-C information	Check to if this IE is absent
- RB identity	
- COUNT-C uplink	
- COUNT-C downlink	

Note: Y = 2 * (size of COUNTER CHECK message, after PER encoding). The unit of Y is the number of RLC-AM PDU.

8.1.7.2.5 Test requirement

After step 2 the UE shall transmit a SECURITY MODE FAILURE message to report the protocol error detected in the first SECURITY MODE COMMAND message. The UE shall be able to communicate normally with the SS, with all control data on the signalling radio bearers unciphered.

After step 4 the UE shall RLC-acknowledge the receipt of the SECRUITY MODE COMMAND message using unciphered mode and which includes calculated integrity check info. SS checks that the SECURITY MODE COMPLETE message is received unciphered and that the calculated MAC-I values in “integrity check info” IE is correct.

After step 5 SS verifies that all uplink signalling messages on RB1, RB2, RB3 and RB4 are integrity protected with UIA1 algorithm.

After step 7 SS verifies that the last COUNTER CHECK RESPONSE message received is integrity protected with UIA1 algorithm and ciphered with the algorithm indicated in the second SECURITY MODE COMMAND (Step 4) message.

8.1.8 Counter check

8.1.8.1 Counter check in CELL_DCH state

8.1.8.1.1 Definition

8.1.8.1.2 Conformance requirement

When the UE receives a COUNTER CHECK message that includes matched COUNT-C MSB values, the UE shall transmit a COUNTER CHECK RESPONSE message on the uplink DCCH and omitting “RB COUNT-C information” IE in this message.

When the UE receives a COUNTER CHECK message that includes any mismatched COUNT-C MSB values, the UE shall transmit a COUNTER CHECK RESPONSE message on the uplink DCCH and specifies the current COUNT-C information of the RAB(s) with mismatched values.

Reference

3GPP TS 25.331 clause 8.1.15

8.1.8.1.3 Test purpose

To confirm that the UE transmits a COUNTER CHECK RESPONSE message after it receives a COUNTER CHECK message from the SS. To confirm that the UE responds to the reception of an invalid downlink COUNTER CHECK message by transmitting a RRC STATUS message on the uplink DCCH, stating the correct error cause value in message.

8.1.8.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_DCH state (~~state 6-9 or~~ state 6-10) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is brought to the CELL_DCH state after a successful outgoing call attempt. The SS transmits an erroneous COUNTER CHECK message. The content of this message is lack of a mandatory IE~~a concatenation of the message type IE and an arbitrary 32 bits string~~. The UE shall detect a protocol error and send RRC STATUS message to report this event. Next, the SS transmits a COUNTER CHECK message that includes the current COUNT-C MSB information in each radio access bearer. The UE shall react by sending a COUNTER CHECK RESPONSE message on the uplink DCCH, which does not include "RB COUNT-C information" IE. The SS transmits a COUNTER CHECK message which includes the current COUNT-C MSB information reversed all the bits in each radio bearer. The UE shall send a COUNTER CHECK RESPONSE message on the uplink DCCH, specifying the current COUNT-C information for each radio access bearer established.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_DCH state after an outgoing call has been established successfully.
2	←		COUNTER CHECK	See specific message contents for this message~~This message contains an arbitrary 32-bits pattern, following the IE "Message Type"~~
3	→		RRC STATUS	UE shall detect a protocol error and then transmit this message.
4	←		COUNTER CHECK	See specific message content.
5	→		COUNTER CHECK RESPONSE	The message shall not include the IE "RB COUNT-C information".
6	←		COUNTER CHECK	See specific message content.
7	→		COUNTER CHECK RESPONSE	The message shall include the IE "RB COUNT-C information".

Specific Message Contents

COUNTER CHECK (Step 2)

Information Element	Value/remark
RRC transaction identifier~~Unknown bit pattern~~	Not Present~~An arbitrary 32-bits string~~

RRC STATUS (Step 3)

Information Element	Value/remark
Protocol Error Information - Protocol Error Cause	 Checked to see if set to "ASN.1 violation or encoding error" ~~or "conditional information element error"~~

COUNTER CHECK (Step 4)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	Calculated value
RB COUNT-C MSB information	
- RB identity	~~5~~20
- COUNT-C MSB uplink	Current COUNT-C MSB for RB#~~5~~ 20 in uplink
- COUNT-C MSB downlink	Current COUNT-C MSB for RB#~~5~~ 20 in downlink

COUNTER CHECK RESPONSE (Step 5)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	Not checked
RB COUNT-C information	Check to if this IE is absent
- RB identity	
- COUNT-C uplink	
- COUNT-C downlink	

COUNTER CHECK (Step 6)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	Calculated value
RB COUNT-C MSB information	
- RB identity	Check to see if set to ~~4~~20
- COUNT-C MSB uplink	Toggle all bits of the current COUNT-C MSB in uplink for RB#~~5~~20
- COUNT-C MSB downlink	Toggle all bits of the current COUNT-C MSB in downlink for RB#520

COUNTER CHECK RESPONSE (Step 7)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	Not checked
RB COUNT-C information	
- RB identity	Check to see if set to ~~5~~20
- COUNT-C uplink	Check to see if set to Current COUNT-C for RB#~~5~~ 20 in uplink
- COUNT-C downlink	Check to see if set to COUNT-C for RB#~~5~~ 20 in downlink

8.1.8.1.5 Test requirement

After step 2, the UE shall transmit a RRC STATUS message on the uplink DCCH. The protocol error cause shall be set to "ASN.1 violation or encoding~~" or "conditional information element~~ error".

After step 4 the UE shall transmit a COUNTER CHECK RESPONSE message which does not includes the IE "RB COUNT-C information" to indicates that a matched comparison result is obtained.

After step 6, the UE shall transmit a COUNTER CHECK RESPONSE message which includes the IE "RB COUNT-C information" to report that a mismatch in COUNT-C value is detected in RB#~~5~~20.

8.1.8.2 Counter check in CELL_FACH state

8.1.8.2.1 Definition

8.1.8.2.2 Conformance requirement

When the UE receives a COUNTER CHECK message that includes matched COUNT-C MSB values, the UE shall transmit a COUNTER CHECK RESPONSE message on the uplink DCCH and omitting "RB COUNT-C information" IE in this message.

When the UE receives a COUNTER CHECK message that includes any mismatched COUNT-C MSB values, the UE shall transmit a COUNTER CHECK RESPONSE message on the uplink DCCH and specifies the current COUNT-C information of the RAB(s) with mismatched values.

Reference

3GPP TS 25.331 clause 8.1.15

8.1.8.2.3 Test purpose

To confirm that the UE transmits a COUNTER CHECK RESPONSE message after it receives a COUNTER CHECK message from the SS. To confirm that the UE responds to the reception of an invalid downlink COUNTER CHECK message by transmitting a RRC STATUS message on the uplink DCCH, stating the correct error cause value in message.

8.1.8.2.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is brought to the CELL_FACH state after a successful outgoing call attempt. The SS transmits an erroneous COUNTER CHECK message. The content of this message is lack of a mandatory IE~~a concatenation of the message type IE and an arbitrary 32 bits string~~. The UE shall detect a protocol error and send RRC STATUS message to report this event. Next, the SS transmits a COUNTER CHECK message that includes the current COUNT-C MSB information in each radio access bearer. The UE shall react by sending a COUNTER CHECK RESPONSE message on the uplink DCCH, which does not include "RB COUNT-C information" IE. The SS transmits a COUNTER CHECK message, which includes the current COUNT-C MSB information for each radio bearer but with all the bits reversed. The UE shall send a COUNTER CHECK RESPONSE message on the uplink DCCH, specifying the current COUNT-C information for each radio access bearer established.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_FACH state after an outgoing call has been established successfully.
2	←		COUNTER CHECK	See specific message contents for this message~~This message contains an arbitrary 32-bits pattern, following the IE "Message Type"~~
3	→		RRC STATUS	UE shall detect a protocol error and then transmit this message.
4	←		COUNTER CHECK	See specific message content.
5	→		COUNTER CHECK RESPONSE	The message shall not include the IE "RB COUNT-C information".
6	←		COUNTER CHECK	See specific message content.
7	→		COUNTER CHECK RESPONSE	The message shall include the IE "RB COUNT-C information".

Specific Message Contents

COUNTER CHECK (Step 2)

Information Element	Value/remark
RRC transaction identifier~~Unknown bit pattern~~	Not Present~~An arbitrary 32-bits string~~

RRC STATUS (Step 3)

Information Element	Value/remark
Protocol Error Information - Protocol Error Cause	 Checked to see if set to "ASN.1 violation or encoding" or "conditional information element error"

COUNTER CHECK (Step 4)

Information Element	Value/remark
RRC transaction identifier Integrity check info RB COUNT-C MSB information - RB identity - COUNT-C MSB uplink - COUNT-C MSB downlink	0 Calculated value ~~5~~20 Current COUNT-C MSB for RB#~~5~~ 20 in uplink Current COUNT-C MSB for RB#~~5~~ 20 in downlink

COUNTER CHECK RESPONSE (Step 5)

Information Element	Value/remark
RRC transaction identifier Integrity check info RB COUNT-C information - RB identity - COUNT-C uplink - COUNT-C downlink	0 Not checked Check to if this IE is absent

COUNTER CHECK (Step 6)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	Calculated value
RB COUNT-C MSB information	
- RB identity	~~Check to see if set to 4~~20
- COUNT-C MSB uplink	Toggle all bits of the current COUNT-C MSB in uplink for RB#~~5~~20
- COUNT-C MSB downlink	Toggle all bits of the current COUNT-C MSB in downlink for RB#~~5~~20

COUNTER CHECK RESPONSE (Step 7)

Information Element	Value/remark
RRC transaction identifier	0
Integrity check info	Not checked
RB COUNT-C information	
- RB identity	Check to see if set to ~~5~~20
- COUNT-C uplink	Check to see if set to Current COUNT-C for RB#~~5~~ 20 in uplink
- COUNT-C downlink	Check to see if set to COUNT-C for RB#~~5~~ 20 in downlink

8.1.8.2.5 Test requirement

After step 2, the UE shall transmit a RRC STATUS message on the uplink DCCH. The protocol error cause shall be set to "ASN.1 violation or encoding~~" or "conditional information element~~ error".

After step 4 the UE shall transmit a COUNTER CHECK RESPONSE message which does not includes the IE "RB COUNT-C information" to indicates that a matched comparison result is obtained.

After step 6, the UE shall transmit a COUNTER CHECK RESPONSE message which includes the IE "RB COUNT-C information" to report that a mismatch in COUNT-C value is detected in RB#~~5~~20.

8.1.9 Signalling Connection Release Request

8.1.9.1 Definition

8.1.9.2 Conformance requirement

The UE shall initiate the signalling connection release procedure when the higher layer entities in the UE request to release one or more signalling session (one example of such case is location update failure). In this case, the UE shall transmit a SIGNALLING CONNECTION RELEASE REQUEST message, which includes the CN domain identity ~~flow identifier~~ of the ~~signalling~~ connection flow to be released.

Reference

3GPP TS 25.331 clause 8.1.14

8.1.9.3 Test purpose

To confirm that the UE transmits a SIGNALLING CONNECTION RELEASE REQUEST message after it fails to receive a response for the LOCATION UPDATING REQUEST message.

8.1.9.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: Switched off (state 1) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is turned on and it shall find a suitable cell to camp on. The UE shall initiate a location updating procedure. The UE shall establish an RRC connection and transmits a LOCATION UPDATING REQUEST message using the INITIAL DIRECT TRANSFER message. The SS does not respond to this message, and the UE shall send a SIGNALLING CONNECTION RELEASE REQUEST message which includes the CN domain identity ~~flow identifier~~ with the same value as that in the INITIAL DIRECT TRANSFER message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is powered on.
2	→		RRC CONNECTION REQUEST	UE shall initiate the location updating procedure.
3	←		RRC CONNECTION SETUP	
4				The UE configures the layer 2 and layer 1.
5	→		RRC CONNECTION SETUP COMPLETE	
6	→		INITIAL DIRECT TRANSFER (LOCATION UPDATING REQUEST)	LOCATION UPDATE REQUEST is embedded in this message transmission.
7				The SS does not respond and waits until the timer for location update procedure expires.
8	→		SIGNALLING CONNECTION RELEASE REQUEST	

Specific Message Content

SIGNALLING CONNECTION RELEASE REQUEST (Step 8)

Information Element	Value/remark
CN domain identity~~Flow Identifier~~	Check to see if this value is the as same as in the uplink INITIAL DIRECT TRANSFER message.

8.1.9.5 Test requirement

After step 1 the UE shall initiate the LOCATION UPDATING procedure and establish an RRC connection.

After step 7 the UE shall transmit a SIGNALLING CONNECTION RELEASE REQUEST message which includes the same CN domain identity ~~flow identifier~~ as that found in the INITIAL DIRECT TRANSFER message.

8.2 Radio Bearer control procedure

8.2.1 Radio Bearer Establishment

8.2.1.1 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (Data integrity protection algorithm is not applied)

8.2.1.1.1 Definition

8.2.1.1.2 Conformance requirement

The UE shall correctly set up a radio bearer according to a RADIO BEARER SETUP message and communicate with the UTRAN for its implementation.

(This is the case where data integrity protection algorithm is not applied.)

Reference

3GPP TS 25.331 clause 8.2.1

8.2.1.1.3 Test purpose

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

8.2.1.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CS-DCCH_DCH (state 6-5) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the CELL_DCH state, after the test operator is prompted to make an out-going call. Before step 1, only signalling radio bearers have been established. The SS transmits a RADIO BEARER SETUP message to the UE after it sets up L1 including the start of tx/rx. This message requests the establishment of RABs for carrying the traffic of the speech call. After the UE receives this message, it configures them and establishes a radio bearer. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. Then the UE and the SS enters the communicating state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	This message do not contain IE “integrity check info” and “integrity protection mode info”
2	→		RADIO BEARER SETUP COMPLETE	This message do not contain “integrity check info” and “Uplink integrity activation info
3				To confirm the communication.

Specific Message Contents

For RADIO BEARER SETUP in step 1, using the message sub-type indicated as “Speech in CS” or “Non-speech in CS” found in default message content clause 9 of TS 34.108 and Annex A of TS 34.123-1, respectively.

8.2.1.1.5 Test requirement

After step 2 the UE shall communicate with the SS on the radio bearer for its implementation.

8.2.1.2 Radio Bearer Establishment for transition from CELL_DCH to CELL_DCH: Success (Effected Data integrity protection algorithm)

8.2.1.2.1 Definition

8.2.1.2.2 Conformance requirement

The UE shall correctly set up a radio bearer according to a RADIO BEARER SETUP message, which applies data integrity function, and then communicate with the UTRAN for its implementation.

Reference

3GPP TS 25.331 clause 8.2.1, 8.5.11.

8.2.1.2.3 Test purpose

To confirm that the UE establishes a new radio bearer according to a RADIO BEARER SETUP message which contains IE “Integrity check info” and IE “Integrity protection mode info” received from the SS.

8.2.1.2.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CS-DCCH_DCH (state 6-5) as specified in clause 7.4 of TS 34.108 and data integrity algorithm is not applied

Test Procedure

The UE is in the CELL_DCH state, after the test operator is prompted to make an out-going data call. Before step 1, only signalling radio bearers have been established. The SS transmits a RADIO BEARER SETUP message which is including IE “integrity check info” and “integrity protection mode info” to the UE after it sets up L1 including the start of tx/rx. This message requests the establishment of RABs for carrying the traffic of the call. After the UE receives this message, it configures them and establishes a radio bearer. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message which is including IE “integrity check info” using AM RLC. Then the UE and the SS enters the communicating state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	This message contain IE “integrity check info” and “integrity protection mode info”
2	→		RADIO BEARER SETUP COMPLETE	This message contain “integrity check info”
3				To confirm the communication.

Specific Message Contents

For RADIO BEARER SETUP in step 1, using the message sub-types indicated as “Speech in CS” or “Non-spech in CS” as found in default message content clause 9 of TS 34.108 and Annex A, respectively.

RADIO BEARER SETUP

The contents of RADIO BEARER SETUP message in this test case is identical with the following exceptions:

Information Element	Value/remark
Integrity check info	
- Message authentication code	Bit string (32) MAC-I See TS 33.102
- RRC Message sequence number	0
Integrity protection mode info	Present
- Integrity protection mode command	“Start”
- Downlink integrity protection activation info	Not present (It is needed only when the IE “Integrity protection mode command" has the value “modify”.)
- integrity protection algorithm	UIA1
- integrity protection initialisation number	Bit string (32) FRESH See TS 33.102

RADIO BEARER SETUP COMPLETE

Information Element	Value/remark
Integrity check info	
- Message authentication code	Not checked(MAC-I See TS 33.102)
- RRC Message sequence number	Not checked
Uplink Integrity protection activation info	Not checked
Hyper Frame Number	Not checked

8.2.1.2.5 Test requirement

After step 2 the UE shall communicate with the SS on the radio bearer for its implementation. This can be verified by the correct reproduction of the u-plane data transmitted and received between the test operator and SS.

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 old 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) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the CELL_DCH state. The SS transmits a RADIO BEARER SETUP message as 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 "Speech in CS" or "Non-speech in CS" as found in default message content clause 9 of TS 34.108 and Annex A respectively with the following exceptions:

Information Element	Value/remark
Frequency info - UARFCN uplink(Nu) - UARFCN downlink(Nd)	 16383. Not Present.

RADIO BEARER SETUP FAILURE

Information Element	Value/remark
Message Type Failure cause Other information element	 Configuration ~~unsopported~~unsupported Not checked

8.2.1.3.5 Test requirement

After step 1 the UE shall keep its configuration and 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 by the T312 expiry 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 when the UE fails to configure the new radio bearer following detection of physical channel failure after T312 expiry.

8.2.1.4.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CS-DCCH_DCH (state 6-5) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the CELL_DCH state. The SS transmits a RADIO BEARER SETUP message to the UE and does not configure the new radio bearer. 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 does not configure the new radio bearer stated in the message.
2				The UE does not configure the new radio bearer and reverts to the old configuration.
3		→	RADIO BEARER SETUP FAILURE	UE shall transmit this message using the old RRC signalling bearer operating in RLC-AM mode.

Specific Message Contents

RADIO BEARER SETUP

The contents of RADIO BEARER SETUP message in this test case is indicated as “Speech in CS” or “Non-speech in CS“ as found in default message content clause 9 of TS 34.108 and Annex A, respectively.

RADIO BEARER SETUP FAILURE

Information Element	Value/remark
Message Type	
Failure cause	Physical channel failure
Other information element	Not checked

8.2.1.4.5 Test requirement

After step 2 the UE shall revert to the old configuration 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".

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 ~~n RRC connection re-establishment~~ 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 transmit 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 ~~the UE~~it completes ~~initiates an~~ cell update ~~RRC connection re-establishment~~ procedure when the UE cannot establish the new radio bearer for the L1 configuration and cannot revert to the old configuration.

8.2.1.5.4 Method of test

Initial Condition

System Simulator: 2 cells- Cell 1 is active, Cell 2 is inactive

UE: CS-DCCH_DCH (state 6-5) as specified in clause 7.4 of TS 34.108 in cell No.1

Test Procedure

The UE is in the CELL_DCH state in cell 1.~~The SS begins to broadcast the BCCH in cell 2, with a power level suitable for camping but lower than that of cell 1. Next,~~ SS transmits a RADIO BEARER SETUP message to the UE. The SS transmits a RADIO BEARER SETUP message to the UE. After transmitting the RADIO BEARER SETUP message, the SS shall not configure L1 in accordance to the settings in the message. At the same time, SS begins to broadcast the BCCH in a cell 2. The UE recognize that it cannot configure the new radio bearer and wants to revert to the old configuration, but the UE cannot revert to the old configuration. The UE shall select Cell 2 by performing cell re-selection and enter CELL FACH state. 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 UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and subsequently transmits RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value of IE "failure cause" to " physical channel failure".

~~As the SS does not configure the new radio bearer and deletes the old configuration. The UE fails to configure L1 and fails to revert to the old configurationThen the UE shall find cell 2 and transmits to it an RRC CONNECTION RE-ESTABLISHMENT REQUEST message, which includes the IE "U-RNTI" on the uplink CCCH. The SS transmits an RRC CONNECTION RE-ESTABLISHMENT message, which includes a new TFCS according to the new transport channel. After the UE receives an RRC CONNECTION RE-ESTABLISHMENT message, it reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
~~1~~	~~—←~~		~~BCCH~~	~~The SS transmits a BCCH in cell 2 but with a lower power level than in cell 1.~~
~~2~~1	←		RADIO BEARER SETUP	The SS does not configure the new radio bearer and delete the old configuration.
2	~~←~~		BCCH	The SS does not configure the new radio bearer and starts to transmit the BCCH in cell 2
3				The UE shall detect a failure to configure the new radio bearers and also subsequently, cannot revert to old configuration.
4				The UE select the cell 2 and enter CELL FACH state.
~~4~~5	→		CELL UPDATE~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~	The value “radio link failure” shall be set in IE ”Cell update cause”.~~The UE shall detect the presence of cell 2 and transmits this message which includes the IE “U-RNTI” it has been assigned to.~~
~~5~~6	←		CELL UPDATE CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT~~	This message include IE “new U-RNTI” and IE “new C-RNTI”~~Including the new TFCS according to the new transport channel.~~
~~6~~7	→		UTRAN MOBILITY INFORMATION CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT COMPLETE~~	This message include IE “new U-RNTI” and IE “new C-RNTI”
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 indicated as “Speech in CS” or “Non-speech in CS“ as found in default message content clause 9 of TS 34.108 and Annex A

CELL UPDATE (Step 5)

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	Assigned previously in cell 1
- S-RNTI	Assigned previously in cell 1
Cell Update Cause	“radio link failure”

CELL UPDATE CONFIRM (Step 7)

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 7
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 RECONFIGURATION FAILURE (Step 8)

Information Element	Value/remark
Message Type	"RADIO BEARER RECONFIGURATION FAILURE"
Failure cause	"physical channel failure"
Other information element	Not checked

8.2.1.5.5 Test requirement

After step 3 the UE shall find a new cell 2, enter CELL_FACH state~~.~~;

After step 8 the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 9 the UE shall transmit RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to " physical channel failure".

~~and transmit RRC CONNECTION RE-ESTABLISHMENT REQUEST message.~~

~~After step 6 the UE shall re-establish an RRC connection in cell 2.~~

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 whilst reconfiguring due to a radio bearer message other than RADIO BEARER SETUP, then it shall keep its configuration as if the RADIO BEARER SETUP message had not been received.

~~If the UE is reconfiguring itself after receiving a radio bearer message other than RADIO BEARER SETUP message, and when the UE subsequently receive a RADIO BEARER SETUP message, the UE shall transmit an RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to"incompatible simultaneous reconfiguration" in IE "failure case".~~

Reference

3GPP TS 25.331 clause 8.2.1

8.2.1.6.3 Test purpose

To confirm that if the UE receives a RADIO BEARER SETUP message whilst reconfiguring 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 according to the previously received message.

~~To confirm that the UE keeps its configuration and transmits an RADIO BEARER SETUP FAILURE message when the UE receives a RADIO BEARER SETUP message before the UE configures the radio bearer according to a message.~~

8.2.1.6.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CS-DCCH+DTCH_DCH (state 6-9) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the 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 the 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 receives the RADIO BEARER SETUP FAILURE message, the UE reconfigures the new physical channel parameters and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC.~~The UE is in the CELL_DCH state. When the SS transmits a RADIO BEARER SETUP message to the UE before the UE configures the radio bearer the UE keeps the old configuration and transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "incompatible simultaneous reconfiguration in IE "failure cause".~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	Including IE "Uplink DPCH info"
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 because of receiving the RADIO BEARER SETUP message.
4	→		RADIO BEARER RECONFIGURATION COMPLETE	This message is on DCCH using AM RLC.

Specific Message Contents

For RADIO BEARER RECONFIGURATION in step 1, use the message sub-type indicated as "Speech in CS" found in Annex A, with the exception of the following Information Elements:

RADIO BEARER RECONFIGURATION (Step 1)

Information Element	Value/remark
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256

RADIO BEARER SETUP (Step 2)

The contents of RADIO BEARER SETUP message in this test case is indicated as "Speech in CS" or "Non-speech in CS" as found in default message content clause 9 of TS 34.108 and Annex A respectively with the following exceptions:

Information Element	Value/remark
Activation Time	Not Present

RADIO BEARER SETUP FAILURE

Information Element	Value/remark
Message Type	
Failure case	Incompatible simultaneous reconfiguration
Other information element	Not checked

8.2.1.6.5 Test requirement

After step 1 The SS transmits a RADIO BEARER SETUP message before the expiry of the activation time specified in the message of step 1.

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 4 the UE communicates with the SS on the DCCH and DTCH using the new physical channel parameters reconfigured as a result of the RADIO BEARER RECONFIGURATION message.

~~After step 2 the UE shall keep its configuration and transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to "Incompatible simultaneous reconfiguration" in IE "failure cause".~~

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 a RADIO BEARER SETUP message, which includes the ~~spare~~ undefined value in the mandatory IE "UTRAN ~~DRX indicator~~cycle length coefficient" and criticality is defined as "Reject". Then it transmits a RADIO BEARER SETUP FAILURE message which is set to "protocol error" in IE "failure cause" and is set to "Information element value not comprehended" in IE "Protocol error cause". The UE shall keep existing configuration before reception of a RADIO BEARER SETUP message which includes some IEs set to invalid value, and then the UE shall transmit RADIO BEARER SETUP FAILURE 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 a RADIO BEARER SETUP message which indicates the ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~" whose criticality is defined as "Reject".

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 invalid value.

8.2.1.7.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CS-DCCH_DCH (state 6-5) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the CELL_DCH state. The SS transmits a RADIO BEARER SETUP message to the UE which indicates a ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~" whose criticality is defined as "Reject". 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 "Information element value not comprehended" in IE "Protocol error cause". The UE keeps initial configuration when SS transmits RADIO

BEARER SETUP message including some IEs set to invalid value. The UE transmit 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	
2	→		RADIO BEARER SETUP FAILURE	The UE does not change the configuration.
3	←		RADIO BEARER SETUP	This message includes IE set to invalid value.
4				The UE does not change the configuration.
5	→		RADIO BEARER SETUP FAILURE	The IE "failure cause" shall be set to "invalid configuration"

Specific Message Contents

RADIO BEARER SETUP (Step 1)

The contents of RADIO BEARER SETUP message in this test case is identical as "Speech in CS" or "Non-speech in CS" as found in default message content clause 9 of TS 34.108 and Annex A respectively with the following exceptions:

Information Element	Value/remark
UTRAN DRX cycle length coefficient~~DRX indicator~~	~~spare~~ Undefined value

RADIO BEARER SETUP FAILURE (Step 2)

Information Element	Value/remark
Message Type	
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	Information element value not comprehended
Other information element	Not checked

RADIO BEARER SETUP (Step 3)

The contents of RADIO BEARER SETUP message in this test case is identical as "Speech in CS" or "Non-speech in CS" as found in default message content clause 9 of TS 34.108 and Annex A respectively with the following exceptions:

Information Element	Value/remark
Added or Reconfigured UL TrCH information	
- Transport channel identity	1
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- RLC size	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE Logical Channel list	
- Explicit List	
- RB identity	2

RADIO BEARER SETUP FAILURE (Step 5)

Information Element	Value/remark
Message Type	
Failure cause	Invalid configuration
Other information element	Not checked

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 “Information element value not comprehended” in IE “Protocol error cause”.

After step 3 the UE shall keep its old configuration

After step 4 the UE shall transmit RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value ” invalid configuration” to IE “failure cause”.

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

8.2.1.8.1 Definition

8.2.1.8.2 Conformance requirement

The UE shall correctly set up a radio bearer according to a RADIO BEARER SETUP message and communicate with the UTRAN for its implementation.

Reference

3GPP TS 25.331 clause 8.2.1

8.2.1.8.3 Test purpose

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

8.2.1.8.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is in the CELL_DCH state, after the test operator is asked to initiate a packet-switched data call. The SS transmits a RADIO BEARER SETUP message to the UE after it sets up L1. After the UE receives this message, it configures them and establishes a radio bearer. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. Then the UE and the SS enters the communicating state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	SS requests test operator to make an outgoing packet-switched data call.
2				The UE select PRACH and S-CCPCH using SIB5 or SIB6 after entering CELL FACH state.
~~2~~3	→		RADIO BEARER SETUP COMPLETE	
~~3~~4				To confirm the communication between UE and SS, based on the exchange of packets.

Specific Message Contents

For RADIO BEARER SETUP message in step 1, use the message sub-type indicated as "Packet to CELL_FACH from CELL_DCH in PS" found in Annex A.

8.2.1.8.5 Test requirement

After step ~~2~~ 3 the UE shall communicate with the SS on the radio bearer for its implementation.

8.2.1.9 Radio Bearer Establishment for transition from CELL_DCH to CELL_FACH: Failure (Cell re-selection~~Physical channel Failure~~)

8.2.1.9.1 Definition

8.2.1.9.2 Conformance requirement

The UE shall initiate the cell update procedure when the UE failed to access the assigned physical channel according to a RADIO BEARER SETUP message when transiting from CELL_DCH state to CELL_FACH state. After the UE completes cell update procedure, the UE transmit RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which sets IE "failure cause" to "cell reselection".

Reference

3GPP TS 25.331 clause 8.2.1

8.2.1.9.3 Test purpose

To confirm that the UE transmit RADIO BEARER SETUP FAILURE message after it completes ~~perform~~ a cell update procedure when the UE cannot use the assigned physical channel according to a RADIO BEARER SETUP message as it transits from CELL_DCH to CELL_FACH.

8.2.1.9.4 Method of test

Initial Condition

System Simulator: 2 cells- Cell 1 is active, Cell 2 is inactive

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

Test Procedure

The UE is in the CELL_DCH state in cell 1. The SS ~~begins to broadcast the BCCH in cell 2 and~~ transmits a RADIO BEARER SETUP message as the transition occurs from CELL_DCH to CELL_FACH and then broadcast BCCH in cell 2. The UE cannot access the assigned physical channel, as the SS does not transmit any data on the downlink common channel in cell 1. Then the UE shall initiate the cell update procedure in cell 2. The UE transmit CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and subsequently transmit RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value of IE "failure cause" to "cell reselection".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		BCCH	The SS broadcasts BCCH in cell No. 2.
2	←		RADIO BEARER SETUP	Assigned the transition from CELL_DCH to CELL_FACH
3				The UE cannot use the assigned the physical channel.
4	→		CELL UPDATE	The UE finds a new cell 2 and enter CELL FACH state in cell 2 to begins a cell update procedure. The value "cell reselection" set in IE "Cell update cause".
5	←		CELL UPDATE CONFIRM	This message include IE "new U-RNTI" and IE "new C-RNTI"". In the CELL_FACH state~~In the CELL_FACH state~~
6	→		UTRAN MOBILITY INFORMATION CONFIRM	
7	→		RADIO BEARER SETUP FAILURE	The IE "failure cause" shall be set to "cell reselection"

Specific Message Contents

RADIO BEARER SETUP (Step 1)

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.

CELL UPDATE (Step 4)

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 - S-RNTI Cell Update Cause	 Assigned previously in cell 1 Assigned previously in cell 1 "radio link failure"

CELL UPDATE CONFIRM (Step 5)

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 7
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 7)

Information Element	Value/remark
Message Type	"RADIO BEARER RECONFIGURATION FAILURE"
Failure cause	"cell reselection"
Other information element	Not checked

8.2.1.9.5 Test requirement

After step_3 the UE shall find a new cell No.2 and enter to CELL_FACH state. Then the UE shall initiate a cell update procedure in cell No.2.

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

After step 7 RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value of IE "failure cause" to "cell reselection".

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

8.2.1.10.1 Definition

8.2.1.10.2 Conformance requirement

The UE shall correctly set up a radio bearer according to a RADIO BEARER SETUP message and communicate with the UTRAN for its implementation.

Reference

3GPP TS 25.331 clause 8.2.1

8.2.1.10.3 Test purpose

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

8.2.1.10.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is in the CELL_FACH state, after SS prompts the test operator to initiate a packet-switched data call. The SS transmits a RADIO BEARER SETUP message to the UE after it sets up L1 including the start of tx/rx. After the UE receives this message, it configures them and establishes the required radio bearers. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. Then the UE and the SS enters the communicating state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	
2	→		RADIO BEARER SETUP COMPLETE	
3				To confirm the communication

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.

8.2.1.10.5 Test requirement

After step2 the UE shall communicate with the SS using the radio bearer indicated in RADIO BEARER SETUP message. Particularly, SS should be able to receive packet data using a terminal equipment (TE) attached to the UE.

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: CS-DCCH_FACH (state 6~~-86~~) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the 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 identical as “Packet to CELL_DCH from CELL_FACH in PS” as found in Annex A:

Information Element	Value/remark
Frequency info - UARFCN uplink(Nu) - UARFCN downlink(Nd)	 0 Not Present

RADIO BEARER SETUP FAILURE

Information Element	Value/remark
Message Type Failure cause Other information element	 Configuration unsupported Not checked

8.2.1.11.5 Test requirement

After step 1 the UE shall keep its configuration and 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 by the T312 expiry. 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 when 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 the CELL_FACH state. The SS transmits a RADIO BEARER SETUP message to the UE and does not configure the new radio bearer. After T312 expiry, the UE shall revert to the old configuration and 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 does not configure a new radio bearer.
2				The UE does not configure a new radio bearer but reverts to the old configuration.
3	→		RADIO BEARER SETUP FAILURE	

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

Information Element	Value/remark
Message Type	
Failure cause	Physical channel failure
Other information element	Not checked

8.2.1.12.5 Test requirement

After step 2 the UE shall revert to the old configuration 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".

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 ~~n RRC connection re-establishment~~ 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 completes cell update procedure, the UE transmits RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which set value to IE "failure cause"to "physical channel failure".

Reference

3GPP TS 25.331 clause 8.2.1

8.2.1.13.3 Test purpose

To confirm that the UE transmit RADIO BEARER SETUP FAILURE message after it completes ~~initiates~~ a cell update ~~n RRC connection re-establishment~~ procedure when the UE cannot establish the new radio bearer for the L1 configuration and subsequently fail to revert to the old configuration.

8.2.1.13.4 Method of test

Initial Condition

System Simulator: 2 cells- Cell 1 is active, Cell 2 is inactive

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

Test Procedure

The UE is in the CELL_FACH state in cell 1.~~The SS begins to broadcast the BCCH in cell 2 but with a transmission level lower than that for cell 1. It then~~SS transmits a RADIO BEARER SETUP message to the UE. After transmitting the RADIO BEARER SETUP message, the SS shall not configure L1 in accordance to the settings in the message. At the same time, SS begins to broadcast the BCCH in a cell 2. The UE recognize that it cannot configure the new radio bearer and wants to revert to the old configuration, but the UE cannot revert to the old configuration. The UE shall select Cell 2 by performing cell re-selection and enter CELL FACH state. 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 transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and subsequently transmit RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value " physical channel failure" to IE "failure cause".~~from cell 1.Then the SS deletes the old downlink channel configuration after sending this message. This causes the UE to fail to configure L1 and could not revert to the old configuration. The UE shall find the presence of cell 2 and transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message. The message shall include the IE "U-RNTI" and sent on the uplink CCCH. The SS responds with an RRC CONNECTION RE-ESTABLISHMENT message, which includes a new TFCS according to the new transport channel. After the UE receives an RRC CONNECTION RE-ESTABLISHMENT message, it reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
~~1~~	~~←~~		~~BCCH~~	~~The SS transmits the BCCH in cell 2, but with a power level lower that that in cell 1.~~
~~2~~1	←		RADIO BEARER SETUP	The SS ~~does not configure the new radio bearer and instead~~ delete the old configuration.
2			BCCH	The SS does not configure the new radio bearer and starts to transmit the BCCH in cell 2
3				The UE cannot configure a new radio bearer and cannot revert to old configuration.
4				The UE select the cell 2.
~~4~~5	→		CELL UPDATE~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~	The value "radio link failure" shall be set in IE "Cell update cause".~~The UE shall find the presence of cell2It shall then transmit this message including its assigned U-RNTI in the IE "U-RNTI".~~
~~5~~6	←		CELL UPDATE CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT~~	This message include IE "new U-RNTI" and IE "new C-RNTI"".~~Including the new TFCS according to the new transport channel.~~
~~6~~7	→		UTRAN MOBILITY INFORMATION CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT COMPLETE~~	
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 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	"radio link failure"

CELL UPDATE CONFIRM (Step 7)

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 7
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)

Information Element	Value/remark
Message Type	"RADIO BEARER RECONFIGURATION FAILURE"
Failure cause	"physical channel failure"
Other information element	Not checked

~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~

~~Information Element~~	~~Value/remark~~
~~U-RNTI~~	~~Set to assigned UE U-RNTI in RRC CONNECTION SETUP message.~~
~~Protocol error indication~~	~~FALSE~~

~~RRC CONNECTION RE-ESTABLISHMENT COMPLETE~~

~~Information Element~~	~~Value/remark~~
~~Radio bearer uplink ciphering activation time info~~	~~Not Present~~
~~RB with PDCP information list~~ ~~RB with PDCP information list~~	~~Not Present~~

8.2.1.13.5 Test requirement

After step 3 the UE shall find the presence of cell 2, which is suitable for camping.

-After step 8 the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 9 the UE shall transmit RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to " physical channel failure".

~~It shall then enter CELL_FACH state and transmit a RRC CONNECTION RE-ESTABALISHMENT REQUEST message to prevent the RRC connection from being lost.~~

~~After step 6 the UE shall re-establish an RRC connection, using the new TFCS settings specified in RRC CONNECTION RE-ESTABLISHMENT message~~

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 whilst reconfiguring 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. ~~If the UE is reconfiguring itself after receiving a radio bearer message other than RADIO BEARER SETUP message, and when the UE subsequently receive a RADIO BEARER SETUP message, the UE shall transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC with value "Incompatible simultaneous reconfiguration" set in IE "failure cause".~~

Reference

3GPP TS 25.331 clause 8.2.1

8.2.1.14.3 Test purpose

To confirm that if the UE receives a RADIO BEARER SETUP message whilst reconfiguring 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 according to the previously received message.

~~To confirm that the UE keeps its configuration and transmits a RADIO BEARER SETUP FAILURE message when the UE receives a RADIO BEARER SETUP message, before the UE configures the radio bearer according to an earlier message.~~

8.2.1.14.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCT+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 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 the 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 receives the RADIO BEARER SETUP FAILURE message, the UE reconfigures the new physical channel parameters and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC.

~~The UE is in the CELL_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message. The activation time of this event is specified to be 255 frames from the SS's current CFN. However, SS sends a RADIO BEARER SETUP message before 255 frames has passed. The UE shall then abandon its current reconfiguration operation, and keep the old configuration. Finally, the UE transmits a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC. This message shall contain the value "Incompatible simultaneous reconfiguration" in IE "failure cause".~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	Including IE "Uplink DPCH info"
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 receiving 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)

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]

RADIO BEARER SETUP (for Step 2)

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

RADIO BEARER SETUP FAILURE

Information Element	Value/remark
Message Type	
Failure cause	Incompatible simultaneous reconfiguration
Other information element	Not checked

8.2.1.14.5 Test requirement

After step 1 The SS transmits a RADIO BEARER SETUP message before the expiry of the activation time specified in the message of step 1.

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 4 the UE communicates with the SS on the DCCH and DTCH using the new physical channel parameters reconfigured as a result of the RADIO BEARER RECONFIGURATION message.

~~After step 2 the UE shall keep its configuration and transmit a RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC which is set to “Incompatible simultaneous reconfiguration” in IE “failure cause”.~~

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 a RADIO BEARER SETUP message, which includes ~~the spare~~ undefined value in the mandatory IE “UTRAN DRX cycle length coefficient~~DRX indicator~~” having criticality defined as “Reject”. It shall transmit a RADIO BEARER SETUP FAILURE message which set value “protocol error” in IE “failure cause” and also value “Information element value not comprehended” in IE “ Protocol error cause”. The UE shall keep existing configuration before reception of a RADIO BEARER SETUP message when the RADIO BEARER SETUP message include some IEs set to invalid value, and then the UE shall transmit 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 a RADIO BEARER SETUP message, with an ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~" and having criticality defined as "Reject".

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 invalid value.

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 a RADIO BEARER SETUP message to the UE which includes an ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~" with criticality defined as "Reject". 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 "Information element value not comprehended" in IE "Protocol error cause". The UE keeps initial configuration when SS transmits RADIO BEARER SETUP message including some IEs set to invalid value. The UE transmit 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	
2	→		RADIO BEARER SETUP FAILURE	The UE does not change the configuration.
3	←		RADIO BEARER SETUP	This message includes IE set to invalid value.
4				The UE does not change the configuration.
5	→		RADIO BEARER SETUP FAILURE	The IE "failure cause" shall be set to "invalid configuration

Specific Message Contents

RADIO BEARER SETUP (Step 1)

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 with the following exceptions:

Information Element	Value/remark
UTRAN DRX cycle length coefficient~~DRX indicator~~	~~spare~~ Undefined value

RADIO BEARER SETUP FAILURE (Step 2)

Information Element	Value/remark
Message Type	
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	Information element value not comprehended
Other information element	Not checked

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 with the following exceptions:

Added or Reconfigured UL TrCH information	
- Transport channel identity	1
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- RLC size	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE Logical Channel list	
- Explicit List	
- RB identity	2

RADIO BEARER SETUP FAILURE (Step 5)

Information Element	Value/remark
Message Type	
Failure cause	Invalid configuration
Other information element	Not checked

8.2.1.15.5 Test requirement

After step 1 the UE shall keep its old configuration and 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"Information element value not comprehended" in IE "Protocol error cause".

After step 3 the UE shall keep its old configuration

After step 4 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 bearer according to a RADIO BEARER SETUP message and communicate with the UTRAN for its implementation.

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 bearer according to a RADIO BEARER SETUP message received from the SS.

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 the 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 it sets up L1 including the start of tx/rx. After the UE receives this message, it configures them and establishes a radio bearer. Finally the UE transmits a RADIO BEARER SETUP COMPLETE message using AM RLC. Then the UE and the SS enters the communicating state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	
2				The UE select PRACH and S-CCPCH using SIB5 or SIB6.
~~2~~3	→		RADIO BEARER SETUP COMPLETE	
~~3~~4				To confirm the proper establishment of the new radio bearer by checking the packet data exchanged between the SS and a TE attached to the UE.

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 ~~2~~ 3 the UE shall communicate with the SS using the new radio bearer , this can be confirmed by the exchange of packet data between a terminal equipment (TE) attached to the UE and the SS.

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 configures the radio bearer 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 RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.1

8.2.1.17.3 Test purpose

To confirm that if the UE receives a new RADIO BEARER SETUP message before the UE configures the radio bearer according to a previous RADIO BEARER SETUP message, it ignore 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) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the CELL_DCH state. SS transmits a RADIO BEARER SETUP message to the UE before the UE configures 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 RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	Including IE ”Uplink DPCH info”
2	←		RADIO BEARER SETUP	SS send this message before the expiry of activation time specified in RADIO BEARER SETUP message of step 1.
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

For RADIO BEARER SETUP in step 1, use the message sub-type indicated as “The other of speech in CS” found in Annex A, with the exception of the following Information Elements:

RADIO BEARER SETUP (Step 1)

Information Element	Value/remark
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256

RADIO BEARER SETUP (Step 2)

For RADIO BEARER SETUP in step 2, use the message sub-type indicated as “The other of speech in CS” found in Annex A, with the exception of the following

Information Element	Value/remark
Activation Time	Not Present

8.2.1.17.5 Test requirement

After step 3 the UE shall communicate with the SS on the radio bearer specified in the RADIO BEARER SETUP message in step 1.

8.2.1.18 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 configures the radio bearer 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 RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.1

8.2.1.18.3 Test purpose

To confirm that if the UE receives a new RADIO BEARER SETUP message before the UE configures the radio bearer according to a previous RADIO BEARER SETUP message, it ignore 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 the CELL_FACH state. The SS transmits a RADIO BEARER SETUP message, requesting the UE to setup radio bearers using DPCH physical channels. The activation time of this event is specified to be 255 frames from the SS's current CFN. However, SS sends another RADIO BEARER SETUP message before 255 frames has lapsed. 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 RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	Including IE "Uplink DPCH info"
2	←		RADIO BEARER SETUP	SS send this message before the expiry of activation time specified in RADIO BEARER SETUP message of step 1.
3	→		RADIO BEAER 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)

For this message, use the message sub-type entitled "Packet to CELL_DCH from CELL_FACH in PS" in Annex A

RADIO BEARER SETUP (for Step 2)

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
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256

8.2.1.18.5 Test requirement

After step 2 the UE shall keep its configuration and transmit a RADIO BEARER SETUP COMPLETE message on the DCCH using AM RLC.

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 and transition from CELL_DCH state to CELL_PCH state according to the received~~ing~~ RADIO BEARER SETUP message.

Reference

3GPP TS 25.331 clause 8.2.2

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 from SS and configured new radio bearers.

8.2.1.19.4 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

The UE is in the CELL_DCH state. The SS transmits a RADIO BEARER SETUP message. The UE transmits RADIO BEARER SETUP COMPLETE message to the UE using AM RLC and enters into CELL_PCH state. The SS transmits a PAGING TYPE 1 message, ~~to enter~~ causing the UE to enter ~~in~~ CELL_FACH state and the UE shall transmit 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 SETUP ~~message~~	
2		→	RADIO BEARER SETUP COMPLETE	~~The UE sends this message before state transition.~~
3				Configuration of Radio Bearer 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

RADIO BEARER SETUP (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	CELL PCH

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 Paging originator - U-RNTI - SRNC Identity - S-RNTI	 UTRAN originator Previously assigned SRNC identity in Initial Condition Previously assigned S-RNTI in Initial Condition

8.2.1.19.5 Test requirement

After step 1, the UE transmits RADIO BEARER ~~RECONFIGURATION~~SETUP COMPLETE message to the UE on uplink DCCH using AM RLC.

After step ~~3~~4, the UE shall ~~transit from CELL_DCH to CELL_PCH~~ transmit CELL UPDATE message on the CCCH.

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 and transition from CELL_DCH state to URA_PCH state according to receiving RADIO BEARER SETUP message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.1.20.3 Test purpose

To conform that the UE transmit a RADIO BEARER SETUP COMPLETE message and enters URA_PCH state after it received a RADIO BEARER SETUP message from SS and configured the new radio bearers.

8.2.1.20.4 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

The UE is in the CELL_DCH state. The SS transmits a RADIO BEARER SETUP message. The UE transmits RADIO BEARER SETUP COMPLETE message to the UE using AM RLC and enters ~~into~~ URA_PCH state. The SS transmits a PAGING TYPE 1 message, causing ~~to enter~~ the UE to enter ~~in~~ CELL_FACH state and the UE shall transmit 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 SETUP ~~message~~	
2		→	RADIO BEARER SETUP COMPLETE	~~The UE sends this message before state transition.~~
3				Configuration of Radio Bearer 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

RADIO BEARER SETUP (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

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 Paging originator - U-RNTI - SRNC Identity - S-RNTI	 UTRAN originator Previously assigned SRNC identity in Initial Condition Previously assigned S-RNTI in Initial Condition

8.2.1.20.5 Test requirement

After step 1, the UE transmits RADIO BEARER ~~RECONFIGURATION~~ SETUP COMPLETE message to the UE on uplink DCCH using AM RLC.

After step 3, the UE shall transmit CELL UPDATE message on the CCCH~~transit from CELL_DCH to URA_PCH~~.

8.2.2 Radio Bearer Reconfiguration

8.2.2.1 Radio Bearer Reconfiguration (Hard handover) 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 radio frequency. After executing the reconfiguration, the UE shall be able to communicate with the UTRAN on the newly configured radio bearer.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.1.3 Test purpose

To confirm that the UE reconfigures a new radio bearer by following a RADIO BEARER RECONFIGURATION message, which indicates a hard handover to another radio frequency.

8.2.2.1.4 Method of test

Initial Condition

System Simulator: 2 cells – cell 1 and cell 6 are active. The CPICH_Ec/No and CPICH RSCP of cell 4 are improved to –15dB and –70dBm respectively. The $Q_{rxlevmin}$ and $Q_{rxqualmin}$.values in SYSTEM INFORMATION BLOCK TYPE 3 and 4 messages of cell 6 is changed to –90dBm and –20dB respectively

UE: PS-DCCH+DTCH_DCH (state 6-~~11~~10) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE is in the CELL_DCH state in cell 1. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE, which commands that hard handover to cell 6 be performed. The UE reconfigures the new physical channel parameters and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	Hard handover to cell 6,
2				UE shall ~~suspend~~ stop all uplink transmissions to cell 1 and shall commence the reconfiguration of the affected physical channel parameters to that of cell 6.
3	→		RADIO BEARER RECONFIGURATION COMPLETE	

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 "Packet to CELL_DCH from CELL_DCH in PS" in Annex A, with the following exceptions:

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	Same downlink UARFCN as used for cell 6
- Primary CPICH info	
- Primary Scrambling Code	350
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Initialise

8.2.2.1.5 Test requirement

After step 1 the UE shall reconfigure the radio links with the SS.

After step 3 the UE shall change its physical channel configuration and communicate with the SS on the DCCH and DTCH of cell 6.

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: PS-DCCH+DTCH_DCH (state 6-~~7~~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 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

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 with the following exceptions:

Information Element	Value/remark
Frequency info - UARFCN uplink(Nu) - UARFCN downlink(Nd)	 63984. Not Present

RADIO BEARER RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type Failure cause Other information element	"RADIO BEARER RECONFIGURATION FAILURE" Configuration unsupported Not checked

8.2.2.2.5 Test requirement

After step 2 the UE shall keep its old configuration and 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 by received RADIO BEARER RECONFIGURATION message and 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 new radio bearer according to the RADIO BEARER RECONFIGURATION message received previously.

8.2.2.3.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_DCH (state 6-~~7~~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 RADIO BEARER RECONFIGURATION message to the UE which includes the new radio bearer parameters but it does not reconfigure L1 according to the settings found in the message. 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 parameters to reflect the radio bearer reconfigurations specified in the message.
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 as “Packet to CELL_DCH from CELL_DCH in PS” as found in Annex A.

RADIO BEARER RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type Failure cause Other information element	“RADIO BEARER RECONFIGURATION FAILURE” Physical channel failure Not checked

8.2.2.3.5 Test requirement

After step 2 the UE shall revert to the old configuration and 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~~n RRC connection re-establishment procedure~~ cell updatewhen 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 transmit 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 RADIO BEARER SETUP FAILURE message after it completes ~~initiates~~ an ~~RRC connection re-establishment~~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: 2 cells - Cell 1 is active, Cell 2 is inactive

UE: PS-DCCH+DTCH_DCH (state 6-~~7~~10) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE is in the CELL_DCH state in a cell 1. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE, which includes the new radio bearer parameters. After transmitting the RADIO BEARER RECONFIGURATION message, t~~T~~he SS ~~does~~ shall not reconfigure L1 in accordance to the settings in the message and delete all radio bearer related contexts in cell 1. At the same time, SS begins to broadcast the BCCH in a cell 2. 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 shall select Cell 2 by performing cell re-selection and enter CELL

FACH state. The UE transmits 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 UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and subsequently transmits RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value " physical channel failure" to IE "failure cause". ~~. The UE shall find cell 2 and transmit to it an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH. The SS transmits an RRC CONNECTION RE-ESTABLISHMENT message which specifies a new TFCS according to the new transport channel allocated. After the UE receives an RRC CONNECTION RE-ESTABLISHMENT message, it reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	
2				The SS does not reconfigure the new radio bearer and delete the old configuration in cell 1.
3	←		BCCH	The SS transmit the BCCH in the cell 2.
~~3~~4				The UE fails to reconfigure a new radio bearer.
5				The SS shall not revert old configuration.
6				The UE select the cell 2 and enter CELL FACH state.
~~4~~7	←		CELL UPDATE~~BCCH~~	The value "radio link failure" shall be set in IE "Cell update cause".~~The SS transmits a BCCH in a cell 2 and delete the old radio bearer.~~
~~5~~8	→		CELL UPDATE CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~	This message include IE "new U-RNTI" and IE "new C-RNTI"".~~The UE finds cell 2 and transmits this message which includes the IE "U-RNTI" it was previously assigned.~~
~~6~~9	→←		UTRAN MOBILITY INFORMATION CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT~~	~~This message includes a new TFCS according to the new transport channel indicated in RRC CONNECTION RE-ESTABLISHMENT message.~~
10	→		RADIO BEARER RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "physical channel failure"
~~7~~	–→		~~RRC CONNECTION RE-ESTABLISHMENT COMPLETE~~	

Specific Message Contents

RADIO BEARER RECONFIGURATION message (Step 1)

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.

CELL UPDATE (Step 7)

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	Assigned previously in cell 1
- S-RNTI	Assigned previously in cell 1
Cell Update Cause	"radio link failure"

CELL UPDATE CONFIRM (Step 8)

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 7
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 RECONFIGURATION FAILURE (Step 9)

Information Element	Value/remark
Message Type	"RADIO BEARER RECONFIGURATION FAILURE"
Failure cause	"physical channel failure"
Other information element	Not checked

8.2.2.4.5 Test requirement

After step ~~4~~ 5 the UE shall detect the presence of cell 2, enters CELL_FACH state~~, and transmit RRC CONNECTION RE-ESTABLISHMENT to attempt to keep the current RRC connection.~~.

After step ~~7~~ 8 the UE transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 9 the UE shall transmit RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to " physical channel failure".~~shall successfully re-establish an RRC connection.~~

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 whilst reconfiguring due to a radio bearer message other than RADIO BEARER RECONFIGURATION, it shall keep its configuration as if the RADIO RECONFIGURATION SETUP message had not been received. ~~If the UE is configuring itself after receiving a radio bearer message other than RADIO BEARER RECONFIGURATION message, and when the UE subsequently receive a RADIO BEARER RECONFIGURATION message, the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "Incompatible simultaneous reconfiguration" in IE 'failure cause".~~

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.5.3 Test purpose

To confirm that if the UE receives a RADIO BEARER RECONFIGURATION message whilst reconfiguring 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 according to the previously received message. ~~To confirm that the UE keeps its configuration and transmits an RADIO BEARER~~

~~RECONFIGURATION FAILURE message when the UE receives a RADIO BEARER RECONFIGURATION message before the UE can complete the configuration of the radio bearer indicated in an earlier message.~~

8.2.2.5.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_DCH (state 6-~~7~~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 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 the 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 receives the RADIO BEARER SETUP FAILURE message, the UE reconfigures the new physical channel parameters and transmits a RADIO BEARER SETUP COMPLETE message on DCCH using AM RLC. ~~The UE is in the CELL_DCH state. When the SS transmits a RADIO BEARER RECONFIGURATION message to the UE before the UE configures the requested radio bearer(s), the UE keeps the old configuration and transmits an RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC. This message shall set value "Incompatible simultaneous reconfiguration" in IE "failure cause".~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER SETUP	Including IE "Uplink DPCH info"
2		←	RADIO BEARER RECONFIGURATION	Sent before the "activation time" in step 1 has elapsed
3		→	RADIO BEARER RECONFIGURATION FAILURE	The UE does not change the configuration because of receiving the RADIO BEARER RECONFIGURATION message.~~.~~
4		→	RADIO BEARER SETUP COMPLETE	This message is on DCCH using AM RLC.

Specific Message Contents

RADIO BEARER SETUP (Step 1)

For RADIO BEARER SETUP in step 1, use the message sub-type indicated as "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A.

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 "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A with following exceptions:

Information Element	Value/remark
Activation Time	Not Present.

RADIO BEARER RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type	”RADIO BEARER RECONFIGURATION FAILURE”
Failure cause	Incompatible simultaneous reconfiguration
Other information element	Not checked

8.2.2.5.5 Test requirement

After step 1 The SS transmits a RADIO BEARER RECONFIGURATION message before the expiry of the activation time specified in the message of step 1.

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 RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE “failure cause” set to “Incompatible simultaneous reconfiguration”.

After step 4 the UE communicates with the SS on the DCCH and DTCH using the new physical channel parameters configured as a result of the RADIO BEARER SETUP message ~~After step 2 the UE shall keep its configuration and transmit an RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which contains the value “Incompatible simultaneous reconfiguration” set in IE “failure cause”.~~

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 a RADIO BEARER RECONFIGURATION message, which includes the ~~spare~~ undefined value in the mandatory IE “UTRAN DRX cycle length coefficient~~DRX indicator~~” having criticality defined as “Reject”. The UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message which is set to “protocol error” in IE “ failure cause” and is set to “Information element value not comprehended” in IE “Protocol error cause”. The UE shall keep existing configuration before reception of a RADIO BEARER RECONFIGURATION message when the RADIO BEARER RECONFIGURATION message include some IEs set to invalid value, and then the UE shall transmit RADIO BEARER RECONFIGURATION FAILURE 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 a RADIO BEARER RECONFIGURATION message containing a ~~spare~~ undefined value in the mandatory IE “UTRAN DRX cycle length coefficient~~DRX indicator~~” with criticality defined as “Reject”.

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 invalid value.

8.2.2.6.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_DCH (state 6-~~7~~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 RADIO BEARER RECONFIGURATION message to the UE which includes the ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~" which criticality is defined as "Reject". 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 "Information element value not comprehended" in IE "Protocol error cause". The UE keeps initial configuration and SS transmits RADIO BEARER RECONFIGURATION message including some IEs set to invalid value. The UE transmit 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	The message contains an illegal error in a mandatory IE.
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				The UE does not change the configuration.
5	→		RADIO BEARER RECONFIGRATION FAILURE	The IE "failure cause" shall be set to "invalid configuration

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

The contents of RADIO BEARER RECONFIGRATION message in this test case is identical as "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A with following exceptions, with the following exceptions:

Information Element	Value/remark
UTRAN DRX cycle length coefficient~~DRX indicator~~	~~spare~~ Undefined value

RADIO BEARER RECONFIGURATION FAILURE (Step 2)

Information Element	Value/remark
Message Type	"RADIO BEARER RECONFIGURATION FAILURE"
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	Information element value not comprehended
Other information element	Not checked

RADIO BEARER RECONFIGURATION (Step 3)

The contents of RADIO BEARER RECONFIGRATION message in this test case is identical as "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A with following exceptions, with the following exceptions:

Added or Reconfigured UL TrCH information - Transport channel identity - TFS - Dynamic Transport format information - RLC size - CHOICE Logical Channel list - Explicit List - RB identity	 1 (This IE is repeated for TFI number) Reference to TS34.108 clause 6.10 Parameter Set 2

RADIO BEARER RECONFIGURATION FAILURE (Step 5)

Information Element	Value/remark
Message Type Failure cause Other information element	 Invalid configuration Not checked

8.2.2.6.5 Test requirement

After step 1 the UE shall keep its old configuration and 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 "Information element value not comprehended" in IE "Protocol error cause".

After step 3 the UE shall keep its old configuration

After step 4 the UE shall transmit 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~~Failure (Suspension of signalling bearer~~)

8.2.2.7.1 Definition

8.2.2.7.2 Conformance requirement

The UE shall continue or stop the uplink transmission when the UTRAN indicate stop or continue uplink transmission in radio bearer reconfiguration procedure.~~revert to the old configuration prior to the reception of RADIO BEARER RECONFIGURATION message, which includes IE "RB suspend/resume" specified as "Suspend", and transmit a RADIO BEARER RECONFIGURATION FAILURE message to UTRAN.~~

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.7.3 Test purpose

To confirm that the UE reconfigures new radio bearer and have the uplink transmission according to a RADIO BEARER RECONFIGURATIO message which indicates that uplink transmission is continued.

To confirm that the UE reconfigures new radio bearer and don't transmit data according to a RADIO BEARER RECONFIGURATION message which indicates that uplink transmission is stopped.~~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 according to a RADIO BEARER RECONFIGURATION message.~~

8.2.2.7.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_DCH (state 6-~~7~~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 RADIO BEARER RECONFIGURATION message including IE" RB stop/continue" set to "continue". The UE reconfigures new radio bearer and transmit RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC. The UE communicate with the SS after transmission the RADIO BEARER RECONFIGURATION COMPLETE message. Then, SS transmit a RADIO BEARER RECONFIGURATION message including IE" RB stop/continue" set to "stop". The UE reconfigures new radio bearer and transmit RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC. The UE don't transmit any uplink data without Signalling message after transmission the RADIO BEARER RECONFIGURATION COMPLETE message.~~to the UE which specifies the suspension of a signalling radio bearer to be reconfigured. The UE shall revert to the old configuration. Then the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC with the IE "failure cause" set to "configuration unsupported".~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	This message include IE" RB stop/continue ".~~Specifies a signalling radio bearer to be suspended.~~
2	→		RADIO BEARER RECONFIGURATION COMPLETE~~FAILURE~~	~~The UE shall revert to the old configuration~~
3				The SS Shall communicate with the UE.
4			RADIO BEARER RECONFIGURATION	This message include IE" RB stop/continue ".
5			RADIO BEARER RECONFIGURATION COMPLETE	
6				The SS shall not receive any data from the UE without Signalling message.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

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
RB information to reconfigure list RB information to reconfigure ~~l~~ -RB identity -RB stop/continue~~suspend/resume~~	 ~~3~~5 "continue~~Suspend~~"

RADIO BEARER RECONFIGURATION ~~FAILURE~~ (Step 4)

The contents of CELL UPDATE message in this test case is identical as "Packet to CELL_DCH from CELL_DCH in PS" as found in Annex with the following exceptions:

Information Element	Value/remark
RB information to reconfigure list RB information to reconfigure -RB identity -RB stop/continue	 5 "stop"
~~Message Type~~ ~~Failure cause~~ ~~Other information element~~	~~"RADIO BEARER RECONFIGURATION FAILURE"~~ ~~Configuration unsupported~~ ~~Not checked~~

8.2.2.7.5 Test requirement

After step 2 the UE shall communicate with the SS using new configuration.

After step 5 the UE shall communicate with the SS using new configuration, but shall not transmit any data to the SS without signalling message.~~revert to the old configuration and transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC specifying the reason "configuration unsupported" in IE "failure cause".~~

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 a radio bearer according to a RADIO BEARER RECONFIGURATION message which is communicate with the UTRAN on the new radio bearer in case of a transition from CELL_DCH to CELL_FACH in the same cell.

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 a RADIO BEARER RECONFIGURATION message has been received from the SS.

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 the CELL_DCH state. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE, which includes the new radio bearer parameters and sets up L1 including the start of tx/rx. The UE reconfigures the new radio bearer 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 UE select PRACH and S-CCPCH using SIB5 and SIB6 after entering CELL FACH state.~~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.

8.2.2.8.5 Test requirement

After step 1 the UE shall reconfigure the radio links with the SS.

After step 3 the UE shall change its radio bearer configuration and communicate with the SS on the DCCH and DTCH, using the common physical channel~~ allocated in RADIO BEARER RECONFIGURTION message~~.

8.2.2.9 Radio Bearer Reconfiguration from CELL_DCH to CELL_FACH: Failure (Cell re-selection~~Physical channel failure~~)

8.2.2.9.1 Definition

8.2.2.9.2 Conformance requirement

The UE shall initiate ~~the~~ cell ~~reselection~~ update procedure when the UE cannot use the assigned physical channel according to a RADIO BEARER CHANNEL RECONFIGURATION message in current cell, during the transition from CELL_DCH to CELL_FACH. After the UE completes cell update procedure, the UE transmits RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which set IE “failure cause” to “cell reselection”.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.9.3 Test purpose

To confirm that the UE transmits RADIO BEARER SETUP FAILURE message after it completes ~~initiate~~ a cell reselection~~ after encountering a physical channel failure~~, when the UE cannot use the assigned physical channel according to a RADIO BEARER RECONFIGURATION message as it transits from CELL_DCH to CELL_FACH.~~attempting to transit from CELL_DCH to CELL_FACH state during the execution of radio bearer reconfiguration procedure. The UE is first instructed to select the cell implied in the RADIO BEARER RECONFIGURATION message, but discover a failure as the indicated cell is not present.~~

8.2.2.9.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 is active and cell 2 is inactive

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 in cell 1. SS ~~starts to~~ transmit a RADIO BEARER RECONFIGURATION message to the UE, which includes the new radio bearer parameters. After transmitting the RADIO BEARER RECONFIGURATION message, the SS shall not reconfigure L1 in accordance to the settings in the message. At the same time, SS begins to broadcast the BCCH in a cell 2. The UE recognize 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 shall select cell 2 by performing cell re-selection and enter CELL FACH state. The UE transmits CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and transmit RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value " cell reselection" to IE "failure cause". ~~the BCCH for cell 2, but with a power level lower that of cell 1. Following this, the SS send a RADIO BEARER RECONFIGURATION message to the UE, which includes relevant information about the target cell's P-CPICH. SS selects an unused primary scrambling code for P-CPICH, which neither matches the code used by cell 1 nor cell 2. This should lead to the detection of a physical channel failure in the UE. The UE shall trigger a cell reselection and initiate a cell update procedure if it is able to access cell 2. When SS receives a CELL UPDATE message in cell 2 on uplink CCCH, it replies with CELL UPDATE CONFIRM message.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
~~1~~				~~SS begin to broadcast the BCCH data in cell 2, but with a power level lower than in cell 1.~~
~~2~~1	←		RADIO BEARER RECONFIGURATION	~~The message includes IE "Primary CPICH Info" and set the IE "Primary Scrambling Code" to an unknown value (not used by cell 1 or cell 2).~~
~~3~~2				The SS does not reconfigure the new radio bearer in cell 1.~~UE shall detect a "physical channel failure" condition and then trigger a cell reselection procedure.~~
3	←		BCCH	The SS transmit the BCCH in the cell2.
4				The UE fails to reconfigure a new radio bearer.
5				The SS shall not revert old configuration.
6				The UE select the cell 2 and enter CELL FACH state.
~~4~~7	→		CELL UPDATE	The value "cell reselection" shall be set in IE "Cell update cause".~~After successfully camping onto cell 2, UE shall initiate a cell update procedure. The updating cause shall be set to "cell reselection"~~
~~5~~8	←		CELL UPDATE CONFIRM	This message include IE "new U-RNTI" and IE "new C-RNTI"".~~Contains cell~~
9	→		UTRAN MOBILITY INFORMATION CONFIRM	
10	→		RADIO BEARER RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "cell reselection"

Specific Message Contents

RADIO BEARER RECONFIGURATION

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 link~~ ~~- Primary CPICH Info~~ ~~- Primary Scrambling Code~~	 ~~Set to an unused code different from the 3 cells defined.~~

CELL UPDATE (Step 7)

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	Assigned previously in cell 1
- S-RNTI	Assigned previously in cell 1
Cell Update Cause	"radio link failure"

CELL UPDATE CONFIRM (Step 9)

The contents of CELL UPDATE CONFIRM message is identical as “CELL UPDATE CONFIRM message“ as found in Annex with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 7
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 RECONFIGURATION FAILURE (Step 10)

Information Element	Value/remark
Message Type	“RADIO BEARER RECONFIGURATION FAILURE”
Failure cause	“cell reselection”
Other information element	Not checked

~~CELL UPDATE~~

~~Information Element~~	~~Value/remark~~
~~U-RNTI~~	~~The assigned U-RNTI indicated In RRC CONNECTION SETUP message~~
~~Cell Update Cause~~	~~Cell Reselection~~

8.2.2.9.5 Test requirement

After step ~~3~~5, the UE shall discover the presence of cell 2, enter CELL_FACH and then perform ~~a~~ cell reselection ~~updating procedure~~ by the transmission of CELL UPDATE using RLC-TM mode on CCCH. ~~The UE shall transit to CELL_PCH state to monitor the PCCH channel after the reception of CELL UPDATE CONFIRM message.~~

After step 8 UE transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 9 , the UE shall transmit RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting IE “failure cause” to ”cell reselection”.

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 a radio bearer according to a RADIO BEARER RECONFIGURATION message which is communicate with the UTRAN on the new radio bearer in case of a transition from CELL_FACH to CELL_DCH in the same cell.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.10.3 Test purpose

To confirm that the UE establishes a new radio bearer by following a RADIO BEARER RECONFIGURATION message received from the SS.

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 the CELL_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE which includes the new radio bearer parameters and sets up L1 including the start of tx/rx. The UE reconfigures the new radio bearer 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 change its radio bearer configuration and communicate with the SS on the DCCH and DTCH which are being carried by the DPCH physical channel resources.

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 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

8.2.2.11.3 Test purpose

To confirm that the UE transmits a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC if the RADIO BEARER RECONFIGURATION message received includes unsupported configuration parameters.

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 the CELL_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE which includes unsupported configuration parameters of 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

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) - UARFCN downlink(Nd)	 63984 Not Present

RADIO BEARER RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type Failure cause Other information element	 Configuration unsupported Not checked

8.2.2.11.5 Test requirement

After step1 the UE shall keep its old configuration and 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 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 by received RADIO BEARER RECONFIGURATION message and 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 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 the CELL_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE, which includes the new radio bearer parameters and does not reconfigure L1. Therefore, the UE cannot reconfigure the new radio bearer and shall attempt to revert to the old configuration. Then the UE shall 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				The SS does not reconfigures L1 including the start of tx/rx
3	→		RADIO BEARER RECONFIGURATION FAILURE	The UE fails to reconfigure a new radio bearer.

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

Information Element	Value/remark
Message Type	
Failure cause	Physical channel failure
Other information element	Not checked

8.2.2.12.5 Test requirement

After step 2 the UE shall revert to the old configuration and 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)

8.2.2.13.1 Definition

8.2.2.13.2 Conformance requirement

The UE shall perform a cell update ~~n RRC connection re-establishment~~ procedure 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 RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which set IE "failure cause" to "physical channel failure".

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.13.3 Test purpose

To confirm that the UE transmits RADIO BEARER RECONFIGURATION FAILURE message after it completes~~initiates~~ a cell update ~~n RRC connection re-establishment~~ procedure, when the UE cannot reconfigure the new radio bearer following a failure to configure L1 parameters for the new radio bearer settings and also a reversion failure to the old configuration.

8.2.2.13.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 is active, Cell 2 is inactive

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE is in the CELL_FACH state in cell 1. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE, which includes the new radio bearer parameters but SS does not reconfigure L1 such as ~~to~~ catered to the new radio bearer settings. The UE cannot reconfigure the new radio bearer and wants to revert to the old configuration. But the SS does not configure the old radio bearer and begins to broadcast the BCCH in a cell 2 and stops broadcasting the BCCH in cell 1. Then the UE finds a new cell 2 and transmits 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 transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and subsequently transmit RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value " physical channel failure" to IE "failure cause".~~transmits to it an RRC CONNECTION RE-ESTABLISHMENT REQUEST message, which includes the IE "U-RNTI" on the uplink CCCH. The SS replies with an RRC CONNECTION RE-ESTABLISHMENT message, specifying a new TFCS according to the new transport channel. After the UE receives an RRC CONNECTION RE-ESTABLISHMENT message, it reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	
2				The SS does not reconfigure the new radio bearer and delete the old configuration.
3				The UE shall detect a failure to reconfigure a new radio bearer, and start to revert to old configuration.
4	←		BCCH	The SS starts to transmit the BCCH in cell 2 and delete the old radio bearer settings in cell 1.
5				The SS shall not revert old configuration.
6				The UE enter CELL FACH state and select the cell2.
7	→		CELL UPDATE	The value “radio link failure” shall be set in IE ”Cell update cause”.
8	←		CELL UPDATE CONFIRM	This message include IE “new U-RNTI” and IE “new C-RNTI”“.
9	→		UTRAN MOBILITY INFORMATION CONFIRM	
10			RADIO BEARER RECONFIGURATION FAILURE	The IE “failure cause” shall be set to “physical channel failure”
~~5~~	~~→~~		~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~	~~The UE shall find cell 2 and transmits this message which includes the IE “U-RNTI” it possesses.~~
~~6~~	~~←~~		~~RRC CONNECTION RE-ESTABLISHMENT~~	~~Including the new TFCS according to the new transport channel.~~
~~7~~	~~→~~		~~RRC CONNECTION RE-ESTABLISHMENT 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.

CELL UPDATE (Step 7)

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	Assigned previously in cell 1
- S-RNTI	Assigned previously in cell 1
Cell Update Cause	“radio link failure”

CELL UPDATE CONFIRM (Step 9)

The contents of CELL UPDATE CONFIRM message is identical as “CELL UPDATE CONFIRM message“ as found in Annex with the following exceptions:

Information Element	Value/remark
U-RNTI	Same as CELL UPDATE message in step 7
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 RECONFIGURATION FAILURE (Step 9)

Information Element	Value/remark
Message Type	"RADIO BEARER RECONFIGURATION FAILURE"
Failure cause	"physical channel failure"
Other information element	Not checked

8.2.2.13.5 Test requirement

After step ~~4~~ 5 the UE shall detect the presence of cell 2, enter CELL_FACH state.~~, and attempt to perform RRC connection re-establishment procedure.~~

~~After step 7 the UE shall successfully re-establish an RRC connection, and be able to access the dedicated physical resources in cell 2.~~

After step 8 the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 9 the UE shall transmit 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 whilst reconfiguring 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. ~~If the UE is configuring itself after receiving a radio bearer message other than RADIO BEARER RECONFIGURATION message, and when the UE subsequently receive a RADIO BEARER RECONFIGURATION message, the UE shall transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "Incompatible simultaneous reconfiguration" in IE "failure cause".~~

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.14.3 Test purpose

To confirm that if the UE receives a RADIO BEARER RECONFIGURATION message whilst reconfiguring 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 according to the previously received message.

~~To confirm that the UE keeps its configuration and transmits a RADIO BEARER RECONFIGURATION FAILURE message when the UE receives a RADIO BEARER RECONFIGURATION message before the UE configures the radio bearer according to a previous 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 the 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 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 receives the RADIO BEARER SETUP FAILURE message, the UE reconfigures the new physical channel parameters and transmits a RADIO BEARER SETUP COMPLETE message on DCCH using AM RLC. ~~The UE is in the CELL_FACH state. When the SS transmits a RADIO BEARER RECONFIGURATION message to the UE before the completion of a radio bearer reconfiguration commanded earlier, the UE keeps the old configuration. The UE shall also transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "incompatible simultaneous reconfiguration" in IE "failure cause".~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	Including IE "Uplink DPCH info"
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 the configuration because of receiving the RADIO BEARER RECONFIGURATION message.
4	→		RADIO BEARER SETUP COMPLETE	This message is on DCCH using AM RLC

Specific Message Contents

RADIO BEARER SETUP (Step 1)

For RADIO BEARER SETUP in step 1, use the message sub-type indicated as "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A.

RADIO BEARER RECONFIGURATION (Step 2)

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	Current CFN-[current CFN mod 8 + 8]

RADIO BEARER RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type	"RADIO BEARER RECONFIGURATION FAILURE"
Failure cause	Incompatible simultaneous reconfiguration
Other information element	Not checked

8.2.2.14.5 Test requirement

After step 1, SS transmits a RADIO BEARER RECONFIGURATION message before the expiry of the activation time specified in the message of step 1.

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 RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 4 the UE communicates with the SS on the DCCH and DTCH using the new physical channel parameters reconfigured as a result of the RADIO BEARER SETUP message.

~~After step 2 the UE shall keep its configuration and transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "incompatible simultaneous reconfiguration" in IE "failure cause".~~

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 a RADIO BEARER RECONFIGURATION message, which includes ~~the spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~" with criticality defined as "Reject". Then it shall transmit a RADIO BEARER RECONFIGURATION FAILURE message setting "protocol error" in IE "failure cause" and also setting "Information element value not comprehended" in IE "Protocol error cause". The UE shall keep existing configuration before reception of a RADIO BEARER RECONFIGURATION message when the RADIO BEARER RECONFIGURATION message include some IEs set to invalid value, and then the UE shall transmit 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 a RADIO BEARER RECONFIGURATION message which includes ~~the spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~", with criticality defined as "Reject".

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 invalid value.

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 the CELL_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE which includes ~~the spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~". 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 “Information element value not comprehended” in IE “Protocol error cause”. The UE keeps initial configuration when SS transmits RADIO BEARER RECONFIGURATION message including some IEs set to invalid value. The UE transmit 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	
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				The UE does not change the configuration
5	→		RADIO BEARER RECONFIGRATION FAILURE	The IE “failure cause” shall be set to “invalid configuration

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

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
UTRAN DRX cycle length coefficient~~DRX indicator~~	Undefined ~~spare~~ value

RADIO BEARER RECONFIGURATION FAILURE (Step 2)

Information Element	Value/remark
Message Type	“RADIO BEARER RECONFIGURATION FAILURE”
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	Information element value not comprehended
Other information element	Not checked

RADIO BEARER RECONFIGURATION (Step 3)

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:

Added or Reconfigured UL TrCH information	
- Transport channel identity	2
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- RLC size	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE Logical Channel list	
- Explicit List	
- RB identity	2

RADIO BEARER RECONFIGURATION FAILURE (Step 5)

Information Element	Value/remark
Message Type	
Failure cause	Invalid configuration
Other information element	Not checked

8.2.2.15.5 Test requirement

After step1 the UE shall keep its old configuration and transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, which contain the cause "protocol error" in IE "failure cause" and "Information element value not comprehended" in IE "Protocol error cause".

After step 3 the UE shall keep its old configuration.

After step 4 the UE shall transmit RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value " invalid configuration" to IE "failure cause".

8.2.2.16 Radio Bearer Reconfiguration from CELL_FACH to CELL_FACH: Success (Continue and Stop~~DCH: Failure (Suspension of signalling bearer~~)

8.2.2.16.1 Definition

8.2.2.16.2 Conformance requirement

The UE shall continue or stop the uplink transmission when the UTRAN indicate stop or continue uplink transmission in radio bearer reconfiguration procedure.~~revert to the configuration prior to the reception of the RADIO BEARER RECONFIRGURATION message which specifies the suspension of an existing signalling radio bearer. It shall then transmit a RADIO BEARER RECONFIGURATION FAILURE message to UTRAN.~~

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.16.3 Test purpose

To confirm that the UE reconfigures new radio bearer and have the uplink transmission according to a RADIO BEARER RECONFIGURATIO message which indicates that uplink transmission is continued.

To confirm that the UE reconfigures new radio bearer and don't transmit data according to a RADIO BEARER RECONFIGURATIO message which indicates that uplink transmission is stopped. ~~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 due to an inappropriate suspension request in RADIO BEARER RECONFIGURATION message.~~

8.2.2.16.4 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 RADIO BEARER RECONFIGURATION message to the UE, which includes IE" RB stop/continue" set to "continue". The UE reconfigures new radio bearer and transmit RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC. The UE communicates with the SS after transmission the RADIO BEARER RECONFIGURATION COMPLETE message. Then, SS transmits a RADIO BEARER RECONFIGURATION message including IE" RB stop/continue" set to "stop". The UE reconfigures new radio bearer and transmits RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC. The UE shall not transmit any uplink data without Signalling message after transmission the RADIO BEARER RECONFIGURATION COMPLETE message.~~includes the IE "RB suspend/resume" set to "Suspend" for one existing signalling radio bearer. The UE shall revert to the old configuration. Then the UE transmits a RADIO BEARER RECONFIGURATION 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 RECONFIGURATION	The message includes IE "RB stop/continue~~suspend/resume~~" for one of the signalling radio bearer.
2				The UE select PRACH and S-CCPCH, using SIB5 or SIB6.
~~2~~3		→	RADIO BEARER RECONFIGURATION COMPLETE~~FAILURE~~	~~The UE shall revert to the old configuration~~
4				The SS Shall communicate with the UE.
5		←	RADIO BEARER RECONFIGURATION	This message include IE" RB stop/continue ".
6				The UE select PRACH and S-CCPCH, using SIB5 or SIB6.
7		→	RADIO BEARER RECONFIGURATION COMPLETE	
8				The SS shall not receive any data from the UE without Signalling message.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

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
RB information to reconfigure list RB information to reconfigure ~~l~~ -RB identity -RB stop/continue~~suspend/resume~~	 ~~2~~5 Set to "continue~~Suspend~~"

RADIO BEARER RECONFIGURATION FAILURE

Information Element	Value/remark
~~Message Type~~ ~~Failure cause~~ ~~Other information element~~	~~"RADIO BEARER RECONFIGURATION FAILURE"~~ ~~configuration unsupported~~ ~~Not checked~~
RB information to reconfigure list RB information to reconfigure -RB identity -RB stop/continue	 5 Set to "continue"

8.2.2.16.5 Test requirement

After step ~~2~~ 3 the UE shall communicate with the SS using new configuration.

After step 7 the UE shall communicate with the SS using new configuration, but shall not transmit any data to the SS without signalling message.~~revert to the old configuration and transmit a RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC. This message shall contain the value "configuration unsupported" in IE "failure cause".~~

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 a radio bearer according to a RADIO BEARER RECONFIGURATION message which is communicate with the UTRAN on the new radio bearer and a transition from CELL_FACH to CELL_FACH in the another cell.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.17.3 Test purpose

To confirm that the UE establishes a new radio bearer by following a RADIO BEARER RECONFIGURATION message received from the SS.

8.2.2.17.4 Method of test

Initial Condition

System Simulator: ~~2~~ 1 cell~~s~~. ~~Cell 1 is active, Cell 2 is inactive~~

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 begins to broadcast the BCCH of cell 2.~~ The SS transmits a RADIO BEARER RECONFIGURATION message to the UE which includes the new transport channel parameter reconfigure for transit. The UE reconfigures the new transport cannel and transmits a RADIO BEARER RECONFIGURATION COMPLETE message using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
~~1~~		←	~~BCCH~~	~~The SS starts to broadcast the BCCH in cell 2.~~
~~2~~1		←	RADIO BEARER RECONFIGURATION	~~Including Primary CPICH Info for cell 2.~~
2				The UE select PRACH and S-CCPCH using SIB5 or SIB6.
~~3~~				~~Reconfiguration of Transport channel~~
~~4~~3		→	RADIO BEARER RECONFIGURATION COMPLETE	~~Received on the uplink DCCH of cell 2.~~

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 2)

Use the same message sub-type titled “Packet to CELL_FACH from CELL_FACH in PS“ in Annex A.

8.2.2.17.5 Test requirement

After step 3 the UE shall change its radio bearer configuration and be in ~~transit from CELL_FACH to~~ CELL_FACH ~~in the another cell and communicate with the SS on the DCCH and DTCH using the modified transport channel configurations~~

After step 4 the UE shall communicate with the SS on the DCCH and DTCH, using the common physical channel.

8.2.2.18 Radio Bearer Reconfiguration from CELL_FACH to CELL_FACH: Failure (Cell re-selection~~Physical channel failure~~)

8.2.2.18.1 Definition

8.2.2.18.2 Conformance requirement

The UE shall initiate the cell reselection procedure when the UE cannot use the assigned physical channel according to a RADIO BEARER RECONFIGURATION message, during the transition from CELL_FACH to CELL_FACH~~ in the another cell~~. After the UE completes cell update procedure, the UE transmits RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "cell reselection" in IE "failure cause".

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.18.3 Test purpose

To confirm that the UE initiates a cell update because it cannot access the assigned physical channel in current cell, when attempting to transit from CELL_FACH to CELL_FACH state during the execution of radio bearer reconfiguration procedure.

To confirm that the UE transmit RADIO BEARER SETUP FAILURE message after complete a cell update.

~~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 according to the RADIO BEARER RECONFIGURATION message received previously.~~

8.2.2.18.4 Method of test

Initial Condition

System Simulator: ~~3~~ 2 cells Cell 1 is active, Cell 2 is inactive~~, Cell 3 is inactive~~

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 in cell 1. The SS transmits a RADIO BEARER RECONFIGURATION message to the UE, which includes the new radio bearer parameters. After transmitting the RADIO BEARER RECONFIGURATION message, the SS shall not reconfigure L1 in accordance to the settings in the message. At the same time, SS begins to broadcast the BCCH in a cell 2. The UE recognizes 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 shall select cell 2 by performing cell re-selection. The UE shall move to CELL FACH and transmit CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and transmit RADIO BEARER RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value " cell reselection" to IE "failure cause". ~~The SS begins to broadcast the BCCH in cell 2 and then transmits a RADIO BEARER RECONFIGURATION message, resulting in the UE to attempt to transit from CELL_FACH in cell 1 to CELL_FACH in cell 3. The UE is expected to fail to access the assigned physical channel as the SS ceases downlink~~

~~transmission in cell 3. After the UE successfully camp onto cell 2, it shall initiate the cell update procedure in cell 2. The procedure completes when the SS confirms UE's cell update request.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	~~BCCH~~	~~The SS starts to broadcast the BCCH in cell 2.~~
2		←	RADIO BEARER RECONFIGURATION	~~The message assigns common resources so that the UE is expected to execute a transition from CELL_FACH in cell 1 to CELL_FACH in cell 3~~
3				The SS does not reconfigure the new radio bearer in cell 1.
4		←	BCCH	The SS transmit the BCCH in the cell 2.
~~3~~5				The UE shall detect a failure to use the assigned common physical channel and try to perform a cell reselection.
~~4~~6		→	CELL UPDATE	The value "cell reselection" shall be set in IE "cell update cause".~~The UE discover the presence of cell 2 and triggers a cell update procedure.~~
~~5~~7		←	CELL UPDATE CONFIRM	This message include IE "new U-RNTI" and IE "new C-RNTI"".~~SS sends this message so that the UE moves to CELL_PCH state.~~
8		→	UTRAN MOBILITY INFORMATION CONFIRM	
9		→	RADIO BEARER RECONFIGURATION FILURE	The IE "failure cause" shall be set to "cell reselection"

Specific Message Contents

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~~	 ~~200~~

CELL UPDATE (Step 6)

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	Assigned previously in cell 1
- S-RNTI	Assigned previously in cell 1
Cell Update Cause	"radio link failure"

CELL UPDATE CONFIRM (Step 8)

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 7
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 RECONFIGURATION FAILURE (Step 9)

Information Element	Value/remark
Message Type	"RADIO BEARER RECONFIGURATION FAILURE"
Failure cause	"cell reselection"
Other information element	Not checked

8.2.18.5 Test requirement

After ~~step3~~ step 4the UE shall discover the presence of cell 2, enter CELL_FACH state, and initiate a cell update procedure in that cell.

After step 7 UE transmits UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 8 UE transmits RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC, setting the value "cell reselection" to IE "failure cause".

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 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 RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.19.3 Test purpose

If the UE receives another RADIO BEARER RECONFIGURATION message before the UE configures the radio bearer according to a 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 RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

8.2.2.19.4 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 the 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 RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	Including IE "Uplink DPCH info"
2	←		RADIO BEARER RECONFIGURATION	Sent before the "activation time" in step 1 has elapsed
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)

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	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256

8.2.2.19.5 Test requirement

After step 3 the UE shall communicate with the SS on the radio bearer specified in the RADIO BEARER RECONFIGURATION message in step 1.

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 RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.20.3 Test purpose

To confirm that if the UE receives another RADIO BEARER RECONFIGURATION message before the UE configures the radio bearer according to a 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 RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

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 the 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 according to the former RADIO BEARER RECONFIGURATION message. On completion of radio bearer configuration, the UE shall transmit RADIO BEARER RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	Including IE "Uplink DPCH info"
2	←		RADIO BEARER RECONFIGURATION	SS send this message before the expiry of activation time specified in RADIO BEARER SETUP message of 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

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:

RADIO BEARER RECONFIGURATION (step 1)

Information Element	Value/remark
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256

8.2.2.20.5 Test requirement

After step 3 the UE shall communicate with the SS on the radio bearer specified in the RADIO BEARER RECONFIGURATION message in step 1.

8.2.2.~~31~~21 Radio Bearer Reconfiguration from CELL_DCH to CELL_PCH: Success

8.2.2.~~31~~21.1 Definition

8.2.2.~~31~~21.2 Conformance requirement

The UE shall transmit RADIO BEARER RECONFIGURATION COMPLETE message and transit from CELL_DCH to CELL_PCH when receives a RADIO BEARER RECONFIGURATION message. And then, the UE shall reconfigure radio bearers according to the RADIO BEARER RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.~~31~~21.3 Test purpose

To confirm that the UE transmit RADIO BEARER RECONFIGURATION COMPLETE before entering CELL_PCH state after it received a RADIO BEARER RECONFIGURATION message and reconfigured its radio bearers. The UE is in CELL_PCH state of the same cell.

8.2.2.~~31~~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 the CELL_DCH state. The SS transmits a RADIO BEARER RECONFIGURATION message. The UE transmits RADIO BEARER RECONFIGURATION COMPLETE message to the UE 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.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2		→	RADIO BEARER RECONFIGURATION COMPLETE	The UE sends this message before state transition.
3				Reconfiguration of Radio Bearer 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

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
~~DRX indicator~~RRC State Indicator	~~DRX with CELL updating~~CELL_PCH

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 Paging originator	UTRAN originator
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

8.2.2.~~31~~21.5 Test requirement

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

After step 3 the UE shall transit from CELL_DCH to CELL_PCH.

8.2.2.~~32~~22 Radio Bearer Reconfiguration from CELL_DCH to URA_PCH: Success

8.2.2.~~32~~22.1 Definition

8.2.2.~~32~~22.2 Conformance requirement

The UE shall transmit RADIO BEARER RECONFIGURATION COMPLETE message and transit from CELL_DCH to URA_PCH when receives a RADIO BEARER RECONFIGURATION message. And then, the UE shall reconfigure a radio bearer according to the RADIO BEARER RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.~~32~~22.3 Test purpose

To confirm that the UE transmit RADIO BEARER RECONFIGURATION COMPLETE before entering URA_PCH state after it received a RADIO BEARER RECONFIGURATION message and reconfigured its radio bearers. The UE is in URA_PCH state of the same cell.

8.2.2.~~32~~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 the URA_DCH state. The SS transmits a RADIO BEARER RECONFIGURATION message. The UE transmits RADIO BEARER RECONFIGURATION COMPLETE message to the UE 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.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2		→	RADIO BEARER RECONFIGURATION COMPLETE	The UE sends this message before state transition.
3				Reconfiguration of Radio Bearer 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

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
~~DRX indicator~~RRC State Indicator	~~DRX with URA updating~~URA_PCH

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 Paging originator	UTRAN originator
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

8.2.2.~~32~~22.5 Test requirement

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

After step 3 the UE shall transits from CELL_DCH to URA_PCH.

8.2.2.~~33~~23 Radio Bearer Reconfiguration from CELL_FACH to CELL_PCH: Success

8.2.2.~~33~~23.1 Definition

8.2.2.~~33~~23.2 Conformance requirement

The UE shall transmit RADIO BEARER RECONFIGURATION COMPLETE message and transit from CELL_FACH to CELL_PCH when receive a RADIO BEARER RECONFIGURATION message. And then, the UE shall reconfigure radio bearers according to the RADIO BEARER RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.~~33~~23.3 Test purpose

To confirm that the UE transmits RADIO BEARER RECONFIGURATION COMPLETE before entering CELL_PCH state after it received a RADIO BEARER RECONFIGURATION message and reconfigured its radio bearers. The UE is in CELL_PCH state of the same cell.

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 the CELL_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message. The UE transmits RADIO BEARER RECONFIGURATION COMPLETE message to the UE 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		←	RADIO BEARER RECONFIGURATION	
2		→	RADIO BEARER RECONFIGURATION COMPLETE	The UE sends this message before state transition.
3				Reconfiguration of Radio Bearer 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

RADIO BEARER 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
~~DRX indicator~~RRC State Indicator	~~DRX with CELL updating~~CELL_PCH

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 Paging originator - U-RNTI - SRNC Identity - S-RNTI	 UTRAN originator Previously assigned SRNC identity Previously assigned S-RNTI

8.2.2.~~33~~23.5 Test requirement

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

After step 3 the UE shall transit from CELL_DCH to CELL_PCH.

8.2.2.~~34~~24 Radio Bearer Reconfiguration from CELL_FACH to URA_PCH: Success

8.2.2.~~34~~24.1 Definition

8.2.2.~~34~~24.2 Conformance requirement

The UE shall transmit RADIO BEARER RECONFIGURATION COMPLETE message and transit from CELL_FACH to URA_PCH when receive a RADIO BEARER RECONFIGURATION message. And the UE shall reconfigure radio bearers according to the RADIO BEARER RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.2.~~34~~24.3 Test purpose

To confirm that the UE transmits RADIO BEARER RECONFIGURATION COMPLETE before entering URA_PCH state after it received a RADIO BEARER RECONFIGURATION message and reconfigured its radio bearers. The UE is in URA_PCH state in the same cell.

8.2.2.~~34~~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 the CELL_FACH state. The SS transmits a RADIO BEARER RECONFIGURATION message. The UE transmits RADIO BEARER RECONFIGURATION COMPLETE message to the UE 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	←		RADIO BEARER RECONFIGURATION	
2	→		RADIO BEARER RECONFIGURATION COMPLETE	The UE sends this message before state transition.
3				Reconfiguration of Radio Bearer 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

RADIO BEARER 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
~~DRX indicator~~RRC State Indicator	~~DRX with URA updating~~URA_PCH

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 Paging originator	UTRAN originator
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

8.2.2.~~34~~24.5 Test requirement

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

After step 3 the UE shall transit from CELL_FACH to URA_PCH.

8.2.3 Radio Bearer Release

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

8.2.3.1.1 Definition

8.2.3.1.2 Conformance requirement

The UE shall correctly release a radio bearer according to a RADIO BEARER RELEASE message.

Reference

3GPP TS 25.331 clause 8.2.3

8.2.3.1.3 Test purpose

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

8.2.3.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CS-DCCH+DTCH_DCH (state 6-9) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the CELL_DCH state. The SS transmits a RADIO BEARER RELEASE message to the UE. The UE release the radio bearer and transmits a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RELEASE	
2				Release the radio bearer
3	→		RADIO BEARER RELEASE COMPLETE	

Specific Message Contents

RADIO BEARER RELEASE

The contents of RADIO BEARER RELEASE message are indicated as “Speech in CS” found in default message content clause 9 of TS 34.108.

8.2.3.1.5 Test requirement

After step 1 the UE shall release its radio bearers.

After step 3 the UE shall stop communicating on the released radio bearers, no uplink transmission shall be observed originating from the released link. The remaining radio bearers shall continue to be operational.

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) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the 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 RELAESE FAILURE	The UE does not change the radio bearer.

Specific Message Contents

RADIO BEARER RELEASE

The contents of RADIO BEARER RELEASE message in this test case is identical as “Speech in CS” found in default message content clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
Frequency info - UARFCN uplink(Nu) - UARFCN downlink(Nd)	 63984 Not Present

RADIO BEARER RELEASE FAILURE

Information Element	Value/remark
Message Type Failure cause Other information element	 Configuration unsupported Not checked

8.2.3.2.5 Test requirement

After step 1 the UE shall keep its old configuration and transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC with the IE “failure cause” set to “configuration unsupported”. The UE shall able to continue receiving and sending user data.

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 configure the new radio bearer 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) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the CELL_DCH state. The SS transmits a RADIO BEARER RELEASE message but it does not configure L1 correspondingly. This causes the UE to fail to release the radio bearer, and after T312 expiry 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 does not configure L1 to reflect the release of the indicated bearer.
3	→		RADIO BEARER RELEASE FAILURE	After T312 expiry, 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" found in default message content clause 9 of TS 34.108

RADIO BEARER RELEASE FAILURE

Information Element	Value/remark
Message Type	
Failure cause	Physical channel failure
Other information element	Not checked

8.2.3.3.5 Test requirement

After step 2 the UE shall revert to the old configuration and 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 ~~n RRC connection re-establishment~~ 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 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 RADIO BEARER RELEASE FAILURE message after completes ~~initiates an~~ cell update ~~RRC connection re-establishment~~ 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: 2 cells - Cell 1 is active, Cell.2 is inactive

UE: CS-DCCH+DTCH_DCH (state 6-9) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE is in the CELL_DCH state in cell 1. The SS begins to broadcast the BCCH in cell 2 with a lower power level than for cell 1. At the same time, it transmits a RADIO BEARER RELAESE message to the UE but does not configure L1. As a result, the UE fails to release the radio bearer properly and tries to revert to the old configuration ~~after T312 expiry~~. But the SS deletes the old radio bearer so the UE shall find the availability of cell 2 and transmits 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 UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and subsequently transmits RADIO RELEASE FAILURE message on the DCCH using AM RLC, setting IE “failure cause” to ” physical channel failure”.~~to it an RRC CONNECTION RE-ESTABLISHMENT REQUEST message, which includes the IE “U-RNTI” and sent on the uplink CCCH. The SS transmits an RRC CONNECTION RE-ESTABLISHMENT message, which includes a new TFCS according to the new transport channel. After the UE receives an RRC CONNECTION RE-ESTABLISHMENT message, it reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		BCCH	The SS starts to transmit the BCCH for cell 2 but at a lower power level than cell 1.
2	←		RADIO BEARER RELEASE	
3				The SS does not configure L1 and deletes the old configuration. This is expected to cause the UE to fail in the release the radio bearer and can not revert to the old configuration.
4	→		CELL UPDATE~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~	The UE shall find cell 2 and enter CELL_FACH state. This message include the value "radio link failure" set in IE "Cell update cause".~~then transmit this message which includes the IE "U-RNTI" set to its assigned connected mode identity.~~
5	←		CELL UPDATE CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT~~	This message include IE "new U-RNTI" and IE "new C-RNTI"".~~Including the new TFCS according to the new transport channel.~~
6	→		UTRAN MOBILITY INFORMATION CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT 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" found in default message content clause 9 of TS 34.108.

CELL UPDATE (Step 4)

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	Assigned previously in cell 1
- S-RNTI	Assigned previously in cell 1
Cell Update Cause	"radio link failure"

CELL UPDATE CONFIRM (Step 5)

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 7
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 RELEASE FAILURE (Step 7)

Information Element	Value/remark
Message Type	"RADIO BEARER RELEASE FAILURE"
Failure cause	"physical channel failure"
Other information element	Not checked

8.2.3.4.5 Test requirement

After step 3 the UE shall find the presence of cell 2, enter CELL_FACH state, and transmits CELL UPDATE ~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~ message on the uplink CCCH ~~of 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 RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to " physical channel failure".

~~After step 6 the UE shall successfully re-establish an RRC connection, after sending RRC CONNECTION RE-RESTABLISHMENT COMPLETE message.~~

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 RELAESE message whilst reconfiguring due to a radio bearer message other than RADIO RELEASE SETUP, it shall keep its configuration as if the RADIO BEARER SETUP message had not been received. ~~If the UE is configuring itself after receiving a message and when the UE subsequently receive a RADIO BEARER RELEASE messagethe~~

Reference

3GPP TS 25.331 clause 8.2.3

8.2.3.5.3 Test purpose

To confirm that if the UE receives a RADIO BEARER RELEASE message whilst reconfiguring 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 according to the previously received message. ~~To confirm that the UE keeps its configuration when the UE receives a RADIO BEARER RELEASE message before the UE releases the radio bearer according to the earlier message.~~

8.2.3.5.4 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 RADIO BEARER SETUP message to the UE. The SS transmits a RADIO BEARER SETUP message before the "activation time" indicated in the RADIO BEARER SETUP message expires. When the UE receives the RADIO BEARER SETUP 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". After the SS receives the RADIO BEARER RELEASE FAILURE message, the UE reconfigures the new physical channel parameters and transmits a RADIO BEARER SETUP COMPLETE message on DCCH using AM RLC.

~~The UE is in the CELL_DCH state. SS transmits a RADIO BEARER RELEASE message on the downlink DCCH, requesting the UE to release all radio bearers mapped to dedicated transport channels. Next, the SS transmits another RADIO BEARER RELEASE message to the UE before the UE is able to release the radio bearers requested in the earlier message. The UE shall keep the old configuration. It shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC which is set to "incompatible simultaneous reconfiguration" in IE "failure cause".~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	
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 SETUP COMPLETE	This message is on DCCH using AM RLC.

Specific Message Contents

RADIO BEARER SETUP (Step 1)

The contents of RADIO SETUP 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	Current CFN-[current CFN mod 8 + 8]

RADIO BEARER RELEASE (Step 2)

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. Information element(s) to be changed are listed below:

RADIO BEARER RELEASE FAILURE

Information Element	Value/remark
Message Type	
Failure cause	Incompatible simultaneous reconfiguration
Other information element	Not checked

8.2.3.5.5 Test requirement

After step 1, SS transmits a RADIO BEARER RELEASE message before the expiry of the activation time specified in the message of step 1.

After step 2 the UE shall keep its configuration as if the UE 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 step 4 the UE communicates with the SS on the DCCH and DTCH using the new physical channel parameters reconfigured as a result of the RADIO BEARER SETUP message. ~~After step 2 the UE shall keep its old configuration and transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC which is set to "incompatible simultaneous reconfiguration" in IE "failure cause".~~

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 a RADIO BEARER RELEASE message which includes ~~the spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient ~~DRX indicator~~". It shall transmit a RADIO BEARER RELEASE FAILURE message which contains value "protocol error" in IE " failure cause" and value "Information element value not comprehended" in IE " Protocol error cause". The UE shall keep existing configuration before reception of a RADIO BEARER RELEASE message when the RADIO BEARER RELEASE message include some IEs set to invalid value, and then the UE shall transmit 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 a RADIO BEARER RELEASE message, which uses a ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient ~~DRX indicator~~".

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 invalid value.

8.2.3.6.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CS-DCCH+DTCH_DCH (state 6-9) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the CELL_DCH state. The SS transmits a RADIO BEARER RELAESE message to the UE which includes ~~the spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~". 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 "Information element value not comprehended" in IE "Protocol error cause". The UE keeps initial configuration and SS transmits RADIO BEARER RELEASE message including some IEs set to invalid value. The UE transmits 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	
2	→		RADIO BEARER RELEASE FAILURE	The UE shall not change the configuration.
3	←		RADIO BEARER RELEASE	This message includes IE set to invalid value
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)

The contents of RADIO BEARER RELEASE message in this test case is identical as "Speech in CS" found in default message content clause 9 of TS 34.108 with the following exceptions:

Information Element	Value/remark
UTRAN DRX cycle length coefficient~~DRX indicator~~	~~Spare~~ Undefined value

RADIO BEARER RELEASE FAILURE (Step 2)

Information Element	Value/remark
Message Type	
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	Information element value not comprehended
Other information element	Not checked

RADIO BEARER RELEASE (Step 3)

The contents of RADIO BEARER RELEASE message in this test case is identical as "Speech in CS" found in default message content clause 9 of TS 34.108 with the following exceptions:

Added or Reconfigured UL TrCH information	
- Transport channel identity	1
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- RLC size	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE Logical Channel list	
- Explicit List	
- RB identity	2

RADIO BEARER RELEASE FAILURE (Step 5)

Information Element	Value/remark
Message Type	
Failure cause	Invalid configuration
Other information element	Not checked

8.2.3.6.5 Test requirement

After step 1 the UE shall keep its old configuration and 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 "Information element value not comprehended" in IE "Protocol error cause".

After step 3 the UE shall keep its old configuration.

After step 4 the UE shall transmit RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting the value " invalid configuration" to IE "failure cause".

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

8.2.3.7.1 Definition

8.2.3.7.2 Conformance requirement

The UE shall correctly release a radio bearer according to a RADIO BEARER RELEASE message, when the common physical channel are requested to be used for the remaining radio bearers.

Reference

3GPP TS 25.331 clause 8.2.3

8.2.3.7.3 Test purpose

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

8.2.3.7.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DTCH+DCCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the CELL_DCH state. The SS transmits a RADIO BEARER RELEASE message to the UE. The UE release the radio bearer and transmits a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RELEASE	SS releases the radio bearer in the fashion specified in the message and allocate common channel resources to carry the remaining radio bearers.
2				The UE select PRACH and S-CCPCH using SIB5 and SIB6 after entering CELL FACH state. The UE shall release radio bearers on dedicated transport channels, and reconfigure the remaining radio bearers using the ~~given~~ selected common control channel.
3	→		RADIO BEARER RELEASE COMPLETE	UE shall be able to continue communication over the remaining radio bearers using the ~~allocated~~ common control channels.

Specific Message Contents

RADIO BEARER RELEASE (Step 1)

Use the same message sub-type titled “Packet to CELL_FACH from CELL_DCH in PS” in Annex A.

8.2.3.7.5 Test requirement

After step 3 the UE shall release the specified radio bearer(s) and cease any further uplink transmission from these radio bearer(s). ~~At the same time, it shall resume the transmission or reception of data for the previously suspended radio bearers~~.

8.2.3.8 Radio Bearer Release for transition from CELL_DCH to CELL_FACH: Failure (Cell re-selection~~Physical channel failure~~)

8.2.3.8.1 Definition

8.2.3.8.2 Conformance requirement

The UE shall initiate the cell update procedure when the UE cannot use the assigned physical channel according to a RADIO BEARER RELEASE message as the transition from CELL_DCH to CELL_FACH. After the UE completes cell update procedure, the UE transmits RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC which set IE “failure cause” to “cell reselection”.

Reference

3GPP TS 25.331 clause 8.2.3

8.2.3.8.3 Test purpose

To confirm that the UE transmits RADIO BEARER RELEASE FAILURE message after the UE ~~perform~~ completes a cell update procedure when the UE cannot use the assigned physical channel according to a RADIO BEARER RELEASE message as the transition from CELL_DCH to CELL_FACH.

8.2.3.8.4 Method of test

Initial Condition

System Simulator: 2 cells• No.1 is active, No.2 is inactive•

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 in cell No.1. The SS begins to broadcast the BCCH in cell No.2 and transmits a RADIO BEARER RELEASE message as the transition from CELL_DCH to CELL_FACH. The UE cannot use the assigned physical channel as the SS does not transmit any data on the DL common channel in cell No.1. Then the UE reselects cell 2 and initiates the cell update procedure in cell No.2. The UE transmits CELL UPDATE message on uplink CCCH with IE “Cell update cause“ set to “cell reselection”. The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmits UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and transmits RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting IE “failure cause” to ” cell reselection”.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		BCCH	The SS broadcasts BCCH in cell No.2.
2	←		RADIO BEARER RELEASE	Assigned the transition from CELL_DCH to CELL_FACH
3				The UE cannot use the assigned the physical channel.
4	→		CELL UPDATE	The UE finds a new cell No.2 and begins a cell update procedure. The value "cell reselection" shall be set in IE "cell update cause".
5	←		CELL UPDATE CONFIRM	This message include IE "new U-RNTI" and IE "new C-RNTI"~~.In the CELL_FACH state~~
6	→		UTRAN MOBILITY INFORMATION CONFIRM	
7	→		RADIO BEARER RELEASE FAILURE	The IE "failure cause" shall be set to "cell reselection"

Specific Message Contents

RADIO BEARER RELEASE

Use the same message sub-type titled "Packet to CELL_FACH from CELL_DCH 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 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	"radio link failure"

CELL UPDATE CONFIRM (Step 5)

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 7
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 RELEAS FAILURE (Step 6)

Information Element	Value/remark
Message Type	"RADIO BEARER RECONFIGURATION FAILURE"
Failure cause	"cell reselection"
Other information element	Not checked

8.2.3.8.5 Test requirement

After step 3 the UE shall find a new cell No.2 and enter to CELL_FACH state. Then the UE shall initiate a cell update procedure in cell No.2.

After step 4 UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 5 UE shall transmit RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting the value ”cell reselection” to IE “failure cause”.

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

8.2.3.9.1 Definition

8.2.3.9.2 Conformance requirement

The UE shall correctly release a radio bearer according to a RADIO BEARER RELEASE message.

Reference

3GPP TS 25.331 clause 8.2.3

8.2.3.9.3 Test purpose

To confirm that an UE, in state CELL_FACH, releases the radio access bearers on RACH and FACH transport channels. After the release, it shall access the affected radio bearers on the newly allocated DCH transport channel.

8.2.3.9.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: PS-DCCH+DTCH_FACH (state 6-~~10~~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 RADIO BEARER RELEASE message to the UE. In this message, SS commands the UE to release radio bearers on RACH and FACH. At the same time, SS allocates DCH to support the affected radio bearers. The UE shall release the indicated radio bearer and transmits a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RELEASE	
2				UE shall release the radio access bearers carried by RACH and FACH transport channels.
3	→		RADIO BEARER RELEASE COMPLETE	

Specific Message Contents

RADIO BEARER RELEASE (Step 1)

Use the same message sub-type titled “Packet to CELL_DCH from CELL_FACH in PS” in Annex A.

8.2.3.9.5 Test requirement

After step3 the UE shall stop communicating on the released radio bearers, and resume all ~~suspended~~ stopped radio bearer using the dedicated physical channel allocated.

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 unsupported configuration parameters for 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 the CELL_FACH state. The SS transmits a RADIO BEARER RELAESE 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 RELAESE FAILURE	The UE shall not change the radio bearer configuration.

Specific Message Contents

RADIO BEARER RELEASE

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)	 63984 Not Present

RADIO BEARER RELEASE FAILURE

Information Element	Value/remark
Message Type Failure cause Other information element	 Configuration unsupported Not checked

8.2.3.10.5 Test requirement

After step 2 the UE shall keep its old configuration and 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 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 configure the new radio bearer before T312 timer expiry. 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".

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 bearer in accordance the specified settings in RADIO BEARER RELEASE message by T312 timer expiry.

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 the CELL_FACH state. The SS transmits a RADIO BEARER RELEASE message and does not configure L1. The UE is expected to encounter a failure while releasing the radio bearer. After T312 timer expiry, 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 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

Information Element	Value/remark
Message Type	
Failure cause	Physical channel failure
Other information element	Not checked

8.2.3.11.5 Test requirement

After step 2 the UE shall revert to the old configuration and 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)

8.2.3.12.1 Definition

8.2.3.12.2 Conformance requirement

The UE shall perform a~~n RRC connection re-establishment~~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 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

8.2.3.12.3 Test purpose

To confirm that the UE transmits RADIO BEARER RELEASE FAILURE message after it completes ~~initiates an~~ cell update ~~RRC connection re-establishment~~ procedure when the UE cannot revert to the old configuration, following a physical channel failure during the radio bearer release.

8.2.3.12.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell.1 is active, Cell 2 is inactive

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108 in cell No.1

Test Procedure

The UE is in the CELL_FACH state in cell 1. The SS begins to broadcast the BCCH in cell 2 and then transmits a RADIO BEARER RELAESE message to the UE, but it does not configure L1. 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 ~~after T312 expiry~~. The SS deletes the old radio bearer, so the UE shall find cell 2 and transmits 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 UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and subsequently transmits RADIO RELEASE FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to " physical channel failure". ~~to it an RRC CONNECTION RE-ESTABLISHMENT REQUEST message, which includes the IE "U-RNTI" on the uplink CCCH. After receiving this message, the SS transmits an RRC CONNECTION RE-ESTABLISHMENT message which includes a new TFCS according to the new transport channel. After the UE receives an RRC CONNECTION RE-ESTABLISHMENT message, it reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	BCCH	The SS starts to transmit the BCCH in a cell 2.
2		←	RADIO BEARER RELEASE	
3				The SS does not configure L1 and deletes the old configuration so the UE cannot release the radio bearer and also fails revert to the old configuration.
4		→	CELL UPDATE~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~	The UE finds a new cell 2 and enter CELL_FACH state. This message include the value "radio link failure" set in IE "Cell update cause".~~and then transmits this message which includes the IE "U-RNTI" it has been assigned to.~~
5		←	CELL UPDATE CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT~~	This message include IE "new U-RNTI" and IE "new C-RNTI"".~~Including the new TFCS according to the new transport channel.~~
6		→	UTRAN MOBILITY INFORMATION CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT COMPLETE~~	
7		→	RADIO BEARER RELEASE FAILURE	The IE "failure cause" shall be set to "physical channel failure"

Specific Message Contents

RADIO BEARER RELEASE

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 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	"radio link failure"

CELL UPDATE CONFIRM (Step 5)

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 7
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 RELEASE FAILURE (Step 7)

Information Element	Value/remark
Message Type	"RADIO BEARER RELEASE FAILURE"
Failure cause	"physical channel failure"
Other information element	Not checked

8.2.3.12.5 Test requirement

After step 3 the UE shall find the presence of cell 2, enter CELL_FACH state, and transmit a CELL UPDATE message ~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~ on the uplink CCCH.

After step ~~6~~ 5 the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 6 the UE shall transmit RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to " physical channel failure".

~~the UE shall successfully re-establish an RRC connection and access the dedicated physical channels assigned.~~

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 whilst reconfiguring 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.~~If the UE is configuring itself after receiving a radio bearer message other than RADIO BEARER RELEASE message, and when the UE subsequently receive a RADIO BEARER RELEASE message the UE shall transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC which is set to "Incompatible simultaneous reconfiguration" in IE "failure cause".~~

Reference

3GPP TS 25.331 clause 8.2.3

8.2.3.13.3 Test purpose

To confirm that if the UE receives a RADIO BEARER RELEASE message whilst reconfiguring 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 according to the previously received message. ~~To~~

~~confirm that the UE keeps its old configuration when it receives a RADIO BEARER RELEASE message before it releases the radio bearer according to an earlier 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 the CELL_DCH state. The SS transmits a RADIO BEARER SETUP message to the UE. The SS transmits a RADIO BEARER RELEASE message before the "activation time" indicated in the RADIO BEARER SETUP message expires. When the UE receives the RADIO BEARER SETUP message, the UE shall keep the 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 receives the RADIO BEARER SETUP FAILURE message, the UE reconfigures the new physical channel parameters and transmits a RADIO BEARER SETUP COMPLETE message on DCCH using AM RLC. ~~The UE is in the CELL_FACH state. When the SS transmits a RADIO BEARER RELEASE message to the UE before the UE completes the release of the radio bearer, it shall keep the old configuration and transmit an RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC. This message shall specify the reason "incompatible simultaneous reconfiguration" in IE "failure cause".~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER SETUP	The UE receive any message other than RADIO BEARER RELEASE. (e.g. RADIO BEARER SETUP)
2	←		RADIO BEARER SETUP	Sent before the expiry stated in IE "Activation Time" of message in step 1.
3	→		RADIO BEARER RELEASE FAILURE	The UE does not change the configuration due to the reception of RADIO BEARER SETUP message..
4	→		RADIO BEARER SETUP COMPLETE	This message is on DCCH using AM RLC.

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 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]

RADIO BEARER RELEASE (Step 2)

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]

RADIO BEARER RELEASE FAILURE

Information Element	Value/remark
Message Type	
Failure cause	Incompatible simultaneous reconfiguration
Other information element	Not checked

8.2.3.13.5 Test requirement

After step 1, SS transmits a RADIO BEARER RELEASE message before the expiry of the activation time specified in the message of step 1.

After step 2 the UE shall keep its configuration as if the UE 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 step 4 the UE communicates with the SS on the DCCH and DTCH using the new physical channel parameters reconfigured as a result of the RADIO SETUP message. ~~After step 2 the UE shall keep its old configuration and transmit an RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, and set the value "incompatible simultaneous reconfiguration" in IE "failure cause".~~

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 a RADIO BEARER RELEASE message which uses a ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~". It shall transmit a RADIO BEARER RELEASE FAILURE message which indicate the value "protocol error" in IE "failure cause" and setting "Information element value not comprehended" in IE "Protocol error cause". The UE shall keep existing configuration before reception of a RADIO BEARER RELEASE message when the RADIO BEARER RELEASE message include some IEs set to invalid value, and then the UE shall transmit 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 RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC if it receives a RADIO BEARER RELEASE message which uses a ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~".

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 invalid value.

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 the CELL_FACH state. The SS transmits a RADIO BEARER RELAESE message to the UE containing a ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~". The UE keeps the old configuration and transmits a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, which shall indicate the reason "protocol error" in IE "failure cause" and also "Information element value not comprehended" in IE "Protocol error cause". The UE keeps initial configuration and SS transmits RADIO BEARER RELEASE message including some IEs set to invalid value. The UE transmit 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	
2	→		RADIO BEARER RELEASE FAILURE	The UE shall not change its current configuration.
3	←		RADIO BEARER RELEASE	This message includes IE set to invalid value
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 (Step 3)

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
UTRAN DRX Indicator~~DRX indicator~~	~~spare~~ Undefined value

RADIO BEARER RELEASE FAILURE (Step 2)

Information Element	Value/remark
Message Type	
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	Information element value not comprehended
Other information element	Not checked

RADIO BEARER RELEASE (Step 3)

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:

Added or Reconfigured UL TrCH information - Transport channel identity - TFS - Dynamic Transport format information - RLC size - CHOICE Logical Channel list - Explicit List - RB identity	 1 (This IE is repeated for TFI number) Reference to TS34.108 clause 6.10 Parameter Set 4

RADIO BEARER RELEASE FAILURE (Step 5)

Information Element	Value/remark
Message Type	
Failure cause	Invalid configuration
Other information element	Not checked

8.2.3.14.5 Test requirement

After step_1 the UE shall keep its old configuration and transmit a RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting "protocol error" in IE "failure cause" and also indicating "Information element value not comprehended" in IE "Protocol error cause".

After step 3 the UE shall keep its old configuration.

After step 4 the UE shall transmit RADIO BEARER RELEASE FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to " invalid configuration".

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

8.2.3.15.1 Definition

8.2.3.15.2 Conformance requirement

The UE shall correctly release a radio bearer according to the RADIO BEARER RELEASE message received.

Reference

3GPP TS 25.331 clause 8.2.3

8.2.3.15.3 Test purpose

To confirm that the UE release the existing the radio bearer(s) according to the RADIO BEARER RELEASE message received from the SS.

8.2.3.15.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is in the CELL_FACH state. The SS transmits a RADIO BEARER RELEASE message to the UE. The UE release the radio bearer and transmits a RADIO BEARER RELEASE COMPLETE message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RELEASE	
2				The UE select PRACH and S-CCPCH using SIB5 and SIB6. The UE shall release the requested radio bearer(s), and stop transmitting using these radio bearer(s).
3	→		RADIO BEARER RELEASE COMPLETE	

Specific Message Contents

RADIO BEARER RELEASE

Use the same message sub-type titled “Packet to CELL_FACH from CELL_FACH in PS” in Annex A.

8.2.3.15.5 Test requirement

After step 1 the UE shall cease the transmission and reception of the affected radio bearers.

After step 3 the UE shall stop communicating on radio bearers to be released.

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

Reference

3GPP TS 25.331 clause 8.2.3

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: 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. When the SS transmits a RADIO BEARER RELEASE message to the UE before the UE releases the radio bearer, the UE ignores the second RADIO BEARER RELEASE message and releases 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	
2	←		RADIO BEARER RELEASE	Message sent before. the expiry of "activation time" specified in message of step 1.
3	→		RADIO BEARER RELEASE COMPLETE	The UE ignores the RADIO BEARER RELEASE message in step 2 and confirms release according to the RADIO BEARER RELEASE message in step 1.

Specific Message Contents

RADIO BEARER RELEASE (Step 1)

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	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256

RADIO BEARER RELEASE (Step 2)

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.

8.2.3.16.5 Test requirement

After step 2 the UE shall releases the radio bearer specified in the first RADIO BEARER RELEASE message and 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 according to the previous RADIO BEARER RELEASE message. Finally, the UE shall transmit RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.3

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 ignore 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 the CELL_FACH state. The UE is in the CELL_DCH state. When the SS transmits a RADIO BEARER RELEASE message to the UE before the UE releases the radio bearer, the UE ignores the second RADIO BEARER RELEASE message and releases 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	
2	←		RADIO BEARER RELEASE	Sent before the expiry stated in IE "Activation Time" of RADIO BEARER RELEASE message in step 1.
3	→		RADIO BEARER RELEASE COMPLETE	The UE ignores the RADIO BEARER RELEASE message in step 2 and confirms release according to the RADIO BEARER RELEASE message in step 1.

Specific Message Contents

RADIO BEARER RELEASE

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:

(Step 1)

Information Element	Value/remark
Activation Time Info	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256

8.2.3.17.5 Test requirement

After step 2 the UE shall releases the radio bearer specified in the first RADIO BEARER RELEASE message and transmit an RADIO BEARER RELEASE COMPLETE message on the DCCH using AM RLC.

8.2.3.~~26~~18 Radio Bearer Release from CELL_DCH to CELL_PCH: Success

8.2.3.~~26~~18.1 Definition

8.2.3.~~26~~18.2 Conformance requirement

The UE shall transmit RADIO BEARER RELEASE COMPLETE message before completes transition from CELL_DCH to CELL_PCH when receives a RADIO BEARER RELEASE message. And then, the UE shall release radio bearers according to the RADIO BEARER Release message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.3.~~26~~18.3 Test purpose

To confirm that the UE transmits RADIO BEARER RELEASE COMPLETE before entering CELL_PCH state after it received a RADIO BEARER RELEASE message and released its radio bearers. The UE is in CELL_PCH state of the same cell.

8.2.3.~~26~~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 the CELL_DCH state. The SS transmits a RADIO BEARER RELEASE message. The UE transmits RADIO BEARER RELEASE COMPLETE message to the UE 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.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RELEASE	
2		→	RADIO BEARER RELEASE COMPLETE	The UE sends this message before completes state transition.
3		←	PAGING TYPE 1	The SS transmits this message included a matched identity.
4		→	CELL UPDATE	The UE is in CELL_FACH state.

Specific Message Contents

RADIO BEARER RELEASE (Step 1)

Use the same message sub-type titled “Packet to CELL_FACH from CELL_DCH in PS“ in Annex A with following exceptions:

Information Element	Value/remark
~~DRX indicator~~RRC State Indicator	~~DRX with CELL updating~~CELL_PCH

PAGING TYPE 1 (Step 3)

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 Paging originator - U-RNTI - SRNC Identity - S-RNTI	 UTRAN originator Previously assigned SRNC identity Previously assigned S-RNTI

8.2.3.~~26~~18.5 Test requirement

After step 1 the UE transmits RADIO BEARER RELEASE COMPLETE message to the UE on uplink DCCH using AM RLC before completes state transition.

8.2.3.~~27~~19 Radio Bearer Release from CELL_DCH to URA_PCH: Success

8.2.3.~~27~~19.1 Definition

8.2.3.~~27~~19.2 Conformance requirement

The UE shall transmit RADIO BEARER RELEASE COMPLETE message before completes transition from CELL_DCH to CELL_PCH when receives a RADIO BEARER RELEASE message. And then, the UE shall release radio bearers according to the RADIO BEARER Release message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.3.~~27~~19.3 Test purpose

To confirm that the UE transmits RADIO BEARER RELEASE COMPLETE before entering CELL_PCH state after it received a RADIO BEARER RELEASE message and released its radio bearers. The UE is in CELL_PCH state of the same cell.

8.2.3.~~27~~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 the CELL_DCH state. The SS transmits a RADIO BEARER RELEASE message. The UE transmit RADIO BEARER RELEASE COMPLETE message to the UE 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.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RELEASE	
2	→		RADIO BEARER RELEASE COMPLETE	The UE sends this message before completes state transition.
3	←		PAGING TYPE 1	The SS transmits this message included a matched identity.
4	→		CELL UPDATE	The UE is in CELL_FACH state.

Specific Message Contents

RADIO BEARER RELEASE (Step 1)

Use the same message sub-type titled “Packet to CELL_FACH from CELL_DCH in PS“ in Annex A with following exceptions:

Information Element	Value/remark
~~DRX indicator~~RRC State Indicator	~~DRX with URA updating~~URA_PCH

PAGING TYPE 1 (Step 3)

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 Paging originator	UTRAN originator
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

8.2.3.~~27~~19.5 Test requirement

After step 1 the UE transmits RADIO BEARER RELEASE COMPLETE message to the UE on uplink DCCH using AM RLC before completes state transition.

8.2.4 Transport channel reconfiguration

8.2.4.1 Transport channel reconfiguration from CELL_DCH to CELL_DCH (Hard handover to same radio frequency): Success with no transport channel type switching

8.2.4.1.1 Definition

8.2.4.1.2 Conformance requirement

The UE shall correctly reconfigure a radio bearer according to the TRANSPORT CHANNEL RECONFIGURATION message, which specifies a hard handover to another cell. After the completion of this procedure, the UE shall be able to communicate with the UTRAN on the new transport channel.

Reference

3GPP TS 25.331 clause 8.2.4

8.2.4.1.3 Test purpose

To confirm that the UE reconfigures a new transport channel according to a TRANSPORT CHANNEL RECONFIGURATION message, which also specifies that a hard handover to another cell be performed simultaneously.

8.2.4.1.4 Method of test

Initial Condition

System Simulator: 2 cells – cell 1 and cell 2 are both active

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE is in the CELL_DCH state in cell 1. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE, which includes new transport channel parameters to be applied in cell 2. The UE shall reconfigure the new transport channel and then transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH of cell 2 using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		TRANSPORT CHANNEL RECONGURATION	Hard handover to cell 2. Including UE information elements("TFS"I)
2				UE shall ~~suspend~~ stop all uplink transmissions and reconfigure itself to use the new transport channel parameters
3	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION

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
TrCH Information Elements	
-Uplink transport Channels	
-Added or Reconfigured TrCH information list	Number of Transport blocks = 2
-Downlink transport Channels	
-Added or Reconfigured TrCH information list	Number of Transport blocks = 2
Downlink information for each radio links	Same downlink UARFCN as used for cell 2
- Primary CPICH info	
- Primary Scrambling Code	150
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Initialise

8.2.4.1.5 Test requirement

After step 1 the UE shall reconfigure the radio links affected by the changes for uplink and downlink DCH. The UE shall stop transmitting on the uplink of cell 1.

After step 3 the UE shall continue to communicate with the SS on the DCCH of cell 2, using the new Transport Format Set (TFS) applicable on the existing transport channel.

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: 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 TRANSPORT CHANNEL RECONFIGURATION message to the UE, which includes unsupported configuration parameters of 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 unsupported configuration by the UE
2	→		TRANSPORT CHANNEL RECONFIGURATION FAILURE	The UE shall not change the settings used by the transport channel.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION

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" found in Annex A with the following exceptions:

Information Element	Value/remark
TrCH Information Elements -Uplink transport Channels -Added or Reconfigured TrCH information list -Downlink transport Channels -Added or Reconfigured TrCH information list	 Number of Transport blocks = 4096 Selected value as the UE can not support. Number of Transport blocks = 4096

TRANSPORT CHANNEL RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type Failure cause Other information element	"TRANSPORT CHANNEL RECONFIGURATION FAILURE" Configuration unsupported Not checked

8.2.4.2.5 Test requirement

After step 1 the UE shall keep its old configuration and 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 by 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 transport channel according to a TRANSPORT CHANNEL RECONFIGURATION message.

8.2.4.3.4 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 TRANSPORT CHANNEL RECONFIGURATION message to the UE, which includes new transport channel parameters but it does not reconfigure the new transport channel. Therefore, the UE cannot reconfigure them and have to revert to the old configuration. 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 RECONGURATION	Specifies a change in the TFS of the dedicated transport channel used.
2				The SS does not reconfigure the transport channel, leading to the UE unable to reconfigure the new transport channel.
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 “Packet to CELL_DCH from CELL_DCH in PS” in Annex A.

TRANSPORT CHANNEL RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type	“TRANSPORT CHANNEL RECONFIGURATION FAILURE”
Failure cause	Physical channel failure
Other information element	Not checked

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 ~~This procedure is used to~~upon failure of reconfiguration for a transport channel because of physical channel failure and reversion failure for the transition from CELL_FACH to CELL_FACH in the same cell. After the UE completes cell update procedure, the UE transmits 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 RADIO TRANSPORT CHANNEL RECONFIGURATION FAILURE message after it completes ~~initiates an RRC connection re-establishment~~cell update procedure when the UE cannot reconfigure the new transport channel due to a failure of L1 configuration, and subsequently fail to revert to the old configuration ~~after T312 expiry~~.

8.2.4.4.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 is active, Cell 2 is inactive

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE is in the CELL_DCH state in cell 1. SS begins to broadcast the BCCH of cell 2 using a power level lower than that applied for cell 1. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE. The message specifies a new set of transport channel parameters but the SS does not reconfigure L1 correspondingly. At the same time, SS deletes its current contexts for cell 1. As a result, the UE cannot reconfigure the new transport channel and shall attempt to revert to the old configuration. The UE shall find the presence of cell 2 and then transmit a a CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "radio link failure". The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and subsequently transmit TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to " physical channel failure".

~~n RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH. The SS transmits an RRC CONNECTION RE-ESTABLISHMENT message, which includes a new TFCS according to the new transport channel assigned. After the UE receives an RRC CONNECTION RE-ESTABLISHMENT message, it reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		BCCH	SS begins to transmit the BCCH for cell 2.
2	←		TRANSPORT CHANNEL RECONGURATION	Specifies the use of a new setting for transport channel.
3				The SS does not reconfigure L1 and deletes the old configuration present in cell 1.
4				The UE fails to reconfigure a new transport channel.
5	→		CELL UPDATE~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~	The UE detects the presence of cell.2, and enters CELL_FACH state. This message includes the value “radio link failure” set in IE ”Cell update cause”.~~then transmits this message which includes the IE “U-RNTI”.~~
6	←		CELL UPDATE CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT~~	This message includes IE “new U-RNTI” and IE “new C-RNTI”“.~~Including the new TFCS according to the new transport channel.~~
7	→		UTRAN MOBILITY INFORMATION CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT COMPLETE~~	
8	→		TRANSPORT CHANNEL RECONGURATION 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_DCH 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 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	“radio link failure”

CELL UPDATE CONFIRM (Step 6)

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 7
New U-RNTI	
- SRNC Identity	'0000 0000 0000 0001'
- S-RNTI	Different from previous S-RNTI
New C-RNTI	Different from previous C-RNTI

TRANSPORT CHANNELRECONGURATION FAILURE (Step 8)

Information Element	Value/remark
Message Type	"TRANSPORT CHANNEL RECONGURATION"
Failure cause	"physical channel failure"
Other information element	Not checked

8.2.4.4.5 Test requirement

After step 4 the UE shall discover cell 2, enter CELL_FACH state, and then transmit a ~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~CELL UPDATE message on the uplink CCCH.

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

After step 7 the UE shall transmit TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to " physical channel failure".

~~After step 7 the UE shall successfully re-establish an RRC connection in cell 2.~~

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 whilst reconfiguring due to a radio bearer message other than TRANSPORT CHANNEL RECONFIGURATION, it shall keep its configuration as if the TRANSPORT CHANNEL RECONFIGURATION message had not been received. ~~If the UE is reconfiguring itself after receiving a radio bearer message other than TRANSPORT CHANNEL RECONFIGURATION, and when the UE subsequently receive a TRANSPORT CHANNEL RECONFIGURATION message and UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "Incompatible simultaneous reconfiguration" in IE "failure cause".~~

Reference

3GPP TS 25.331 clause 8.2.4

8.2.4.5.3 Test purpose

To confirm that if the UE receives a TRANSPORT CHANNEL RECONFIGURATION message whilst reconfiguring due to a radio bearer message other than TRANSPORT CHANNEL RECONFIGURATION, it shall keep its configuration as if the TRANSPORT CHANNEL RECONFIGURATION message had not been received and complete the reconfiguration according to the previously received message. ~~To confirm that the UE keeps its current configuration and transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message when it receives a TRANSPORT CHANNEL RECONFIGURATION message before the completion of an earlier reconfiguration request.~~

8.2.4.5.4 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 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 RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "incompatible simultaneous reconfiguration". After the SS receives the TRANSPORT CHANNEL RECONFIGURATION FAILURE message, the UE reconfigures the new physical channel parameters and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC.

~~The UE is in the CELL_DCH state. When the SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE before the UE has successfully configured the transport channel specified in a previous message, the UE keeps the old configuration. After that, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, indicating "incompatible simultaneous reconfiguration" in IE "failure cause".~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	Including IE "Uplink DPCH info"
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)

For RADIO BEARER RECONFIGURATION in step 1, use the message sub-type indicated as "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A.

TRANSPORT CHANNEL RECONFIGURATION (Step 2)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical to the corresponding message found in Annex A with the following exceptions:

Information Element	Value/remark
Activation Time	Current CFN-[current CFN mod 8 + 8]

TRANSPORT CHANNEL RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type	"TRANSPORT CHANNEL RECONFIGURATION FAILURE"
Failure cause	Incompatible simultaneous reconfiguration
Other information element	Not checked

8.2.4.5.5 Test requirement

After step 1, SS transmits a TRANSPORT CHANNEL RECONFIGURATION message before the expiry of the activation time specified in the message of step 1.

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 TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 4 the UE communicates with the SS on the DCCH and DTCH using the new physical channel parameters reconfigured as a result of the RADIO BEARER RECONFIGURATION message. ~~After step2 the UE shall keep its configuration and transmit an TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, stating the reason "incompatible simultaneous reconfiguration" in IE "failure cause".~~

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 a TRANSPORT CHANNEL RECONFIGURATION message which makes use of a ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~". Then it shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message with the value "protocol error" set in IE "failure cause" and also "Information element value not comprehended" in IE "Protocol error cause". The UE shall keep existing configuration before reception of a TRANSPORT CHANNEL RECONFIGURATION message when the TRANSPORT CHANNEL RECONFIGURATION message include some IEs set to invalid value, and then the UE shall transmit TRANSPORT CHANNEL RECONFIGURATION FAILURE 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 TRANSPORT CHANNEL RECONFIGRATION FAILURE message on the DCCH using AM RLC, if the received TRANSPORT CHANNEL RECONFIGURATION message comprises an ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~".

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 invalid value.

8.2.4.6.4 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 TRANSPORT CHANNEL RECONFIGURATION message to the UE, which includes a ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~". 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

"Information element value not comprehended" in IE "Protocol error cause". The UE keeps initial configuration and SS transmits TRANSPORT CHANNEL RECONFIGURATION message including some IEs set to invalid value. The UE transmits 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	Contains an illegal value for a mandatory IE
2	→		TRANSPORT CHANNEL RECONFIGRATION FAILURE	The UE does not change the configuration.
3	←		TRANSPORT CHANNEL RECONFIGURATION	This message includes IE set to invalid value
4				The UE does not change the configuration
5	→		TRANSPORT CHANNEL RECONFIGRATION FAILURE	The IE "failure cause" shall be set to "invalid configuration

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical in Annex A for RRC tests with the following exceptions:

Information Element	Value/remark
UTRAN DRX cycle length coefficient~~DRX indicator~~	~~spare~~ Undefined value

TRANSPORT CHANNEL RECONFIGURATION FAILURE (Step 2)

Information Element	Value/remark
Message Type	" TRANSPORT CHANNEL RECONFIGURATION FAILURE"
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	Information element value not comprehended
Other information element	Not checked

TRANSPORT CHANNEL RECONFIGURATION (Step 3)

The contents of TRANSPORT CHANNEL RECONFIGURATION message in this test case is identical in Annex A for RRC tests with the following exceptions:

Added or Reconfigured UL TrCH information	
- Transport channel identity	1
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- RLC size	Reference to TS34.108 clause 6.10 Parameter Set
- CHOICE Logical Channel list	
- Explicit List	
- RB identity	2

TRANSPORT CHANNEL RECONFIGURATION FAILURE (Step 5)

Information Element	Value/remark
Message Type	
Failure cause	Invalid configuration
Other information element	Not checked

8.2.4.6.5 Test requirement

After step 1 the UE shall keep its old configuration and 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 "Information element value not comprehended" in IE "Protocol error cause".

After step 3 the UE shall keep its old configuration.

After step 4 the UE shall transmit 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 transport channels according to TRANSPORT CHANNEL RECONFIGURATION message, after it is requested to perform a transition from CELL_DCH to CELL_FACH in the same cell in conjunction with the transport channel reconfiguration.

Reference

3GPP TS 25.331 clause 8.2.4

8.2.4.7.3 Test purpose

To confirm that the UE reconfigures a new Transport channel according to a TRANSPORT CHANNEL RECONFIGURATION message received from the SS.

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 the CELL_DCH state. The SS transmits TRANSPORT CHANNEL RECONFIGURATION message to the UE and the UE ~~which omits IE "Uplink DPCH info" and IE "Downlink DPCH info". This should cause the UE to~~ performs a state transition from CELL_DCH to CELL_FACH in the same cell. The UE then reconfigures the new transport channel according to this message and reconfigure the new physical channel according to the system information messages. Finally, the UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		TRANSPORT CHANNEL RECONFIGURATION	IE "Uplink DPCH Info" and IE "Downlink DPCH Info" are not specified.
2				UE shall perform the reconfiguration of transport channel
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.

8.2.4.7.5 Test requirement

After step 3 the UE shall transit from CELL_DCH to CELL_FACH in the same cell, and then continue to communicate with SS on the new transport channel and common physical channels.

8.2.4.8 ~~Transport channel reconfiguration from CELL_DCH to CELL_FACH: Failure (Physical channel failure and reversion to old configuration)~~

~~8.2.4.8.1 Definition~~

~~8.2.4.8.2 Conformance requirement~~

~~The UE shall revert the old configuration when it fails to reconfigure the new transport channel requested. When reversion is successful, it shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message to UTRAN.~~

~~Reference~~

~~3GPP TS 25.331 clause 8.2.4~~

~~8.2.4.8.3 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 transport channel according to the TRANSPORT CHANNEL RECONFIGURATION message received.~~

~~8.2.4.8.4 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 the CELL_DCH state. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE which includes the new transport channel parameters. However, it does not reconfigure the new transport channel to reflect change. As a result, the UE should encounter difficulties in the reconfigure process and after T312 expiry, it shall revert to its stored old configuration. When the UE manages to return to the old configuration, it transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC and set the reason “physical channel failure” in IE “failure cause”.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	TRANSPORT CHANNEL RECONGURATION	
2				The SS does not reconfigure the transport channel hence the UE could not access the new transport channel.
3		→	TRANSPORT CHANNEL RECONFIGURATION FAILURE	After T312 expiry, the UE reverts to the old configuration and transmits this message using the original transport channel settings.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION

Use the message sub-type titled "Packet to CELL_FACH from CELL_DCH in PS" in Annex A.

TRANSPORT CHANNEL RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type	TRANSPORT CHANNEL RECONFIGURATION FAILURE
Failure cause	Physical channel failure
Other information element	Not checked

8.2.4.8.5 Test requirement

After step2 the UE shall attempt revert to the old configuration and transmit a TRANPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC. The failure message shall contain the reason "physical channel failure" in IE " failure cause".Void

8.2.4.9 Transport channel reconfiguration from CELL_DCH to CELL_FACH: Failure (Cell re-selectionPhysical channel failure and reversion failure)

8.2.4.9.1 Definition

8.2.4.9.2 Conformance requirement

The UE shall initiate a RRC connection re-establishmentcell update procedure when the UE cannot use the assigned physical channel according to a TRANSPORT CHANNEL RECONFIGURATION message as the transition from CELL_DCH to CELL_FACH. After the UE completes cell update procedure, the UE transmits TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "cell reselection" in IE "failure cause". , after it encounters a physical channel failure followed by an inability to revert to the old transport channel configuration.

Reference

3GPP TS 25.331 clause 8.2.4

8.2.4.9.3 Test purpose

To confirm that the UE initiates an RRC connection re-establishmentcell update procedure when the UE fails successively in the following actions: (a) configure the new transport channel according to TRANSPORT CHANNEL

RECONFIGGURATION message received and (b) revert to the old channel configuration after ~~timer T312 expiry~~. The UE transmits TRANSPORT CHANNEL RECONFIGURATION FAILURE message after it completes a cell update.

8.2.4.10.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 is active, Cell 2 is inactive

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE is in the CELL_DCH state in cell 1. SS begins to transmit the BCCH for cell 2. The SS then transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE, which specifies the new transport channel parameters on common physical channel. But the SS does not reconfigure the L1 parameters and the new transport channel to reflect this change. Consequently, the UE discovers that it cannot reconfigure the new transport channel and try to revert to the old configuration. At this time, SS deletes all context related to the old configuration in cell 1. The UE shall select cell 2 by performing cell re-selection and enter CELL FACH state. The UE transmits CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and transmit TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to " cell reselection".~~Then the UE should find cell 2 and transmits an RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH. After the reception of such a message, the SS transmits an RRC CONNECTION RE-ESTABLISHMENT message and includes a new TFCS for the new transport channel in cell 2. After receiving this message, the UE reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	BCCH	The SS starts to transmit the BCCH cell 2.
2		←	TRANSPORT CHANNEL RECONGURATION	
3				The SS does not reconfigure L1. At the same time, it deletes the old channel configuration.
4				The UE fails to reconfigure a new transport channel.
5		→	CELL UPDATE~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~	The UE shall discover the presence of cell 2 and transmits this message, which includes the IE "U-RNTI". The value "cell reselection" shall be set in IE "Cell update cause".
6		←	CELL UPDATE CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT~~	This message include IE "new U-RNTI" and IE "new C-RNTI"".~~A new TFCS is commanded according to the new transport channel.~~
7		→	UTRAN MOBILITY INFORMATION CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT COMPLETE~~	
8		→	TRANSPORT CHANNEL RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "cell reselection"

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled “Packet to CELL_FACH from CELL_DCH 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 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	“radio link failure”

CELL UPDATE CONFIRM (Step 6)

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 7
New U-RNTI	
- SRNC Identity	‘0000 0000 0000 0001’
- S-RNTI	Different from previous S-RNTI
New C-RNTI	Different from previous C-RNTI

TRANSPORT CHANNEL RECONFIGURATION FAILURE (Step 8)

Information Element	Value/remark
Message Type	“RADIO BEARER RECONFIGURATION FAILURE”
Failure cause	“cell reselection”
Other information element	Not checked

8.2.4.9.5 Test requirement

After step 4 the UE shall find cell 2, enter CELL_FACH state and then initiate cell update ~~RRC connection re-establishment~~ procedure in cell 2.

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

After step 7 UE shall transmit TRANSPORT CHANNEL FAILURE message on the DCCH using AM RLC, setting the value ”cell reselection” to IE “failure cause”.

~~After step 7 the UE shall successfully re-establish an RRC connection in cell 2.~~

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 transport channels according to 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 transport channel using dedicated physical channel according to a TRANSPORT CHANNEL RECONFIGURATION message received from the SS.

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 the CELL_FACH state. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE, 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. The UE shall reconfigure the new transport channel according to this message and then reconfigure the new physical channel according to the system information 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 3 the UE shall transit from CELL_FACH to CELL_DCH in the same cell, and continue to communicate with SS using the new transport channel configuration based on DPCH physical channels.

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.

8.2.4.14.4 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 the CELL_FACH state. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE, which includes unsupported configuration parameters for 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 unsupported configuration by the UE
2		→	TRANSPORT CHANNEL RECONFIGURATION FAILURE	The UE shall not change the transport channel.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION

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
TrCH Information Elements -Uplink transport Channels -Added or Reconfigured TrCH information list -Downlink transport Channels -Added or Reconfigured TrCH information list	 Number of transport channels = 4096 Number of transport channels = 4096

TRANSPORT CHANNEL RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type Failure cause Other information element	“TRANSPORT CHANNEL RECONFIGURATION FAILURE” Configuration unsupported Not checked

8.2.4.11.5 Test requirement

After step1 the UE shall keep its old configuration and 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 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 then 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 transport 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 the CELL_DCH state. SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE, which includes the new transport channel parameters. However, SS does not reconfigure the new transport channel accordingly. Hence, the UE shall experience a failure in the reconfiguration process. After T312 expiry, 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 transport channel causing the UE to detect a physical channel failure.
3		→	TRANSPORT CHANNEL RECONFIGURATION FAILURE	After T312 expiry 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

Information Element	Value/remark
Message Type	TRANSPORT CHANNEL RECONFIGURATION FAILURE
Failure cause	Physical channel failure
Other information element	Not checked

8.2.4.12.5 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, 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)

8.2.4.13.1 Definition

8.2.4.13.2 Conformance requirement

The UE shall initiate a cell update ~~RRC re-establishment~~ procedure when it fails to revert to the old channel configuration, following a physical channel failure in the transport channel reconfiguration procedure. After the UE completes cell update procedure, the UE transmit 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 RADIO TRANSPORT CHANNEL RECONFIGURATION FAILURE message after it completes ~~initiates an~~ cell update~~RRC connection re-establishment~~ procedure, when the UE cannot reconfigure the new transport channel for the failure of L1 configuration and subsequently fails to revert to the old configuration~~ after T312 expiry~~.

8.2.4.13.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 is active, Cell 2 is inactive

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE is in the CELL_FACH state in a cell 1. SS begins to broadcast the BCCH of cell 2 at a power level lower than in cell 1, and then it transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE in cell 1. The message includes a new set of transport channel parameters. However, the SS does not reconfigure L1 and the new

transport channel accordingly. At the same time, it deletes the current channel configurations in cell 1. As a result, the UE cannot reconfigure the new transport channel and an attempt to revert to the old configuration fails. The UE shall then find that cell 2 is available, camp onto it, and transmits 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 UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and subsequently transmits TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value " physical channel failure" to IE "failure cause".

~~an RRC CONNECTION RE-ESTABLISHMENT REQUEST message. This message shall include the IE "U-RNTI" on the uplink CCCH. When the SS receives this message, it transmits an RRC CONNECTION RE-ESTABLISHMENT message, which specifies a new TFCS according to the new transport channel used. After the UE receives this message, it reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		BCCH	The SS starts to transmit BCCH in cell 2
2	←		TRANSPORT CHANNEL RECONGURATION	
3				The SS does not reconfigure L1 and transport channel, it also deletes its current contexts for cell 1.
4				The UE shall experience a failure to reconfigure a new transport channel and also fails to revert to old configuration.
5	→		CELL UPDATE~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~	The UE shall find cell 2, camp onto it, and and be in CELL_FACH state. This message include the value "radio link failure" set in IE "Cell update cause".~~then transmits this message which includes the IE "U-RNTI".~~
6	←		CELL UPDATE CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT~~	This message include IE "new U-RNTI" and IE "new C-RNTI"".~~Including the new TFCS according to the new transport channel.~~
7	→		UTRAN MOBILITY INFORMATION CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT COMPLETE~~	
8	→		TRANSPORT CHANNEL RECONGURATION 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 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	"radio link failure"

CELL UPDATE CONFIRM (Step 6)

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 7
New U-RNTI	
- SRNC Identity	'0000 0000 0000 0001'
- S-RNTI	Different from previous S-RNTI
New C-RNTI	Different from previous C-RNTI

TRANSPORT CHANNELRECONGURATION FAILURE (Step 8)

Information Element	Value/remark
Message Type	"TRANSPORT CHANNEL RECONGURATION"
Failure cause	"physical channel failure"
Other information element	Not checked

8.2.4.13.5 Test requirement

After step 4 the UE shall find the presence of cell 2, enter CELL_FACH state, and transmit CELL UPDATE message on the uplink CCCH ~~RRC RE-ESTABLISHMENT REQUEST message to attempt to setup the RRC connection~~ in cell 2.

After step ~~7~~ 6 the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

After step 7 the UE shall transmit TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".~~the UE shall successfully re-establish the RRC connection in cell 2.~~

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 whilst reconfiguring due to a radio bearer message other than TRANSPORT CHANNEL RECONFIGURATION, it shall keep its configuration as if the TRANSPORT CHANNEL RECONFIGURATION message had not been received.

~~If the UE is reconfiguring itself after receiving a radio bearer message other than TRANSPORT CHANNEL RECONFIGURATION, and when the UE subsequently receive a TRANSPORT CHANNEL RECONFIGURATION message and UE shall transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "Incompatible simultaneous reconfiguration" in IE "failure cause".~~

Reference

3GPP TS 25.331 clause 8.2.4

8.2.4.14.3 Test purpose

To confirm that if the UE receives a TRANSPORT CHANNEL RECONFIGURATION message whilst reconfiguring due to a radio bearer message other than TRANSPORT CHANNEL RECONFIGURATION, it shall keep its

configuration as if the TRANSPORT CHANNEL RECONFIGURATION message had not been received and complete the reconfiguration according to the previously received message. ~~To confirm that the UE keeps its configuration and transmits a TRANSPORT CHANNEL RECONFIGURATION FAILURE message when it receives a TRANSPORT CHANNEL RECONFIGURATION message before the completion of configuration from an earlier reques.~~

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 the 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 RADIO BEARER SETUP FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "incompatible simultaneous reconfiguration". After the SS receives the RADIO TRANSPORT CHANNEL RECONFIGURATION FAILURE message, the UE reconfigures the new physical channel parameters and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC. ~~The UE is in the CELL_FACH state. When the SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE before it has configured based on an earlier request. It shall keep the old configuration and then transmitting a TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC. The content of the failure message shall indicate "incompatible simultaneous reconfiguration" in IE "failure cause".~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		RADIO BEARER RECONFIGURATION	Includes the IE "Uplink DPCH info"
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 change the configuration due to the reception of RADIO BEARER SETUP message...
4	→		RADIO BEARER RECONFIGURATION FAILURE	This message is on DCCH using AM RLC.

Specific Message Contents

RADIO BEARER RECONFIGURATION (Step 1)

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.

TRANSPORT CHANNEL RECONFIGURATION (Step 2)

For TRANSPORT CHANNEL RECONFIGURATION in step 2, use the message sub-type indicated as "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A.

Information Element	Value/remark
Activation Time Info	Current CFN-[current CFN mod 8 + 8]

TRANSPORT CHANNEL RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type	"TRANSPORT CHANNEL RECONFIGURATION FAILURE"
Failure cause	Incompatible simultaneous reconfiguration
Other information element	Not checked

8.2.4.14.5 Test requirement

After step 1, SS transmits a TRANSPORT CHANNEL RECONFIGURATION message before the expiry of the activation time specified in the message of step 1.

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 TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC with IE "failure cause" set to "Incompatible simultaneous reconfiguration".

After step 4 the UE communicates with the SS on the DCCH and DTCH using the new physical channel parameters reconfigured as a result of the RADIO BEARER RECONFIGURATION message. ~~After step 2 the UE shall keep its configuration and transmit an TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value to "incompatible simultaneous reconfiguration" in IE "failure cause".~~

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 a TRANSPORT CHANNEL RECONFIGURATION message which includes a ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~". The UE shall then transmit a TRANSPORT CHANNEL RECONFIGURATION FAILURE message, specifying "protocol error" in IE "failure cause" and also "Information element value not comprehended" in IE "Protocol error cause". The UE shall keep existing configuration before reception of a TRANSPORT CHANNEL RECONFIGURATION message when the TRANSPORT CHANNEL RECONFIGURATION message include some IEs set to invalid value, and then the UE shall transmit 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 TRANSPORT CHANNEL RECONFIGRATION FAILURE message on the DCCH using AM RLC, if it receives a TRANSPORT CHANNEL RECONFIGURATION message which uses a ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~".

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 invalid value.

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 the CELL_FACH state. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE, which includes a ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~". 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 "Information element value not comprehended" in IE "Protocol error cause". The UE keeps initial configuration and SS transmits TRANSPORT CHANNEL RECONFIGURATION message including some IEs set to invalid value. The UE transmit 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	Contains an error in one of the mandatory IE in the message.
2	→		TRANSPORT CHANNEL RECONFIGRATION FAILURE	The UE does not change the configuration.
3	←		TRANSPORT CHANNEL RECONFIGURATION	This message includes IE set to invalid value
4				The UE does not change the configuration
5	→		TRANSPORT CHANNEL RECONFIGRATION FAILURE	The IE "failure cause" shall be set to "invalid configuration

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 title "Packet to CELL_DCH from CELL_FACH in PS" found in Annex A with the following exceptions:

Information Element	Value/remark
UTRAN DRX cycle length coefficient~~DRX indicator~~	~~spare~~ Undefined value

TRANSPORT CHANNEL RECONFIGURATION FAILURE (Step 2)

Information Element	Value/remark
Message Type	" TRANSPORT CHANNEL RECONFIGURATION FAILURE"
Failure cause - Failure cause - Protocol error information - Protocol error cause	 Protocol error Information element value not comprehended
Other information element	Not checked

TRANSPORT CHANNEL RECONFIGURATION (Step 3)

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:

Added or Reconfigured UL TrCH information - Transport channel identity - TFS - Dynamic Transport format information - RLC size - CHOICE Logical Channel list - Explicit List - RB identity	 1 (This IE is repeated for TFI number) Reference to TS34.108 clause 6.10 Parameter Set 2

TRANSPORT CHANNEL RECONFIGURATION FAILURE (Step 5)

Information Element	Value/remark
Message Type	
Failure cause	Invalid configuration
Other information element	Not checked

8.2.4.15.5 Test requirement

After step_1 the UE shall keep its old configuration and 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 "Information element value not comprehended" in IE "Protocol error cause".

After step 3 the UE shall keep its old configuration.

After step 4 the UE shall transmit 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 and transition from CELL_FACH to CELL_FACH in the another cell 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 reconfigures a new transport channel according to a TRANSPORT CHANNEL RECONFIGURATION message received from the SS.

8.2.4.16.4 Method of test

Initial Condition

System Simulator: ~~2~~ 1 cell~~s Cell 1 is active, Cell 2 is inactive~~

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 TRANSPORT CHANNEL RECONFIGURATION message to the UE, which includes new transport channel parameters ~~for Hand Over~~. The UE reconfigures the new transport

channel and the new physical channel according to the system information messages. The UE transmits a TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
~~1~~	~~—←~~		~~BCCH~~	~~The SS starts to broadcast the BCCH in cell 2.~~
~~2~~1	←		TRANSPORT CHANNEL RECONGURATION	~~Including Primary CPICH Info~~
~~3~~2				Reconfiguration of a new transport channel
~~4~~3	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION

Use the message sub-type titled “Packet to CELL_FACH from CELL_FACH in PS” in Annex A.

8.2.4.16.5 Test requirement

After step3 the UE shall transit from CELL_FACH to CELL_FACH ~~in the another cell~~ and continue to communicate with the SS on the DCCH using the existing transport channel.

8.2.4.17 Transport channel reconfiguration from CELL_FACH to CELL_FACH: Failure (Cell re-selection~~Physical channel failure~~)

8.2.4.17.1 Definition

8.2.4.17.2 Conformance requirement

The UE shall initiate the cell ~~reselection~~ update procedure when the UE cannot use the assigned physical channel according to a TRANSPORT CHANNEL RECONFIGURATION message, during the transition from CELL_FACH to CELL_FACH in the another cell. After the UE complete cell update procedure, the UE transmit TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which set IE “failure cause” to ” invalid configuration”.

Reference

3GPP TS 25.331 clause 8.2.4

8.2.4.17.3 Test purpose

To confirm that the UE perform a cell reselection and cell update procedure when the it fail to access the assigned physical channel, according to a TRANSPORT CHANNEL RECONFIGURATION message, during the transition from CELL_FACH to CELL_FACH in the another cell.

To confirm that the UE transmit TRANSPORT CHANNEL RECONFIGURATION FAILURE message after UE completes a cell update.

8.2.4.~~21~~17.4 Method of test

Initial Condition

System Simulator: ~~3~~ 2 cells Cell 1 is active, Cell 2 is inactive~~, Cell 3 is inactive~~

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 in cell 1. The SS begins to broadcast the BCCH in cell 2 and then transmits a TRANSPORT CHANNEL RECONFIGURATION message, resulting in the UE to attempt to transit from CELL_FACH ~~in cell 1~~ to CELL_FACH in cell ~~3~~1. The UE is expected to fail to access the assigned physical channel as the SS ceases downlink transmission in cell ~~3~~1. After the UE successfully camp onto cell 2, it shall initiate the cell update procedure in cell 2. The UE transmit CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and transmit TRANSPORT CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value " cell reselection" to IE "failure cause". ~~The procedure completes when the SS confirms UE's cell update request.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	BCCH	The SS starts to broadcast the BCCH in cell 2.
2		←	TRANSPORT CHANNEL RECONFIGURATION	The message assigns common resources so that the UE is expected to execute a transition from CELL_FACH in ~~cell 1~~ to CELL_FACH in cell ~~3~~1
3				The UE shall detect a failure to use the assigned common physical channel and try to perform a cell reselection.
4		→	CELL UPDATE	The UE discover the presence of cell 2 and triggers a cell update procedure. The value "cell reselection" shall be set in IE "Cell update cause".
5		←	CELL UPDATE CONFIRM	This message include IE "new U-RNTI" and IE "new C-RNTI". ~~SS sends this message so that the UE moves to CELL_PCH state.~~
6		→	UTRAN MOBILITY INFORMATION CONFIRM	
7		→	TRANSPORT CHANNELRECONFIGURATION FAILURE	The IE "failure cause" shall be set to "cell reselection"

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL_FACH 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 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 "radio link failure"

CELL UPDATE CONFIRM (Step 5)

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 New U-RNTI - SRNC Identity - S-RNTI New C-RNTI	Same as CELL UPDATE message in step 7 '0000 0000 0000 0001' Different from previous S-RNTI Different from previous C-RNTI

TRANSPORT CHANNEL RECONFIGURATION FAILURE (Step 7)

Information Element	Value/remark
Message Type Failure cause Other information element	"RADIO BEARER RECONFIGURATION FAILURE" "cell reselection" Not checked

8.2.4.17.5 Test requirement

After step 3 the UE shall discover the presence of cell 2, enter CELL_FACH state, and initiate a cell update procedure in that cell.

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

After step 6 UE shall transmit TRANSPORT CHANNEL FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to "cell reselection".

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 TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.4

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: 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. When the SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE before the UE configures the radio bearer, the UE ignores the new TRANSPORT CHANNEL RECONFIGURATION message and configures according to the previous TRANSPORT CHANNEL RECONFIGURATION message. Finally, the UE shall transmit TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	TRANSPORT CHANNEL RECONFIGURATION	Including IE "Uplink DPCH info"
2		←	TRANSPORT CHANNEL RECONFIGURATION	SS send this message before the expiry of "activation time" specified in TRANSPORT CHANNEL SETUP message of step 1.
3		→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE ignores the TRANSPORT CHANNEL RECONFIGURATION message in step 2 and confirms configuration according to the TRANSPORT CHANNEL RECONFIGURATION message in step 1.

Specific Message Contents

The contents of TRANSPORT CHANNEL RECONFIGURATION messages 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:

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

Information Element	Value/remark
Activation Time	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256

8.2.4.18.5 Test requirement

After step 3 the UE shall communicate with the SS on the radio bearer specified in the TRANSPORT CHANNEL RECONFIGURATION message in step 1.

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

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 the CELL_FACH state. When the SS transmits a TRANSPORT CHANNEL RECONFIGURATION message to the UE before the UE configures the radio bearer, the UE ignores the new TRANSPORT CHANNEL RECONFIGURATION message and configures according to the previous TRANSPORT CHANNEL RECONFIGURATION message. Finally, the UE shall transmit TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		TRANSPORT CHANNEL RECONFIGURATION	Includes the IE "Uplink DPCH info"
2	←		TRANSPORT CHANNEL RECONFIGURATION	Sent before the elapse of the activation time specified in step 1.
3	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE ignores the TRANSPORT CHANNEL RECONFIGURATION message in step 2 and confirms configuration according to the TRANSPORT CHANNEL RECONFIGURATION message in step 1.

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 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	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256

8.2.4.19.5 Test requirement

After step 3 the UE shall communicate with the SS on the radio bearer specified in the TRANSPORT CHANNEL RECONFIGURATION message in step 1.

8.2.4.~~28~~20 Transport Channel Reconfiguration from CELL_DCH to CELL_PCH: Success

8.2.4.~~28~~20.1 Definition

8.2.4.~~28~~20.2 Conformance requirement

The UE shall transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using and transits from CELL_DCH to CELL_PCH when receives a TRANSPORT CHANNEL RECONFIGURATION message. And then, the UE shall reconfigure a radio bearer according to the TRANSPORT CHANNEL RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.4.~~28~~20.3 Test purpose

To confirm that the UE transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message before entering CELL_PCH state after it received a TRANSPORT CHANNEL RECONFIGURATION message and reconfigured its radio bearers. The UE is in CELL_PCH state of the same cell.

8.2.4.~~28~~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 TRANSPORT CHANNEL RECONFIGURATION message. The UE transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to the UE 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.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	TRANSPORT CHANNEL RECONFIGURATION	
2		→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE sends this message before start state transition.
3				Reconfiguration of Transport 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

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

Use the same message sub-type titled “Packet to CELL_FACH from CELL_DCH in PS“ in Annex A with following exceptions:

Information Element	Value/remark
~~DRX indicator~~RRC State Indicator	~~DRX with CELL updating~~CELL_PCH

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 Paging originator	UTRAN originator
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

8.2.4.~~28~~20.5 Test requirement

After step 1 the UE transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to the UE on uplink DCCH using AM RLC.

After step 3 the UE shall transit from CELL_DCH to CELL_PCH.

8.2.4.~~29~~21 Transport Channel Reconfiguration from CELL_DCH to URA_PCH: Success

8.2.4.~~29~~21.1 Definition

8.2.4.~~29~~21.2 Conformance requirement

The UE shall transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using and transits from CELL_DCH to URA_PCH when receives a TRANSPORT CHANNEL RECONFIGURATION message. And then, the UE shall reconfigure radio bearers according to the TRANSPORT CHANNEL RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.4.~~29~~21.3 Test purpose

To confirm that the UE transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message before entering URA_PCH state after it received a TRANSPORT CHANNEL RECONFIGURATION message and reconfigured its radio bearers. The UE is in URA_PCH state of the same cell.

8.2.4.~~29~~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 the CELL_DCH state. The SS transmits a TRANSPORT CHANNEL RECONFIGURATION message. The UE transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to the UE 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.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	TRANSPORT CHANNEL RECONFIGURATION	
2		→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE sends this message before start state transition.
3				Reconfiguration of Transport 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

TRANSPORT CHANNEL RECONFIGURATION (Step 1)

Use the same message sub-type titled “Packet to CELL_FACH from CELL_DCH in PS“ in Annex A with following exceptions:

Information Element	Value/remark
~~DRX indicator~~RRC State Indicator	~~DRX with URA updating~~URA_PCH

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 Paging originator	UTRAN originator
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

8.2.4.~~29~~21.5 Test requirement

After step 1 the UE transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to the UE on uplink DCCH using AM RLC.

After step 3 the UE shall transit from CELL_DCH to URA_PCH.

8.2.4.~~30~~22 Void~~Transport Channel Reconfiguration from CELL_FACH to CELL_PCH: Success~~

~~8.2.4.30.1 Definition~~

~~8.2.4.30.2 Conformance requirement~~

~~The UE shall transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using and transits from CELL_FACH to CELL_PCH when receives a TRANSPORT CHANNEL RECONFIGURATION message. And~~

then, the UE shall reconfigure radio bearers according to the TRANSPORT CHANNEL RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.4.30.3 Test purpose

To confirm that the UE transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message before entering CELL_PCH state after it received a TRANSPORT CHANNEL RECONFIGURATION message and reconfigured its radio bearers. The UE is in CELL_PCH state of the same cell.

8.2.4.30.4 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 TRANSPORT CHANNEL RECONFIGURATION message. The UE transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to the UE 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		←	TRANSPORT CHANNEL RECONFIGURATION	
2		→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE sends this message before start state transition.
3				Reconfiguration of Transport 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

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
DRX indicator	DRX with CELL updating

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 Paging originator - U-RNTI - SRNC Identity - S-RNTI	 UTRAN originator Previously assigned SRNC identity Previously assigned S-RNTI

8.2.4.30.5 Test requirement

After step 1 the UE transmit TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to the UE on uplink DCCH using AM RLC.

After step 3 the UE shall transit from CELL_FACH to CELL_PCH.

8.2.4.3123 Transport Channel Reconfiguration from CELL_FACH to URA_PCH: Success

8.2.4.31.1 Definition

8.2.4.31.2 Conformance requirement

The UE shall transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message using and transits from CELL_FACH to URA_PCH when receives a TRANSPORT CHANNEL RECONFIGURATION message. And then, the UE shall reconfigure radio bearers according to the TRANSPORT CHANNEL RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.4.31.3 Test purpose

To confirm that the UE transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message before entering URA_PCH state after it received a TRANSPORT CHANNEL RECONFIGURATION message and reconfigured its radio bearers. The UE is in URA_PCH state.

8.2.4.31.4 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 TRANSPORT CHANNEL RECONFIGURATION message. The UE transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to the UE 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		←	TRANSPORT CHANNEL RECONFIGURATION	
2		→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	The UE sends this message before start state transition.
3				Reconfiguration of Transport 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

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
DRX indicator	DRX with URA updating

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 Paging originator	UTRAN originator
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

8.2.4.31.5 Test requirement

After step 1 the UE transmit TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to the UE on uplink DCCH using AM RLC.

After step 3 the UE shall transit from CELL_FACH to URA_PCH. Void

8.2.5 Transport format combination control

8.2.5.1 Transport format combination control in CELL_DCH: restriction

8.2.5.1.1 Definition

8.2.5.1.2 Conformance requirement

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

Reference

3GPP TS 25.331 clause 8.2.5

8.2.5.1.3 Test purpose

To confirm that the UE do not transmit data on the DTCH in the uplink direction, following the reception of TRANSPORT FORMAT COMBINATION CONTROL message sent from the SS, which is set to the value ~~"zero"~~ in IE "~~Minimum allowed~~ Allowed Transport format combination index".

8.2.5.1.4 Method of test

Initial Condition

System Simulator: 1cell

UE: DCCH+DTCH_DCH (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108.~~ The exact procedure to apply~~ dependings on the CN domain(s) supported by the UE.

Test Procedure

The UE establishes a radio access bearer on the DCH for a communication. The SS transmits a TRANSPORT FORMAT COMBINATION CONTROL message, which indicates that only TFC_0 is allowed on the uplink for DCH transport channel. The UE shall reconfigure the TFCS, stop any transmission on DTCH logical channel and then continues the communication on DCCH only.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE s in CELL_DCH state with a DTCH logical channel allocated for communication between UE and SS
2	←		TRANSPORT FORMAT COMBINATION CONTROL	The UE shall use the TFC Subset as defined in value IE " Allowed ~~Set to "zero" in IE "Minimum allowed~~ Transport format combination index".
3				The UE shall not transmit any data on the DTCH.

Specific Message Contents

TRANSPORT FORMAT COMBINATION CONTROL

Information Element	Value/remark
TrCH information elements ~~Minimum a~~Allowed Transport format combination ~~index~~list	~~Set to "zero"~~
- Allowed transport format combination - Allowed transport format combination	0 and 3(If initial state is "state 6-9") 0 and 5(If initial state is "state 6-10")

8.2.5.1.5 Test requirement

After step 2 the UE shall stop transmitting data on the DTCH in the uplink.

8.2.5.2 Transport format combination control in CELL_DCH: release a restriction

8.2.5.2.1 Definition

8.2.5.2.2 Conformance requirement

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

Reference

3GPP TS 25.331 clause 8.2.5

8.2.5.2.3 Test purpose

To confirm that the UE resume transmission of data on the DTCH on the uplink, following the reception of TRANSPORT FORMAT COMBINATION CONTROL message which include ~~is set to "one" as the prior used transport format combination number in~~ IE "Minimum allowed ~~T~~transport- format combination ~~index~~set".

8.2.5.2.4 Method of test

Initial Condition

System Simulator: 1cell

UE: DCCH+DTCH_DCH (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108~~. The exact procedure to apply~~ dependings on the CN domain(s) supported by the UE.

Test Procedure

The UE is in CELL_DCH state with DTCH allocated but fully restricted. The UE cannot transmit the data on the DTCH, as a result of the restriction on the transport format combination. Next, the SS transmits a TRANSPORT FORMAT COMBINATION CONTROL message which ~~is set to "one" in IE~~include "Minimum allowed ~~Transport~~ transport format combination ~~index~~set"

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				No data transmission on the DTCH with a restriction in the uplink direction, following the execution of test 8.~~1.~~2.5.1.
2	←		TRANSPORT FORMAT COMBINATION CONTROL	Use the TFCS according to ~~Set to "one"~~ IE "Minimum allowed Transport format combination index".
3				The UE begins to transmit the data on the DTCH.

Specific Message Contents

TRANSPORT FORMAT COMBINATION CONTROL

Information Element	Value/remark
TrCH information elements -Minimum allowed t~~T~~ransport format combination ~~index~~set	5(If initial state is "state 6-9")~~Set to "one"~~
-Minimum allowed transport format combination set	6(If initial state is "state 6-10")

8.2.5.2.5 Test requirement

After step 2 the UE shall begin to transmit the data on the DTCH in the uplink.

8.2.5.3 Transport format combination control in CELL_DCH: Failure (Incompatible simultaneous reconfiguration)

8.2.5.3.1 Definition

8.2.5.3.2 Conformance requirement

The UE shall keep its old configuration when the UE receives another TRANSPORT FORMAT COMBINATION CONTROL message before the UE reconfigures the transport channel completely according to a similar message received earlier. The UE shall transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the DCCH using AM RLC indicating “incompatible simultaneous reconfiguration” in IE “failure cause”.

Reference

3GPP TS 25.331 clause 8.2.5

8.2.5.3.3 Test purpose

To confirm that after the UE receives TRANSPORT FORMAT COMBINATION CONTROL message, it transmits TRANSPORT FORMAT COMBINATION CONTROL FAILURE message and keeps the TFC subset as before the TRANSPORT FORMAT COMBINATION CONTROL message is received.

8.2.5.3.4 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 establishes a radio access bearer on the DCH for to be used for user-data exchange. SS sends a TRANSPORT CHANNEL RECONFIGURATION message on the downlink DCCH, to request that the channel coding scheme for a DCH be changed. After this message has been acknowledged by the UE RLC-AM entity, the SS transmits a TRANSPORT FORMAT COMBINATION CONTROL message, which includes a full restriction of the TFCS used in the uplink. The UE shall detect a failure to reconfigure the TFCS, then it transmits TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the uplink DCCH. After the activation time specified in the TRANSPORT CHANNEL RECONFIGURATION message has elapsed, the UE shall send TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH. SS verifies that reconfiguration is completed by checking that the user-data exchange is resumed on DTCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is in CELL_DCH connected state, with a DTCH logical channel for user-data communication
2	←		TRANSPORT CHANNEL RECONFIGURATION	Requesting for a change in semi-static transport format for DCH carrying the DTCH. The dynamic part remains unchanged.
3	←		TRANSPORT FORMAT COMBINATION CONTROL	Requesting for a full restriction on TFCS for the DCH carrying DTCH.
4	→		TRANSPORT FORMAT COMBINATION CONTROL FAILURE	The UE shall keep the TFC subset as before the TRANSPORT FORMAT COMBINATION CONTROL message was received
5				The UE does not change the configuration of TFC and the UE continues reconfigure the affected transport channel.
6			TRANSPORT CHANNEL RECONFIGURATION COMPLETE	UE shall resume exchange of data over the DTCH logical channel.

Specific Message Contents

TRANSPORT CHANNEL RECONFIGURATION

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" found in Annex A with the following exceptions:

Information Element	Value/remark
TrCH Information Elements - Uplink transport channels - Added or reconfigured TrCH information list - Transport channel identity - Semi-Static Transport Format Information - Type of channel coding	 2 Select a different coding scheme from default message content

TRANSPORT FORMAT COMBINATION CONTROL

Information Element	Value/remark
DPCH TFCS in Uplink - Subset Representation - Allowed TFIs	Restricted TrCH information Not Present (All TFCs are restricted)

TRANSPORT FORMAT COMBINATION CONTROL FAILURE

Information Element	Value/remark
Message Type	"TRNSPORT FORMAT COMBINATION CNTROL FAILURE"
RRC transaction identifier	0
Failure cause	Incompatible simultaneous reconfiguration
Other information element	Not checked

8.2.5.3.5 Test requirement

After step 3 the UE continue the transport channel reconfiguration as if no TRANSPORT FORMAT COMBINATION CONTROL message was received. Then it shall transmit a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message on the DCCH using AM RLC, stating the reason "Incompatible simultaneous reconfiguration" in IE "Failure cause".

After step 6 the UE shall resume communication with SS on DTCH using the requested channel coding scheme on the transport blocks.

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 old configuration when it receives a TRANSPORT FORMAT COMBINATION CONTROL message which using a ~~spare~~ undefined value in the mandatory IE "Minimum allowed Transport format combination index". It shall then transmits a TRANSPORT FORMAT COMBINATION CONTROL FAILURE message, indicating "protocol error" in IE "failure cause" and "Information element value not comprehended" in IE "Protocol error cause". The UE shall keep existing configuration before reception of a TRANSPORT FORMAT COMBINATION CONTROL message when the TRANSPORT CHANNEL RECONFIGURATION message include some IEs set to invalid value, and then the UE shall transmit 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 TRANSPORT FORMAT COMBINATION CONTROL FAILURE message and keep 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 invalid value.

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~~.~~. ~~The exact procedure to apply~~ dependings on the CN domain(s) supported by the UE.

Test Procedure

The UE establishes a radio access bearer on the DCH for a communication. The SS transmits a TRANSPORT FORMAT COMBINATION CONTROL message, which uses a ~~spare~~ undefined value in the mandatory IE "Minimum allowed Transport format combination index". The UE shall then transmit TRANSPORT FORMAT COMBINATION CONTROL FAILURE message and continues the communication using the radio access bearer. The UE keeps initial configuration and SS transmits TRANSPORT FORMAT COMBINATION CONTROL message including some IEs set

to invalid value. The UE transmit 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				RRC connected state on the DTCH for a communication
2	←		TRANSPORT FORMAT COMBINATION CONTROL	Contains an error in a mandatory IE.
3	→		TRANSPORT FORMAT COMBINATION CONTROL FAILURE	The UE shall not change the configuration
4	←		TRANSPORT FORMAT COMBINATION CONTROL	This message includes IE set to invalid value
5				The UE does not change the configuration
6	→		TRANSPORT FORMAT COMBINATION CONTROL FAILURE	The IE "failure cause" shall be set to "invalid configuration

Specific Message Contents

TRANSPORT FORMAT COMBINATION CONTROL (Step 2)

Information Element	Value/remark
DPCH TFCS in uplink - Minimum allowed Transport format combination index	Set to the value "MaxTFCValue"

TRANSPORT FORMAT COMBINATION CONTROL FAILURE (Step 3)

Information Element	Value/remark
Message Type	"TRNSPORT FORMAT COMBINATION CNTROL FAILURE"
Failure cause	"protocol error"
Protocol error information	
-Protocol error case	Information element value not comprehended
Other information element	Not checked

TRANSPORT FORMAT COMBINATION CONTROL(Step 4)

Information Element	Value/remark
TrCH information elements - Allowed Transport format combination list - Allowed transport format combination	 10

TRANSPORT FORMAT COMBINATION CONTROL FAILURE (Step 6)

Information Element	Value/remark
Message Type	
Failure cause	Invalid configuration
Other information element	Not checked

8.2.5.4.5 Test requirement

After step 3 the UE shall keep its configuration before the TRANSPORT FORMAT COMBINATION CONTROL message was received and 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 "information element not comprehended" in IE "protocol error information". The UE shall continue communicate with SS using the radio access bearer.

After step 4 the UE shall keep its old configuration.

After step 5 the UE shall transmit 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 (Hard handover to another frequency): 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 received, which is used for hard handover purposes. It shall be able to communicate with the UTRAN on the new frequency subsequently.

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 resume normal transmission and reception operations.

8.2.6.1.4 Method of test

Initial Condition

System Simulator: 2 cells - cell 1 and cell 6 are active. The $Q_{rxlevmin}$ and $Q_{rxqualmin}$.values in SYSTEM INFORMATION BLOCK TYPE 3 and 4 messages of cell 6 is changed to –90dBm and –20dB respectively

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE is in the CELL_DCH state in cell 1. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE, which includes a new physical channel parameter specified in the "Frequency Info" IE. The UE shall reconfigure itself and tune to the new physical channel and transmits a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH of cell 6 using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	Including new frequency information.
2				UE shall ~~suspend~~ stop uplink activities to cell 1 and begin to reconfigure the physical channel parameters.
3		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

The contents of PHYSICAL 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
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	Same downlink UARFCN as used for cell 6
- Primary CPICH info	
- Primary Scrambling Code	350
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing Indicator	Initialise

8.2.6.1.5 Test requirement

After step 2 the UE shall send PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH of cell 6, and then continue to communicate with SS on the new physical channel.

8.2.6.2 Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH (Hard handover to another frequency): Failure (Unsupported configuration)

8.2.6.2.1 Definition

8.2.6.2.2 Conformance requirement

The UE shall keep its old 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: 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 to the UE which includes unsupported configuration parameters as the frequency cannot be supported 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 an unsupported configuration as the frequency cannot be supported by the UE
2	→		PHYISICAL CHANNEL RECONFIGURATION FAILURE	The UE shall not change the physical channel and continue to communicate using the old configuration.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION

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 uplink(Nu) - UARFCN downlink(Nd)	 63984 Not Present

PHYSICAL CHANNEL RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type Failure cause Other information element	 Configuration unsupported Not checked

8.2.6.2.5 Test requirement

After step 1 the UE shall keep its old configuration and 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 (Hard handover to another frequency): 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 by 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 by timer T312 expiry.

8.2.6.3.4 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 to the UE which includes new frequency parameters. However, the SS does not reconfigure the new physical channel. The UE is expected to encounter a failure to reconfigure the new physical channel and after T312 timer expiry 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 frequency information
2				The SS does not reconfigure the physical channel so that the UE fails to reconfigure to the new physical channel.
3	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	After T312 expiry, the UE shall revert to the old configuration and transmits this message.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION

Use the message sub-type titled “Packet to CELL_DCH from CELL_DCH in PS” in Annex A.

PHYSICAL CHANNEL RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type	
Failure cause	Physical channel failure
Other information element	Not checked

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 (Hard handover to another frequency): 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~~n RRC connection re-establishment~~ 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 cell update procedure, the UE transmits PHYSICAL 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 8.2.6

8.2.6.4.3 Test purpose

To confirm that the UE transmits PHYSICAL CHANNEL RECONFIGURATION FAILURE message after UE completes ~~initiates an~~ a cell update ~~RRC connection re-establishment~~ procedure when the UE cannot reconfigure the new physical channel for the failure of L1 configuration and for the failure of the reversion to the old configuration.

8.2.6.4.4 Method of test

Initial Condition

System Simulator: 2 cells- Cell 1 is active, Cell 2 is inactive

UE: PS-DCCH+DTCH_DCH (state 6-10) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE is in the CELL_DCH state in cell 1. The SS begins to broadcast the BCCH in cell 2 and then transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE, which includes new uplink and downlink frequency parameters and does not reconfigure L1. The UE is expected to fail to reconfigure the new physical channel and tries to revert to the old configuration ~~after T312 expiry~~. The SS then deletes the old physical channel so that the UE would perform cell reselection and finds cell 2. It shall then transmit a~~n~~ 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 UTRAN MOBILITY INFORMATION CONFIRM 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".

~~RRC CONNECTION RE-ESTABLISHMENT REQUEST message which includes the IE "U-RNTI" on the uplink CCCH. The SS transmits an RRC CONNECTION RE-ESTABLISHMENT message which includes a new TFCS according to the new transport channel. After the UE receives an RRC CONNECTION RE-ESTABLISHMENT message, it reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	BCCH	The SS transmits the BCCH in cell 2.
2		←	PHYSICAL CHANNEL RECONFIGURATION	The message includes new frequency information
3				SS does not reconfigure the physical channel to reflect the changes in step 2, 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.
4		→	CELL UPDATE~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~	The UE finds a new cell.2 and enters CELL_FACH state. This message includes the value "radio link failure" set in IE "Cell update cause".~~then transmits this message which includes the IE "U-RNTI".~~
5		←	CELL UPDATE CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT~~	This message includes IE "new U-RNTI" and IE "new C-RNTI"".~~This message indicates a new TFCS according to the new transport channel.~~
6		→	UTRAN MOBILITY INFORMATION CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT COMPLETE~~	
7		→	PHYSICAL CHANNEL RECONGURATION FAILURE	The IE "failure cause" shall be set to "physical channel failure"

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

Use the message sub-type titled "Packet to CELL_DCH from CELL_DCH 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 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	"radio link failure"

CELL UPDATE CONFIRM (Step 5)

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 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

PHYSICAL CHANNEL RECONGURATION FAILURE (Step 7)

Information Element	Value/remark
Message Type	"PHYSICAL CHANNEL RECONGURATION FAILURE"
Failure cause	"physical channel failure"
Other information element	Not checked

8.2.6.4.5 Test requirement

After step 3 the UE shall find the availability of cell 2, enter CELL_FACH state, and transmits ~~RRC CONNECTION RE-ESTABLISHMENT~~CELL UPDATE message using RLC-TM mode on the uplink ~~DCCH~~CCCH.

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

After step 7 the UE shall transmit PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to " physical channel failure".~~the UE shall be able to successfully re-establish an RRC connection in cell 2.~~

8.2.6.5 Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH (Hard handover to another frequency): 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 whilst reconfiguring due to a radio bearer message other than PHYSICAL CHANNEL RECONFIGURATION SETUP, it shall keep its configuration as if the PHYSICAL CHANNEL RECONFIGURATION SETUP message had not been received. ~~If the UE is reconfiguring itself after receiving a radio bearer message other than PHYSICAL CHANNEL RECONFIGURATION message, and when the UE subsequently receive a PHYSICAL CHANNEL RECONFIGURATION message and the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "Incompatible simultaneous reconfiguration" in IE "failure cause".~~

Reference

3GPP TS 25.331 clause 8.2.6

8.2.6.5.3 Test purpose

To confirm that if the UE receives a PHYSICAL CHANNEL RECONFIGURATION message whilst reconfiguring 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 according to the previously received message.

~~To confirm that the UE keeps its current configuration when it receives a PHYSICAL CHANNEL RECONFIGURATION message before the completion of an existing configuration .~~

8.2.6.5.4 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 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 receives the PHYSICAL CHANNEL RECONFIGURATION FAILURE message, the UE reconfigures the new physical channel parameters and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC.

~~The UE is in the CELL_DCH state. When the SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE before it reconfigures the physical channel, the UE keeps the old configuration and transmits an PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC. This message shall indicate "incompatible simultaneous reconfiguration" in IE "failure cause".~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2		←	PHYSICAL CHANNEL RECONFIGURATION	Sent before the "Activation Time Info" 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 PHYSICAL CHANNEL RECONFIGURATION FAILURE 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 in step 1, use the message sub-type indicated as "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A.

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

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
Activation Time Info	Current CFN-[current CFN mod 8 + 8]

PHYSICAL CHANNEL RECONFIGURATION FAILURE (step 3)

Information Element	Value/remark
Message Type	
Failure cause	Incompatible simultaneous reconfiguration
Other information element	Not checked

8.2.6.5.5 Test requirement

After step 1, SS transmits a PHYSICAL CHANNEL RECONFIGURATION message before the expiry of the activation time specified in the message of step 1.

After step 2 the UE shall keep its configuration as if the UE 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 step 4 the UE communicates with the SS on the DCCH and DTCH using the new physical channel parameters reconfigured as a result of the RADIO BEARER RECONFIGURATION message.~~After step 2 the UE shall keep its old configuration and transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, which shall be set to "incompatible simultaneous reconfiguration" in IE "failure cause".~~

8.2.6.6 Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH (Hard handover to another frequency): 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 a PHYSICAL CHANNEL RECONFIGURATION message, which includes ~~the~~ ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~". It shall then transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message which contains the value "protocol error" in IE "failure cause" and also "Information element value not comprehended" in IE "Protocol error cause". The UE shall keep existing configuration before reception of a TRANSPORT CHANNEL RECONFIGURATION message when the TRANSPORT CHANNEL RECONFIGURATION message include some IEs set to invalid value, and then the UE shall transmit TRANSPORT 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 a PHYSICAL CHANNEL RECONFIGURATION message which uses a ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~".

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 invalid value.

8.2.6.6.4 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 to the UE, with a ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~". 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 "Information element value not comprehended" in IE "Protocol error cause". The UE keeps initial configuration and SS transmits PHYSICAL CHANNEL RECONFIGURATION message including some IEs set to invalid value. The UE transmit 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	This message contains an error in one of the mandatory IEs.
2	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	The UE does not change the configuration.
4	←		PHYSICAL CHANNEL RECONFIGURATION	This message includes IE set to invalid value
5				The UE does not change the configuration
6	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "invalid configuration

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

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
UTRAN DRX cycle length coefficient~~DRX indicator~~	~~spare~~ Undefined value

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 2)

Information Element	Value/remark
Message Type	
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	Information element value not comprehended
Other information element	Not checked

PHYSICAL CHANNEL RECONFIGURATION (Step 3)

The contents of PHYSICAL CHANNEL RECONFIGURATION message in this test case is identical to the message sub-type title "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	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
- DL channelisation code	
- Secondary scrambling code	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
- Scheduling information	

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 5)

Information Element	Value/remark
Message Type	
Failure cause	Invalid configuration
Other information element	Not checked

8.2.6.6.5 Test requirement

After step 1 the UE shall keep its old configuration and 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 “Information element value not comprehended” in IE “Protocol error cause”.

After step 3 the UE shall keep its old configuration.

After step 4 the UE shall transmit 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 when asked to perform a transition from CELL_DCH to CELL_FACH.

Reference

3GPP TS 25.331 clause 8.2.6

8.2.6.7.3 Test purpose

To confirm that the UE reconfigures a new physical channel according to the PHYSICAL CHANNEL RECONFIGURATION message received from the SS.

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 the CELL_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE. The UE shall then reconfigure the new 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 RACH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	
2				Reconfiguration of physical channel
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.

8.2.6.7.5 Test requirement

After step 3 the UE shall transit from CELL_DCH to CELL_FACH and continue to communicate with SS on the common physical channel.

8.2.6.8 Physical channel reconfiguration for transition from CELL_DCH to CELL_FACH: Failure (Cell re-selection~~Physical channel failure~~)

8.2.6.8.1 Definition

8.2.6.8.2 Conformance requirement

The UE shall initiate the cell ~~reselection~~ update procedure when the UE cannot use the assigned physical channel according to a PHYSICAL CHANNEL RECONFIGURATION message, during the transition from CELL_DCH to CELL_FACH. After the UE completes cell update procedure, the UE transmits PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to “cell reselection” in IE “failure cause”.

Reference

3GPP TS 25.331 clause 8.2.6

8.2.6.8.3 Test purpose

To confirm that the UE transmits PHYSICAL CHANNEL RECONFIGURATION FAILURE message after the UE ~~perform~~ completes a cell reselection and cell update procedure when the it fail to access the assigned physical channel, according to a PHYSICAL CHANNEL RECONFIGURATION message, during the transition from CELL_DCH to CELL_FACH.

8.2.6.8.4 Method of test

Initial Condition

System Simulator: 2 cells Cell 1 is active, Cell 2 is inactive

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 in cell 1. The SS begins to broadcast the BCCH in cell 2 and then transmits a PHYSICAL CHANNEL RECONFIGURATION message, resulting in the UE to attempt to transit from CELL_DCH to CELL_FACH. The UE is expected to fail to access the assigned physical channel as the SS ceases downlink transmission in cell 1. After the UE successfully camp onto cell 2, it shall initiate the cell update procedure in cell 2. The UE transmits CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmits UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and transmits PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value " cell reselection" to IE "failure cause". ~~The procedure completes when the SS confirms UE's cell update request.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		BCCH	The SS starts to broadcast the BCCH in cell 2.
2	←		PHYSICAL CHANNEL RECONFIGURATION	The message assigns common resources so that the UE is expected to execute a transition from CELL_DCH to CELL_FACH
3				The UE shall detect a failure to use the assigned common physical channel and try to perform a cell reselection.
4	→		CELL UPDATE	The UE discover the presence of cell 2 and triggers a cell update procedure. The value "cell reselection" shall be set in IE "Cell update cause".
5	←		CELL UPDATE CONFIRM	This message include IE "new U-RNTI" and IE "new C-RNTI". ~~SS sends this message so that the UE moves to CELL_PCH state.~~
6	→		UTRAN MOBILITY INFORMATION CONFIRM	
7	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "cell reselection"

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION

Use the message sub-type titled “Packet to CELL_FACH from CELL_DCH 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 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	“radio link failure”

CELL UPDATE CONFIRM (Step 5)

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 7
New U-RNTI	
- SRNC Identity	‘0000 0000 0000 0001’
- S-RNTI	Different from previous S-RNTI
New C-RNTI	Different from previous C-RNTI

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 7)

Information Element	Value/remark
Message Type	“RADIO BEARER RECONFIGURATION FAILURE”
Failure cause	“cell reselection”
Other information element	Not checked

8.2.6.8.5 Test requirement

After step 3 the UE shall discover the presence of cell 2, enter CELL_FACH state, and initiate a cell update procedure in that cell.

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

After step 6 UE shall transmit PHYSICAL CHANNEL FAILURE message on the DCCH using AM RLC, setting IE “failure cause” to ”cell reselection”.

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 triggers a transition from CELL_FACH to CELL_DCH.

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 received from the UTRAN, in the case of an assignment of dedicated physical resource from the common physical channels used previously by the UE.

8.2.6.9.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is in the CELL_FACH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE to start a transition from CELL_FACH to CELL_DCH. The UE shall reconfigure the new 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	
2				The UE shall reconfigure the physical channel in order to start using the dedicated channels allocated.
3	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION

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 3 the UE shall transit from CELL_FACH to CELL_DCH and continue to communicate with SS on the 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 the it receives a PHYSICAL CHANNEL RECONFIGURATION message, which specifies unsupported configuration parameters for 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_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 to the UE, which includes unsupported frequencies for the UE. The PHYSICAL CHANNEL RECONFIGURATION is structured in such a manner as to trigger a transition from CELL_FACH to CELL_DCH in the UE. The UE shall responds with a PHYSICAL CHANNEL RECONFIGURATION FAILURE message sent 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	Includes unsupported frequencies for the UE
2		→	PHYISICAL CHANNEL RECONFIGURATION FAILURE	The UE shall not change the physical channel configuration, this message shall be sent using the original allocated physical resource.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION

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
Frequency info - UARFCN uplink(Nu) - UARFCN downlink(Nd)	 63984 Not Present

PHYSICAL CHANNEL RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type Failure cause Other information element	 Configuration unsupported Not checked

8.2.6.10.5 Test requirement

After step 1 the UE shall keep its old configuration and 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 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 by timer T312 expiry. 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 by the T312 expiry.

8.2.6.11.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: 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 to the UE, requesting it to transit from CELL_FACH to CELL_DCH due to a switch in physical resource reallocation. However, it does not reconfigure the new physical channel accordingly but continue to use the old configuration. Consequently, the UE shall fail to reconfigure the new physical channel, and after T312 expiry 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 reports "physical channel failure" in IE "failure cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PHYSICAL CHANNEL RECONFIGURATION	
2				The SS does not reconfigure the physical channel, hence the UE shall detect a failure to reconfigure to the new physical channel.
3	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	After T312 expiry the UE reverts to the old configuration and transmits this message.

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION

Use the message sub-type titled “Packet to CELL_DCH from CELL_FACH in PS” in Annex A.

PHYSICAL CHANNEL RECONFIGURATION FAILURE

Information Element	Value/remark
Message Type	
Failure cause	Physical channel failure
Other information element	Not checked

8.2.6.11.5 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, 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)

8.2.6.12.1 Definition

8.2.6.12.2 Conformance requirement

The UE shall perform a~~n RRC connection re-establishment~~ cell update procedure when the UE fails to revert to the old configuration after the detection of physical channel failure in the physical channel reconfiguration procedure. After the UE completes cell update procedure, the UE transmit PHYSICAL 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 8.2.6

8.2.6.12.3 Test purpose

To confirm that the UE initiates a~~n RRC connection re-establishment~~ cell update procedure after it fails to reconfigure the new physical channel and experiences a subsequent failure to revert to the old configuration.

To confirm that UE transmits 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 is active, Cell 2 is inactive

UE: PS-DCCH+DTCH_FACH (state 6-11) as specified in clause 7.4 of TS 34.108 in cell 1

Test Procedure

The UE is in the CELL_FACH state in cell 1. The SS begins to broadcast the BCCH in cell 2 and transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE, but it does not reconfigure L1 accordingly. This is expected to cause the UE to fail to reconfigure to the new physical channel. As a result, the UE shall try to revert to the old configuration~~ after timer T312 expiry~~. However, the SS deletes the old physical channel~~ before timer T312 has~~

~~expired~~. Therefore, UE shall reselect to cell 2 and sends ~~an~~ 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 UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and subsequently transmits PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to " physical channel failure".

~~RRC CONNECTION RE-ESTABLISHMENT REQUEST message, which includes its previously assigned U-RNTI on the uplink CCCH. The SS transmits an RRC CONNECTION RE-ESTABLISHMENT message, which includes a new TFCS according to the new transport channel used. After the UE receives this message, it reconfigures the new radio connection and transmits an RRC CONNECTION RE-ESTABLISHMENT COMPLETE message on the uplink DCCH using AM RLC~~.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	BCCH	The SS begins to transmit the BCCH in a cell 2.
2		←	PHYSICAL CHANNEL RECONFIGURATION	
3				The SS does not reconfigure the physical channel and deletes the old configuration. As a result, UE should encounter a failure to reconfigure the new physical channel, then attempt to revert to the old configuration.
4		→	CELL UPDATE~~RRC CONNECTION RE-ESTABLISHMENT REQUEST~~	The UE shall find cell 2 and be in CELL_FACH state. This message includes the value "radio link failure" set in IE "Cell update cause".~~then transmit this message with its U-RNTI included.~~
5		←	CELL UPDATE CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT~~	This message includes IE "new U-RNTI" and IE "new C-RNTI"".~~This message specifies a new TFCS according to the new transport channel.~~
6		→	UTRAN MOBILITY INFORMATION CONFIRM~~RRC CONNECTION RE-ESTABLISHMENT COMPLETE~~	UE shall send this message in the cell 2.
7			PHYSICAL CHANNEL RECONGURATION FAILURE	The IE "failure cause" shall be set to "physical channel failure"

Specific Message Contents

PHYSICAL 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 4)

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	Assigned previously in cell 1
- S-RNTI	Assigned previously in cell 1
Cell Update Cause	"radio link failure"

CELL UPDATE CONFIRM (Step 5)

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 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

PHYSICAL CHANNEL RECONGURATION FAILURE (Step 7)

Information Element	Value/remark
Message Type	"PHYSICAL CHANNEL RECONGURATION FAILURE"
Failure cause	"physical channel failure"
Other information element	Not checked

8.2.6.12.5 Test requirement

After step 3 the UE shall detect the presence of cell 2, camp onto it, and transmit a CELL UPDATE message using RLC-TM mode on the uplink CCCH.~~RRC CONNECTION RE-ESTABLISHMENT REQUEST message.~~

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

After step 7 the UE shall transmit PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the IE "failure cause" to "physical channel failure".~~the UE shall successfully re-establish the RRC connection in cell 2.~~

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 whilst reconfiguring 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. ~~If the UE is reconfiguring itself after receiving a radio bearer message other than PHYSICAL CHANNEL RECONFIGURATION message, and when the UE subsequently receive a PHYSICAL CHANNEL RECONFIGURATION message and the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which is set to "Incompatible simultaneous reconfiguration" in IE "failure cause".~~

Reference

3GPP TS 25.331 clause 8.2.6

8.2.6.13.3 Test purpose

To confirm that if the UE receives a PHYSICAL CHANNEL RECONFIGURATION message whilst reconfiguring 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 according to the previously received message. ~~To confirm that the UE keeps its old configuration, if receives a PHYSICAL CHANNEL RECONFIGURATION message before it manages to complete configuring according to an earlier message.~~

8.2.6.13.4 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 the 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 receives the PHYSICAL CHANNEL RECONFIGURATION FAILURE message, the UE reconfigures the new physical channel parameters and transmits a RADIO BEARER RECONFIGURATION COMPLETE message on DCCH using AM RLC.~~The UE is in the CELL_FACH state. The SS transmits a message to the UE. Before the UE completes configuration due to the latter message, SS sends a PHYSICAL CHANNEL RECONFIGURATION message. The UE shall ignore the new message, maintains the old configuration, and transmits a PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC indicating "incompatible simultaneous reconfiguration" in IE "failure cause".~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO BEARER RECONFIGURATION	
2		←	PHYSICAL CHANNEL RECONFIGURATION	Sent before the elapse of the frame number specified in IE "Activation time info" of the message dispatched in step 1.
3		→	PHYSICAL CHANNEL RECONFIGURATION FAILURE	The UE does not change the configuration due to the reception of 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)

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.

PHYSICAL CHANNEL RECONFIGURATION (Step 2)

For PHYSICAL CHANNEL RECONFIGURATION in step 2, 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	Current CFN-[current CFN mod 8 + 8]

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 3)

Information Element	Value/remark
Message Type	
Failure cause	Incompatible simultaneous reconfiguration
Other information element	Not checked

8.2.6.13.5 Test requirement

After step 1, SS transmits a PHYSICAL CHANNEL RECONFIGURATION message before the expiry of the activation time specified in the message of step 1.

After step 2 the UE shall keep its configuration as if the UE 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 step 4 the UE communicates with the SS on the DCCH and DTCH using the new physical channel parameters reconfigured as a result of the RADIO BEARER RECONFIGURATION message.

~~After step 2 the UE shall keep its old configuration and transmit an PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting the value "incompatible simultaneous reconfiguration" in IE "failure cause".~~

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 a PHYSICAL CHANNEL RECONFIGURATION message containing a ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~". It shall then transmit a PHYSICAL CHANNEL RECONFIGURATION FAILURE message, set "protocol error" in IE "failure cause" and also set "Information element value not comprehended" in IE "Protocol error cause". The UE shall keep existing configuration before reception of a TRANSPORT CHANNEL RECONFIGURATION message when the TRANSPORT CHANNEL RECONFIGURATION message include some IEs set to invalid value, and then the UE shall transmit TRANSPORT 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 uses a ~~spare~~ undefined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~".

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 invalid value.

8.2.6.14.4 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 the CELL_FACH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE which comprises a ~~spare~~ defined value in the mandatory IE "UTRAN DRX cycle length coefficient~~DRX indicator~~". 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 "Information element value not comprehended" in IE "Protocol error cause". The UE keeps initial configuration and SS transmits PHYSICAL CHANNEL RECONFIGURATION message including some IEs set to invalid value. The UE transmit 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	Contains a mandatory error due to illegal use of ~~spare~~ undefined value
2	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	The UE does not change the configuration.
3	←		PHYSICAL CHANNEL RECONFIGURATION	This message includes IE set to invalid value
4				The UE does not change the configuration
5	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	The IE "failure cause" shall be set to "invalid configuration

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION (Step 1)

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
UTRAN DRX cycle length coefficient~~DRX indicator~~	~~spare~~ Undefined value

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 2)

Information Element	Value/remark
Message Type	
Failure cause	
- Failure cause	Protocol error
- Protocol error information	
- Protocol error cause	Information element value not comprehended
Other information element	Not checked

PHYSICAL CHANNEL RECONFIGURATION (Step 3)

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
Uplink DPCH info	Not present

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 5)

Information Element	Value/remark
Message Type	
Failure cause	Invalid configuration
Other information element	Not checked

8.2.6.14.5 Test requirement

After step 1 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 "Information element value not comprehended" in IE "Protocol error cause".

After step 3 the UE shall keep its old configuration.

After step 4 the UE shall transmit 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 (Hard handover to another frequency): Success

8.2.6.15.1 Definition

8.2.6.15.2 Conformance requirement

The UE shall correctly reconfigure a physical channel according to a PHYSICAL CHANNEL RECONFIGURATION message when asked to perform a transition from CELL_FACH to CELL_FACH ~~in the 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 physical channel according to the PHYSICAL CHANNEL RECONFIGURATION message received from the SS.

8.2.6.15.4 Method of test

Initial Condition

System Simulator: ~~2~~ 1 cell~~s Cell 1 is active, Cell 2 is inactive~~

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 ~~starts to broadcast the BCCH in cell 2 and~~ transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE. The UE shall then reconfigure the new 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 RACH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
~~1~~		~~←~~	~~BCCH~~	~~The SS starts to broadcast the BCCH in cell 2.~~
~~2~~1		←	PHYSICAL CHANNEL RECONFIGURATION	
~~3~~2				Reconfiguration of physical channel
~~4~~3		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION

Use the message sub-type titled “Packet to CELL_FACH from CELL_FACH in PS” in Annex A.

8.2.6.15.5 Test requirement

After step 3 the UE shall ~~transit from~~be in CELL_FACH ~~to CELL_FACH in the another cell~~state and continue to communicate with SS on the common physical channel.

8.2.6.16 Physical channel reconfiguration for transition from CELL_FACH to CELL_FACH: Failure (Cell re-selection~~Physical channel failure~~)

8.2.6.16.1 Definition

8.2.6.16.2 Conformance requirement

The UE shall initiate the cell reselection procedure when the UE cannot use the assigned physical channel according to a PHYSICAL CHANNEL RECONFIGURATION message, during the transition from CELL_FACH to CELL_FACH in the another cell. After the UE completes cell update procedure, the UE transmits PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC which set IE “failure cause” to “cell reselection”.

Reference

3GPP TS 25.331 clause 8.2.6

8.2.6.16.3 Test purpose

To confirm that the UE transmits PHYSICAL CHANNEL RECONFIGURATION FAILURE message after the UE ~~perform~~ completes a cell reselection and cell update procedure when the it fail to access the assigned physical channel, according to a PHYSICAL CHANNEL RECONFIGURATION message, during the transition from CELL_FACH to CELL_FACH ~~in the another cell~~.

8.2.6.16.4 Method of test

Initial Condition

System Simulator: ~~3~~ 2 cells Cell 1 is active, Cell 2 is inactive~~, Cell 3 is inactive~~

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 in cell 1. The SS begins to broadcast the BCCH in cell 2 and then transmits a PHYSICAL CHANNEL RECONFIGURATION message, resulting in the UE to attempt to transit from CELL_FACH ~~in cell 1~~ to CELL_FACH ~~in cell 3~~. The UE is expected to fail to access the assigned physical channel as the SS ceases downlink transmission in cell 3. After the UE successfully camp onto cell 2, it shall initiate the cell update procedure in cell 2. The UE transmits CELL UPDATE message on uplink CCCH with IE "Cell update cause" set to "cell reselection". The SS shall transmit CELL UPDATE CONFIRM message on downlink CCCH after receiving CELL UPDATE message. The UE transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC and transmit PHYSICAL CHANNEL RECONFIGURATION FAILURE message on the DCCH using AM RLC, setting IE "failure cause" to " cell reselection". ~~The procedure completes when the SS confirms UE's cell update request.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	BCCH	The SS starts to broadcast the BCCH in cell 2.
2		←	PHYSICAL CHANNEL RECONFIGURATION	~~The message assigns common resources so that the UE is expected to execute a transition from CELL_FACH in cell 1 to CELL_FACH in cell 3~~
3				The UE shall detect a failure to use the assigned common physical channel and try to perform a cell reselection.
4		→	CELL UPDATE	The UE discover the presence of cell 2 and triggers a cell update procedure. The value "cell reselection" shall be set in IE "Cell update cause".
5		←	CELL UPDATE CONFIRM	This message include IE "new U-RNTI" and IE "new C-RNTI". ~~SS sends this message so that the UE moves to CELL_FACH state.~~
6		→	UTRAN MOBILITY INFORMATION CONFIRM	
7		→	PHYSICAL CHANNELRECONFIGURATION FAILURE	The IE "failure cause" shall be set to "cell reselection"

Specific Message Contents

PHYSICAL CHANNEL RECONFIGURATION

Use the message sub-type titled "Packet to CELL_FACH 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 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	"radio link failure"

CELL UPDATE CONFIRM (Step 5)

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 7
New U-RNTI	
- SRNC Identity	‘0000 0000 0000 0001’
- S-RNTI	Different from previous S-RNTI
New C-RNTI	Different from previous C-RNTI

PHYSICAL CHANNEL RECONFIGURATION FAILURE (Step 7)

Information Element	Value/remark
Message Type	“RADIO BEARER RECONFIGURATION FAILURE”
Failure cause	“cell reselection”
Other information element	Not checked

8.2.6.16.5 Test requirement

After step 3 the UE shall discover the presence of cell 2, enter CELL_FACH state, and initiate a cell update procedure in that cell.

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 PHYSICAL CHANNEL FAILURE message on the DCCH using AM RLC, setting IE “failure cause” to ”cell reselection”.

8.2.6.17 Physical channel reconfiguration for transition from CELL_DCH to CELL_DCH (Hard handover to another frequency): 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 PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.6

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: 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. When the SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE before the UE reconfigures the radio bearer, 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 PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		PHYSICAL CHANNEL RECONFIGURATION	
2	←		PHYSICAL CHANNEL RECONFIGURATION	SS send this message before the expiry of "activation time" specified in PHYSICAL CHANNEL RECONFIGURATION message of step 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

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
Activation Time Info	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256

8.2.6.17.5 Test requirement

After step 3 the UE shall communicate with the SS on the radio bearer specified in the PHYSICAL CHANNEL RECONFIGURATION message in step 1.

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 PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.2.6

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_FACH (state 6-11) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the CELL_FACH state. When the SS transmits a PHYSICAL CHANNEL RECONFIGURATION message to the UE before the UE reconfigures the radio bearer, 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 PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PHYSICAL CHANNEL RECONFIGURATION	
2		←	PHYSICAL CHANNEL RECONFIGURATION	SS send this message before the expiry of “activation time” specified in PHYSICAL CHANNEL RECONFIGURATION message of step 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

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
Activation Time Info	[256+Current CFN-[current CFN mod 8 + 8]]MOD 256

8.2.6.18.5 Test requirement

After step 3 the UE shall communicate with the SS on the radio bearer specified in the PHYSICAL CHANNEL RECONFIGURATION message in step 1.

8.2.6.~~27~~19 Physical Channel Reconfiguration from CELL_DCH to CELL_PCH: Success

8.2.6.~~27~~19.1 Definition

8.2.6.~~27~~19.2 Conformance requirement

The UE shall transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using and transits from CELL_DCH to CELL_PCH when receives a PHYSICAL CHANNEL RECONFIGURATION message. And then, the UE shall reconfigure radio bearers according to the PHYSICAL CHANNEL RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.6.~~27~~19.3 Test purpose

To confirm that the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message before entering CELL_PCH state after it received a PHYSICAL CHANNEL RECONFIGURATION message and reconfigured its radio bearers. The UE is in CELL_PCH state in the same cell.

8.2.6.~~27~~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 the CELL_DCH state. The SS transmits a PHYSICAL CHANNEL RECONFIGURATION message. The UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the UE 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.

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_DCH in PS" in Annex A with following exceptions:

Information Element	Value/remark
~~DRX indicator~~RRC State Indicator	~~DRX with CELL updating~~CELL_PCH

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 Paging originator	UTRAN originator
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

8.2.6.~~27~~19.5 Test requirement

After step 1 the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the UE on uplink DCCH using AM RLC.

After step 3 the UE shall transit from CELL_DCH to CELL_PCH.

8.2.6.~~28~~20 Physical Channel Reconfiguration from CELL_DCH to URA_PCH: Success

8.2.6.~~28~~20.1 Definition

8.2.6.~~28~~20.2 Conformance requirement

The UE shall transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using and transits from CELL_DCH to URA_PCH when receives a PHYSICAL CHANNEL RECONFIGURATION message. And then, the UE shall reconfigure radio bearers according to the PHYSICAL CHANNEL RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.6.~~28~~20.3 Test purpose

To confirm that the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message before entering URA_PCH state after it received a PHYSICAL CHANNEL RECONFIGURATION message and reconfigured its radio bearers. The UE is in CELL_PCH state.

8.2.6.~~28~~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. The UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the UE 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.

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_DCH in PS“ in Annex A with following exceptions:

Information Element	Value/remark
~~DRX indicator~~RRC State Indicator	~~DRX with URA updating~~URA_PCH

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 Paging originator	UTRAN originator
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

8.2.6.~~28~~20.5 Test requirement

After step 1 the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the UE on uplink DCCH using AM RLC.

After step 3 the UE shall transit from CELL_DCH to URA_PCH.

8.2.6.2921 VoidPhysical Channel Reconfiguration from CELL_FACH to CELL_PCH: Success

8.2.6.29.1 Definition

8.2.6.29.2 Conformance requirement

The UE shall transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using and transits from CELL_DCH to CELL_PCH when receives a PHYSICAL CHANNEL RECONFIGURATION message. And then, the UE shall reconfigure radio bearers according to the PHYSICAL CHANNEL RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.6.29.3 Test purpose

To confirm that the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message before entering CELL_PCH state after it received a PHYSICAL CHANNEL RECONFIGURATION message and reconfigured its radio bearers. The UE is in CELL_PCH state.

8.2.6.29.4 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 UE 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.

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_DCH in PS" in Annex A with following exceptions:

Information Element	Value/remark
DRX indicator	DRX with CELL updating

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 Paging originator	UTRAN originator
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

8.2.6.29.5 Test requirement

After step 1 the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the UE on uplink DCCH using AM RLC.

After step 3 the UE shall transit from CELL_DCH to CELL_PCH.

8.2.6.3022 VoidPhysical Channel Reconfiguration from CELL_FACH to URA_PCH: Success

8.2.6.30.1 Definition

8.2.6.30.2 Conformance requirement

The UE shall transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using and transits from CELL_FACH to URA_PCH when receives a PHYSICAL CHANNEL RECONFIGURATION message. And then, the UE shall reconfigure radio bearers according to the PHYSICAL CHANNEL RECONFIGURATION message.

Reference

3GPP TS 25.331 clause 8.2.2

8.2.6.30.3 Test purpose

To confirm that the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message before entering URA_PCH state after it received a PHYSICAL CHANNEL RECONFIGURATION message and reconfigured its radio bearers. The UE is in CELL_PCH state.

8.2.6.30.4 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 UE 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.

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
DRX indicator	DRX with URA updating

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 Paging originator	UTRAN originator
- U-RNTI	
- SRNC Identity	Previously assigned SRNC identity
- S-RNTI	Previously assigned S-RNTI

8.2.6.30.5 Test requirement

After step 1 the UE transmits PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to the UE on uplink DCCH using AM RLC.

After step 3 the UE shall transit from CELL_FACH to URA_PCH.

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 VoidDownlink outer loop control

For all following sub-clauses, all references to RRC CONNECTION SETUP messages shall use the default settings provided in clause 9 of TS 34.108, unless otherwise stated.

8.2.9.1 Downlink outer loop control: Increase is Disallowed

8.2.9.1.1 Definition

8.2.9.1.2 Conformance requirement

The UE shall maintain its existing internal target SIR value after it has received DOWNLINK OUTER LOOP CONTROL message which forbids further adjustment of SIR target. This restriction shall be observed even if the UE has detect that the current SIR target is not sufficient to achieve the downlink quality demanded by the UTRAN.

Reference

3GPP TS 25.331 clause 8.2.9

8.2.9.1.3 Test purpose

To confirm that the UE keeps its target SIR value after it receives a DOWNLINK OUTER LOOP CONTROL message with the IE "Downlink Outer Loop Control" set to "TRUE".

8.2.9.1.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: DCCH+DTCH_DCH (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108 state with the no restriction by the DL outer loop power control

Test Procedure

The UE is in the CELL_DCH state and the SS adjusts its transmission power as the current SIR estimation by the UE has reached the same target SIR value determined autonomously by the UE. This condition can be observed when the TPC command bits on the DPCCH physical channel has stabilized (consistently alternating between values 0 and 1). The SS transmits the DOWNLINK OUTER LOOP CONTROL message, which is set to "TRUE" in IE "Downlink Outer Loop Control". Then the SS generates erroneous framessuch that the measured BLER in the UE falls below the value specified in IE "BLER Quality Value" of the RRC CONNECTION SETUP message received during the mobile-terminated RRC connection establishment procedure (described in clause 7.1.2 of TS 34.108). The UE shall detect this change but it maintains the current SIR target value and does not request that SS increases downlink transmission power by setting TPC in DPCCH to "1".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The SS adjusts its transmission power as such that the measured value of SIR in the UE is the same as the SIR target value determined by the UE. The target SIR value is chosen by the UE in order that the target BLER value requested by SS is achieved.
2		←	DOWNLINK OUTER LOOP CONTROL	Set value "TRUE" in IE "Downlink Outer Loop Control".
3				The SS starts to generate some error frames. The current SIR target in the UE cannot guarantee target BLER value specified earlier.
4				The UE shall keeps the existing SIR target value and it shall not request that the DL transmission power be increased using TPC bits in DPCCH physical channel.

Specific Message Content

DOWNLINK OUTER POWER CONTROL

Information Element	Value/remark
Integrity check info	Not Present
Downlink Outer Loop Control	
- DL Outer loop control	Increased not allowed
Downlink DPCH power control information	
- DPC Mode	Single

8.2.9.1.5 Test requirement

After step 3 the SS shall keep the target SIR value as same as step 1 and it shall not request for the downlink transmission power be increased by setting TPC bits to "1".

8.2.9.2 Downlink outer loop control: Increase is Allowed

8.2.9.2.1 Definition

8.2.9.2.2 Conformance requirement

The downlink power control procedure is used to control the downlink outer loop power control running in the UE. If the UE receives the DOWNLINK OUTER LOOP CONTROL message with value "FALSE" in IE "Downlink Outer Loop Control", it shall remove any existing restriction of DL outer loop power control. The UE shall begin to increase its DL target SIR value and make the DL transmission power increase until the desired BLER value for the DPCH transport channel has been attained.

Reference

3GPP TS 25.331 clause 8.2.9

~~8.1.2.9.2.3 Test purpose~~

~~To confirm that the UE begins to exercise DL outer loop power control, in order to increase the target SIR value, after it had received a DOWNLINK OUTER LOOP CONTROL message specifying "FALSE" in IE "Downlink Outer Loop Control".~~

~~8.2.9.2.4 Method of test~~

~~Initial Condition~~

~~System Simulator: 1 cell~~

~~UE: DCCH+DTCH_DCH state (state 6-9 or state 6-10) as specified in clause 7.4 of TS 34.108 with the restriction by the DL outer loop power control~~

~~Test Procedure~~

~~The UE is in the CELL_DCH state with the restriction by the DL outer loop power control. The internal SIR target value determined by the UE is expected to be insufficient to allow the UE to achieve target BLER figure. The SS transmits the DOWNLINK OUTER LOOP CONTROL message, setting the value "FALSE" in IE "Downlink Outer Loop Control". Then the UE shall update its SIR target value and make the DL transmission power increase.~~

~~Expected sequence~~

~~Step~~	~~Direction~~		~~Message~~	~~Comment~~
	~~UE~~	~~SS~~		
~~1~~				~~The UE is brought to the same state as the end of step 4 in Clause 8.1.2.9.1.3.~~
~~2~~		~~←~~	~~DOWNLINK OUTER LOOP CONTROL~~	~~Set the value "FALSE" in IE "Downlink Outer Loop Control".~~
~~3~~				~~The UE shall begin to request that the DL transmission power be increased. This is done by setting the TPC field to "1" in DPCCH.~~

~~8.2.9.2.5 Test requirement~~

~~After step 3 the SS shall increase the DL transmission power more than step 1.~~

~~8.2.9.3 Downlink outer loop control: Failure (Invalid message reception)~~

~~8.2.9.3.1 Definition~~

~~8.2.9.3.2 Conformance requirement~~

~~The UE shall correctly handle an erroneous DOWNLINK OUTER LOOP CONTROL message, and perform the appropriate error handling procedure. Specifically, it shall not alter the downlink power control mechanism, which is currently being applied. It shall also transmit a RRC STATUS message using RLC-AM mode on the DCCH channel, state the appropriate failure cause.~~

~~Reference~~

~~3GPP TS 25.331 clause 8.2.9~~

8.2.9.3.3 Test purpose

To confirm that the UE transmits an RRC STATUS message on the DCCH using AM RLC when it receives a DOWNLINK OUTER LOOP CONTROL message, containing an invalid conditional IE with respect to the state of the UE.

8.2.9.3.4 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 and the integrity protection algorithm is not applied.

Test Procedure

The UE is in CELL_DCH state. Test steps 1 to 3 described in clause 8.2.9.1.4 are repeated. Next, the SS transmits another DOWNLINK OUTER LOOP CONTROL message, removing the power increase restriction, and at the same time includes the conditional IE "Integrity Check Info". The UE shall not request for an increase in the downlink transmission power through the TPC command field in DPCCH. It shall transmit RRC STATUS message stating the value "Message extension not comprehended" in IE "protocol cause".

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				Executes step 1 to step 3 in clause 8. 2.9.1.4.
2	←		DOWNLINK OUTER LOOP CONTROL	Contains an unexpected information element "Integrity Check Info" in the message. See specific message content.
3	→		RRC STATUS	The UE shall not request for an increase in downlink transmission power. SS verifies this by checking the TPC command field in uplink DPCCH. The RRC STATUS message shall specify cause "Message extension is not comprehended" in IE "Protocol Error Information"

Specific Message Content

DOWNLINK OUTER LOOP CONTROL (Step 2)

The contents of DOWNLINK OUTER LOOP CONTROL message in this test case is identical to those of the default contents of layer 3 messages for RRC tests with the following exceptions:

Information Element	Value/remark
Integrity Check Info	Present
- Message authentication code	An arbitrary 32-bits string
- RRC Message Sequence	An arbitrarily chosen integer from range (0….15)

~~RRC STATUS~~

~~Information Element~~	~~Value/remark~~
~~Message Type~~	
~~Protocol error information~~	~~Information element value not comprehended~~
~~Other information element~~	~~Not checked~~

~~8.2.9.3.5 Test requirement~~

~~After step 3 the UE shall keep its restriction for increase in downlink transmission power and not set TPC command fields in uplink DPCCH to "1". It shall transmit an RRC STATUS message on the DCCH using AM RLC, indicating "Information element value not comprehended" in IE "Protocol error cause".~~

8.3 RRC connection mobility procedure

8.3.1 Cell Update

8.3.1.1 Cell Update: cell reselection in CELL_FACH

8.3.1.1.1 Definition

8.3.1.1.2 Conformance requirement

This procedure is used to update UTRAN with the current cell of the UE after it has performed a cell reselection in CELL_FACH state.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.1.3 Test purpose

To confirm that the UE executes a cell update procedure after the successful reselection of another UTRA cell. To confirm that the UE send the correct uplink respond message when executing cell update procedure due to cell reselection.

8.3.1.1.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 is active, with the downlink transmission power shown in column marked "T0" in Table 8.3.1.1-1, while ~~Cell~~ 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 supported by the UE

Test Procedure

Parameter	Unit	Cell 1			Cell 2		
		T0	T1	T2	T0	T1	T2
UTRA RF Channel Number		Ch. 1			Ch. 1		
$\hat{I}_{or}/I_{oc}$	dB	7.3	1.2	7.3	Cell 2 is switched off	7.3	1.2
CPICH Ec/Io	dB	-10.7	-17.7	-11.6		-11.6	-17.7
CPICH RSCP	dBm	-72.7	-78.8	-72.7		-72.7	-78.8

Table 8.3.1.1-1

Table 8.3.1.1-1 illustrates the downlink power to be applied for the 2 cells at various time instants of the test execution. Columns marked "T0" denote the initial conditions, while columns marked "T1" and "T2" are to be applied subsequently. SS switches the power settings repeatedly between columns "T1" and "T2", whenever the description below specifies that the transmission power settings for cell 1 and cell 2 are reversed.

The UE is in the CELL_FACH state, camping onto cell 1. SS configures its downlink transmission power settings according to columns "T1" in Table 8.3.1.1-1. ~~The~~ SS starts to broadcast BCCH on the primary CCP~~I~~CH in cell 2 ~~with a power level greater than that in cell 1~~. The UE shall find cell 2 to be more suitable for service and hence perform a cell reselection. After the completion of cell reselection, the UE shall transmits a CELL UPDATE message to the SS on the uplink CCCH of cell 2 and set IE "Cell update cause" to "Cell Reselection". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message, which includes the IE "~~DRX Indicator~~RRC State Indicator" set to "~~DRX with Cell updating~~CELL_PCH", to the UE on the downlink DCCH. SS verifies that the UE does not send any response to this message. UE shall move to CELL_PCH state. SS then reverses the transmission power of cell 1 and cell 2. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS replies with CELL UPDATE CONFIRM message and allocates new C-RNTI and U-RNTI identities to the UE. The IE "~~DRX Indicator~~RRC State Indicator" is set to "~~No DRX~~CELL_FACH" in this message. The UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM ~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~ message. Following this, SS reverses the transmission power settings for cell 1 and cell 2 again. The UE shall initiate a cell update procedure by transmitting a CELL UPDATE message and stating the cause as 'cell re-selection'. SS replies with a CELL UPDATE CONFIRM message which contains IE "Physical channel information elements"~~IE "PRACH Info" and IE "Secondary CCPCH Info"~~. The UE shall send PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to acknowledge the ~~assignment of the new~~change in physical resources. Then, SS reverses the transmission power settings for cell 1 and cell 2 again. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS replies with a CELL UPDATE CONFIRM message which contains IE "Transport channel information elements". The UE shall send TRANSPORT CHANNEL RECONFIGURATION COMPLETE message. Following this, SS reverses the transmission power settings for cell 1 and cell 2 again. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 2. SS replies with a CELL UPDATE CONFIRM message which contains IE "RB information to be affected list". The UE shall send RADIO BEARER RECONFIGURATION COMPLETE message. Finally, SS reverses the transmission power settings for cell 1 and cell 2 once again. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS replies with a CELL UPDATE CONFIRM message which contains IE "RB information to release list". The UE shall send RADIO BEARER RELEASE COMPLETE message.

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 "T1" of Table 8.3.1.1-1. The SS starts to broadcast BCCH on the primary CCPICH in cell 2 with a power level that is higher than that in cell 1. The UE shall find that the cell 2 is better for service and perform a reselection. SS waits for the maximum duration required for the UE to camp to cell 2.
3		→	CELL UPDATE	Value "cell reselection" should be indicated in IE " Cell update cause"
4		←	CELL UPDATE CONFIRM	IE "DRX IndicatorRRC State Indicator" is set to "DRX with cell updatingCELL_PCH". SS set k=0.
5				SS checks the uplink PRACH channel to verify that no response is sent by UE. SS reverses the transmission power level of cell 1 and cell 2.
6				SS reverses the transmission power level of cell 1 and cell 2.
67		→	CELL UPDATE	UE shall revert to normal service in cell 1 and set the cause to "cell reselection".
78		←	CELL UPDATE CONFIRM	IE "DRX IndicatorRRC State Indicator" is set to "No DRXCELL_FACH". If k ≥ 0, New new C-RNTI and U-RNTI identities are assigned to the UE. If k>1, IE "Physical channel information elements" is included in this message. If k>2, IE "Transport channel information elements" is included in this message. If k>3, IE "RB information to be affected list" is included in this message. If k>4, IE "RB information to release list" is included in this message. Increment k by 1.
89		→	UTRAN MOBILITY INFORMATION CONFIRMPHYSICAL CHANNEL RECONFIGURATION COMPLETE	If k=1 when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.UE moves to CELL_FACH state and sends this message.
9				SS reverses the transmission power level of cell 1 and cell 2.
10		→	CELL UPDATE	UE shall detect that cell 2 has become stronger.
11		←	CELL UPDATE CONFIRM	IE "DRX Indicator" is set to "No DRX". At the same time, IE "PRACH Info" and IE "Secondary CCPCH Info" are also indicated.

~~12~~10	→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	If k=2 when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.~~UE moves to CELL_FACH state and sends this message on the new PRACH assigned in step 11.~~
11	→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	If k=3 when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.
12	→	RADIO BEARER RECONFIGURATION COMPLETE	If k=4 when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.
13	→	RADIO BEARER RELEASE COMPLETE	If k=5 when SS received this message, test ends. Else test fails. If this message is not received, test fails.

Specific Message Contents

CELL UPDATE (Steps 3 and ~~6~~7)

~~Use t~~The same message ~~sub-type~~ 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 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0000 0001' when k<1. Check to see if set to same string in IE "S-RNTI" in IE "New U-RNTI" of CELL UPDATE CONFIRM message in previous step 8 when k<0.
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
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 4)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
~~DRX Indicator~~RRC State Indicator	~~DRX with cell updating~~CELL_PCH

CELL UPDATE CONFIRM (Step ~~7~~8 and k = 0)

Use the same message sub-type found in ~~Annex A~~step 4, with the following exceptions:

Information Element	Value/remark
New U-RNTI - SRNC Identity - S-RNTI New C-RNTI	 '0000 0000 ~~0000~~ 0001' An arbitrary 20-bits string which is different from original S-RNTI An arbitrary 16-bits string which is different from original C-RNTI assigned in RRC connection establishment procedure.

~~CELL UPDATE (Step 10)~~

~~Use the same message sub-type found in Annex A.~~

~~Information Element~~	~~Value/remark~~
~~U-RNTI~~ ~~- SRNC Identity~~ ~~- S-RNTI~~ ~~Integrity check info~~ ~~AM_RLC error indicator (for C-plane)~~ ~~AM_RLC error indicator (for U-plane)~~ ~~START List~~ ~~Cell Update Cause~~ ~~Protocol error indicator~~ ~~Measured results on RACH~~ ~~Protocol error information~~	 ~~Check to see if set to '0000 0000 0000 0001'~~ ~~Check to see if set to same string in IE "S-RNTI" in IE "New U-RNTI" of CELL UPDATE CONFIRM message in step 7.~~ ~~Not checked~~ ~~Check to see if set to 'FALSE'~~ ~~Check to see if set to 'FALSE'~~ ~~Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE~~ ~~Check to see if set to 'Cell Re-selection'~~ ~~Check to see if it is absent or set to 'FALSE'~~ ~~Check to see if it is absent~~ ~~Check to see if it is absent~~

CELL UPDATE CONFIRM (Step ~~11~~8 and k=1)

Use the same message sub-type found in ~~Annex A~~step 8 and k=0, with the following exceptions:

Information Element	Value/remark
Maximum allowed uplink TX power ~~PRACH Info (for RACH)~~ ~~- Available Signature~~ ~~- Available SF~~ ~~- Preamble scrambling code number~~ ~~- Puncturing Limit~~ ~~- Available Sub-Channel number~~ ~~Downlink DPCH info for one radio link~~ ~~- Primary CPICH Info~~ ~~- Primary Scrambling Code~~ ~~- PDSCH with SHO DCH Info~~ ~~- PDSCH code mapping~~ ~~- Secondary CCPCH Info~~ ~~- Primary CPICH usage for channel estimation~~ ~~- Secondary CPICH Info~~ ~~- Secondary scrambling code~~ ~~- Channelization code~~ ~~- Secondary scrambling code~~ ~~- STTD indicator~~ ~~- Spreading factor~~ ~~- Code number~~ ~~- Pilot symbol existence~~ ~~- TFCI existence~~ ~~- Fixed or Flexible Position~~ ~~- Timing Offset~~	3 dB below the follow value: Minimum of { 33 dBm, maximum uplink power allowed under the UE power class } ~~'0000000000000011'B:Signature 0&1~~ ~~Refer to the parameter set for TS 34.108~~ ~~0~~ ~~Refer to the parameter set for TS 34.108~~ ~~'000000000011'B:SubChNumber 0&1~~ ~~Set to the scrambling code for cell 1's P-CPICH.~~ ~~Not Present.~~ ~~Not Present.~~ ~~TRUE~~ ~~Not Present. Use default (Scrambling code of P-CPICH)~~ ~~1~~ ~~Not Present. Use default (Scrambling code of P-CPICH)~~ ~~FALSE~~ ~~256~~ ~~255~~ ~~TRUE~~ ~~TRUE~~ ~~Flexible~~ ~~0 chips~~

CELL UPDATE CONFIRM (Step 8 and k=2)

Use the same message sub-type found in step 8 and k=1, with the following exceptions:

Added or Reconfigured uplink TrCH information	
-Transport channel identity	1
-TFS	
-Dynamic Transport format information	(This IE is repeated for TFI number)
-Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
-RLC size	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

CELL UPDATE CONFIRM (Step 8 and k=3)

Use the same message sub-type found in step 8 and k=2, with the following exceptions:

RB information to be affected	(UM DCCH for RRC)
-RB identity	1
-RB mapping info	
-Information for each multiplexing option	
-Number of uplink RLC logical channels	1
-Uplink transport channel type	RACH
-uplink Transport channel identity	1
-Logical channel identity	1
-CHOICE RLC size list	
-MAC logical channel priority	2
-Number of downlink RLC logical channels	1
-Downlink transport channel type	FACH
-DL Transport channel identity	1
-Logical channel identity	1

CELL UPDATE CONFIRM (Step 8 and k=4)

Use the same message sub-type found in step 8 and k=3, with the following exceptions:

RB information to release	
-RB identity	4

8.3.1.1.5 Test requirement

After step 2 the UE shall reselect to cell 2 and then it shall transmit a CELL UPDATE message which, sets the value "cell reselection" in IE "Cell update cause".

After step 4 the UE shall not transmit any uplink message in response to the CELL UPDATE CONFIRMATION message received in step 4.

After step ~~5~~ 6 the UE shall sent CELL UPDATE message to cell with stronger transmitting power~~1~~, in order to indicate that a cell reselection has taken place.

After step ~~7~~ 8, if k=1, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM ~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~ message to acknowledge that it has started to use the new RNTI identities allocated.

~~After step 9 the UE shall sent CELL UPDATE message to cell 2, in order to indicate that a cell reselection has taken place.~~

~~After step 11~~If k=2, the UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the new ~~PRACH~~ physical channel assigned ~~previously in CELL UPDATE CONFIRM message sent in step 11~~.

If k=3, the UE shall transmit TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to acknowledge that it has reconfigured the transport channels.

If k=4, the UE shall transmit RADIO BEARER RECONFIGURATION COMPLETE message to acknowledge that it has reconfigured the radio bearers.

If k=5, the UE shall transmit RADIO BEARER RELEASE COMPLETE message to acknowledge that it has release its radio bearers.

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. To confirm that the UE replies with an appropriate uplink message after receiving CELL UPDATE CONFIRM message during the cell update procedure.

8.3.1.2.4 Method of test

Initial Condition

System Simulator: 2 cells – Cell 1 is active with the downlink transmission power shown in column marked "T0" in Table 8.3.1.1-1, while cell ~~, Cell~~ 2 is inactive

UE: CELL_PCH (state 6~~-15~~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. The SS starts to broadcast system information on the BCCH on the primary C~~P~~CH in cell 2. SS configures its downlink transmission power settings according to columns "T1" in Table 8.3.1.1-1.~~The transmission level of cell 2 is raised to be higher than in cell 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, ~~the SS transmits a CELL UPDATE CONFIRM message which includes the Ies "PRACH info", "Secondary CCPCH info" to the UE on the downlink DCCH. In this message, the IE "DRX Indicator" is set to "No DRX". Then the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH and enters CELL_FACH state. SS exchanges the transmission power of cell 1 and cell 2, so that cell 1 becomes the stronger cell. UE shall initiate a cell update procedure again by transmitting CELL UPDATE message.~~ SS replies with a CELL UPDATE CONFIRM message with the IE "~~DRX Indicator~~RRC State Indicator" set to "~~DRX with cell updating~~CELL_PCH". After receiving this message, the UE returns to CELL_PCH state without transmitting any uplink message. ~~Finally~~Next, SS reverses the transmission strengths of cell 1 and cell 2 again. This will cause the UE to send CELL UPDATE message on the uplink ~~PRACH~~ CCCH of cell ~~2~~1. SS then sends CELL UPDATE CONFIRM message with the assignment of new C-RNTI and U-RNTI identities. The UE shall transmit ~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~UTRAN MOBILITY INFORMATION CONFIRM message as a response. Following this, SS reverses the transmission power settings for cell 1 and cell 2 again. The UE shall initiate a cell update procedure by transmitting a CELL UPDATE message on the uplink CCCH of cell 2 and stating the cause as 'cell re-selection'. SS replies with a CELL UPDATE CONFIRM message which contains "Physical channel information elements". The UE shall send PHYSICAL CHANNEL RECONFIGURATION COMPLETE message to acknowledge the change in physical resources. Then, SS reverses the transmission power settings for cell 1 and cell 2 again. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS replies with a CELL UPDATE CONFIRM message which contains "Physical channel information elements" and "Transport channel information elements". The UE shall send TRANSPORT CHANNEL RECONFIGURATION COMPLETE message. Following

this, SS reverses the transmission power settings for cell 1 and cell 2 again. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 2. SS replies with a CELL UPDATE CONFIRM message which contains "Physical channel information elements", "Transport channel information elements" and IE "RB information to be affected list". The UE shall send RADIO BEARER RECONFIGURATION COMPLETE message. Finally, SS reverses the transmission power settings for cell 1 and cell 2 once again. The UE shall send a CELL UPDATE message on the uplink CCCH of cell 1. SS replies with a CELL UPDATE CONFIRM message which contains "Physical channel information elements", "Transport channel information elements", IE "RB information to reconfigure list" and IE "RB information to release list". The UE shall send RADIO BEARER RELEASE COMPLETE message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_PCH state in cell 1
2	←		BCCH	The SS starts to broadcast system information message on BCCH on the primary CCPICH from cell 2. SS reverse Tthe transmission level of cell 2 is set to be higher than that inand cell 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".The message includes les "PRACH info", "Secondary CCPCH info" and set IE "DRX Indicator" to "No DRX". SS set k=0.
5	—→		PHYSICAL CHANNEL RECONFIGURATION CONFIRM	UE stays in CELL_FACH state.
65				SS swaps the transmission power of cell 1 and cell 2, making cell 1 the stronger cell.
76	→		CELL UPDATE	UE move from CELL_PCH to CELL_FACH to transmit this message.
87	←		CELL UPDATE CONFIRM	IE "RRC State Indicator" is set to "CELL_FACH". If k ≥ 0, new C-RNTI and U-RNTI identities are assigned to the UE. If k>1, IE "Physical channel information elements" is included in this message. If k>2, IE "Transport channel information elements" is included in this message. If k>3, IE "RB information to be affected list" is included in this message. If k>4, IE "RB information to release list" is included in this message. Increment k by 1.IE "DRX Indicator" is set to "DRX with cell updating".
8	—→		UTRAN MOBILITY INFORMATION CONFIRM	If k=1 when SS received this message, go to step 5. Else test fails. If this message is not received, proceed to next step.
9				UE moves to CELL_PCH state. SS exchanges the transmission power of cell 1 and cell 2.
10	—→		CELL UPDATE	UE shall re-select to cell 2 and transmit this message.
11	—←		CELL UPDATE CONFIRM	Includes IE "new U-RNTI" and IE "new C-RNTI"

~~12~~9	→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	If k=2 when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.
10	→	TRANSPORT CHANNEL RECONFIGURATION COMPLETE	If k=3 when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.
11	→	RADIO BEARER RECONFIGURATION COMPLETE	If k=4 when SS received this message, go to step 6. Else test fails. If this message is not received, proceed to next step.
12	→	RADIO BEARER RELEASE COMPLETE	If k=5 when SS received this message, test ends. Else test fails. If this message is not received, test fails.

Specific Message Contents

CELL UPDATE (Steps 3~~, 7 and 10~~and 6)

Use the same message sub-type found in Annex A, with the following exception.

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0000 0001' when k<1. Check to see if set to same string in IE "S-RNTI" in IE "New U-RNTI" of CELL UPDATE CONFIRM message in previous step 7 when k<0.
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
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 4)~~

~~Use the same message found in step 11 of Clause 8.3.1.1.3~~

CELL UPDATE CONFIRM (Step ~~8~~4)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
~~DRX Indicator~~RRC State Indicator	~~DRX with cell updating~~CELL_PCH

CELL UPDATE CONFIRM (Step ~~11~~7 and k=0)

Use the same message sub-type found in ~~Annex A~~step 4, with the following exceptions:

Information Element	Value/remark
New U-RNTI - SRNC Identity - S-RNTI New C-RNTI	 '0000 0000 0000 0001' An arbitrary 20-bits string which is different from original S-RNTI An arbitrary 16-bits string which is different from original C-RNTI.

CELL UPDATE CONFIRM (Step 7 and k=1)

Use the same message sub-type found in step 7 with k=0, with the following exceptions:

Information Element	Value/remark
Maximum allowed uplink TX power	3 dB below the follow value: Minimum of { 33 dBm, maximum uplink power allowed under the UE power class }

CELL UPDATE CONFIRM (Step 7 and k=2)

Use the same message sub-type found in step 7 with k=1, with the following exceptions:

Added or Reconfigured uplink TrCH information	
-Transport channel identity	1
-TFS	(This IE is repeated for TFI number)
-Dynamic Transport format information	Reference to TS34.108 clause 6.10 Parameter Set Reference to TS34.108 clause 6.10 Parameter Set
-Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
-RLC size	Reference to TS34.108 clause 6.10 Parameter Set
-Semi-static Transport Format information	Reference to TS34.108 clause 6.10 Parameter Set Reference to TS34.108 clause 6.10 Parameter Set Reference to TS34.108 clause 6.10 Parameter Set Reference to TS34.108 clause 6.10 Parameter Set
-Transmission time interval	
-Type of channel coding	
-Coding Rate	
-Rate matching attribute	
-CRC size	

CELL UPDATE CONFIRM (Step 7 and k=3)

Use the same message sub-type found in step 7 with k=2, with the following exceptions:

RB information to be affected	(UM DCCH for RRC)
-RB identity	1
-RB mapping info	1
-Information for each multiplexing option	RACH
-Number of uplink RLC logical channels	1
-Uplink transport channel type	1
-uplink Transport channel identity	2
-Logical channel identity	1
-CHOICE RLC size list	FACH
-MAC logical channel priority	1
-Number of downlink RLC logical channels	1

-Downlink transport channel type -DL Transport channel identity -Logical channel identity	

CELL UPDATE CONFIRM (Step 7 and k=4)

Use the same message sub-type found in step 7 with k=3, with the following exceptions:

RB information to release -RB identity	4

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 4 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.~~

After step 5 the UE shall reselect to stronger transmitting cell and transmit a CELL UPDATE message, containing the IE "Cell update cause" set to "cell reselection".

After step 7, if k=1, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

~~After step 9 the UE shall detect that cell 2 has become the stronger cell. It shall send a CELL UPDATE message on cell 2' PRACH channel with the cause set to "cell reselection".~~

~~After step 11~~If k=2, the UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.

If k=3, the UE shall transmit TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to acknowledge that it has reconfigured the transport channels.

If k=4, the UE shall transmit RADIO BEARER RECONFIGURATION COMPLETE message to acknowledge that it has reconfigured the radio bearers.

If k=5, the UE shall transmit RADIO BEARER RELEASE COMPLETE message to acknowledge that it has release its radio bearers.

8.3.1.3 Cell Update: periodical cell update in CELL_FACH

8.3.1.3.1 Definition

8.3.1.3.2 Conformance requirement

This procedure is to update UTRAN with the current cell information, after the UE has remained in the service area in the CELL_FACH state for a period exceeding the timer value T305.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.3.3 Test purpose

To confirm that the UE executes a periodic cell update procedure following the expiry of timer T305. To confirm that the UE sends a correct response to the CELL UPDATE CONFIRM message. To confirm that the UE listens to the system information messages and then responds to a change in the setting for timer T305.

8.3.1.3.4 Method of test

Initial Condition

System Simulator: 1 cell

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

Test Procedure

The UE is in CELL_FACH state. When the UE detects the expiry of timer T305 according to the settings in system information, the UE transmits a CELL UPDATE message to the SS on the uplink CCCH with a cause indicating periodic cell updating. SS replies with a CELL UPDATE CONFIRM message, ~~omitting the IEs "new C-RNTI", "new U-RNTI", "PRACH Info" and "Secondary CCPCH Info". The~~and IE "~~DRX Indicator~~RRC State Indicator"~~, however,~~ is ~~specified and~~ set to "~~No DRX~~CELL_FACH". SS verifies that the UE does not transmit any uplink message. SS then waits for T305 to expire again. The UE shall send another CELL UPDATE message to report periodic cell updating. After the SS receives this message, it transmits a CELL UPDATE CONFIRM message which includes the IEs "new C-RNTI", "new U-RNTI" to the UE on the downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH to acknowledge the receipt of the new UE identities. ~~SS once again allows T305 timer to expire, the UE shall transmit CELL UPDATE message for the third time. The new U-RNTI shall be indicated in this message together with the correct updating cause. In this sequence, SS replies with a CELL UPDATE CONFIRM message containing new channel parameters in IEs "PRACH Info" and "Secondary CCPCH Info". The UE shall then send a PHYSICAL CHANNEL RECONFIGURTION COMPLETE message by using the newly allocated PRACH resources. Finally~~Next, the content of the SYSTEM INFORMATION BLOCK TYPE ~~2~~ 1 is changed to disable periodic cell updating. SS then monitors the uplink ~~DCCH~~ CCCH for a period up to the maximum possible value for timer T305 (720minutes) and verifies that no CELL_UPDATE message is received. After this, the SS changes the timer T305 value to 5 minutes. UE shall resume periodic cell updating procedure and transmit CELL_UPDATE message 5 minutes after this modification.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state. SS waits until T305 has expired.
2	→		CELL UPDATE	IE "Cell update cause" shall be set to "Periodic cell updating"
3	←		CELL UPDATE CONFIRM	No RNTI identities are given. No information on PRACH and S-CCPCH are provided.
4				SS verifies that no uplink message is received from UE. SS waits for another period to allow T305 to expire.
5	→		CELL UPDATE	Which is set to "periodical cell update" in IE "Cell update cause" ~~for~~ upon the expiry of timer T305.
6	←		CELL UPDATE CONFIRM	Including IEs "new C-RNTI" , "new U-RNTI" and IE "~~DRX Indicator~~RRC State Indicator" is set to "~~No DRX~~CELL_FACH"
7	→		UTRAN MOBILITY INFORMATION CONFIRM	

~~8~~			~~SS waits for a duration to allow timer T305 in the UE to expire.~~
~~9~~	~~—→~~	~~CELL UPDATE~~	
~~10~~	~~—←~~	~~CELL UPDATE CONFIRM~~	~~IEs "PRACH Info" and "Secondary CCPCH Info" are included.~~
~~11~~	~~—→~~	~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~	
~~12~~8	←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE ~~2~~1	SS changes the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents). It waits for 720 minutes and checks that no CELL UPDATE message is transmitted on uplink PRACH channel.
~~13~~9	←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 2	SS modified the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents) again.
~~14~~10	→	CELL UPDATE	UE shall transmit this message 5 minutes after step ~~13~~9, with "cell update cause" set to "periodic cell updating"
~~15~~11	←	CELL UPDATE CONFIRM	

Specific Message Contents

CELL UPDATE (Step 2 and 5)

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'
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
Cell Update Cause	Check to see if set to 'Periodic cell updating'
~~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 3)

Use the same message sub-type found in Annex A.

CELL UPDATE CONFIRM (Step 6 and ~~15~~11)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New U-RNTI - SRNC Identity - S-RNTI	 Set to '0000 0000 0001' Set to an arbitrary string different from '0000 0000 0000 0000 0001'

CELL UPDATE (Step ~~9 and~~ 14)

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI	 Check to see if set to '0000 0000 0000 0001' Check to see if set to same bit string as in IE "S-RNTI" in IE "U-RNTI" of the CELL UPDATE CONFIRM message sent in step 6.
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
Cell Update Cause	Check to see if set to 'Periodic cell updating'
~~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 10)~~

~~Use the same message sub-type found in Annex A, with the following exceptions:~~

~~Information Element~~	~~Value/remark~~
~~PRACH Info (for RACH)~~	
~~- Available Signature~~	~~'0000000000000011'B:Signature 0&1~~
~~- Available SF~~	~~Refer to the parameter set for TS 34.108~~
~~- Preamble scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Refer to the parameter set for TS 34.108~~
~~- Available Sub-Channel number~~	~~'000000000011'B:SubChNumber 0&1~~
~~Downlink DPCH info for one radio link~~	
~~- Primary CPICH Info~~	
~~- Primary Scrambling Code~~	~~Set to the scrambling code for cell 1's P-CPICH.~~
~~- PDSCH with SHO DCH Info~~	~~Not Present.~~
~~- PDSCH code mapping~~	~~Not Present.~~
~~- Secondary CCPCH Info~~	
~~- Primary CPICH usage for channel estimation~~	~~TRUE~~
~~- Secondary CPICH Info~~	
~~- Secondary scrambling code~~	~~Not Present. Use default (Scrambling code of P-CPICH)~~
~~- channelization code~~	~~1~~
~~- Secondary scrambling code~~	~~Not Present. Use default (Scrambling code of P-CPICH)~~
~~- STTD indicator~~	~~FALSE~~
~~- Spreading factor~~	~~256~~
~~- Code number~~	~~255~~
~~- Pilot symbol existence~~	~~TRUE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing Offset~~	~~0 chips~~

MASTER INFORMATION BLOCK (Step ~~12~~8)

Information Element	Value/remark
MIB Tag	2

SYSTEM INFORMATION BLOCK TYPE ~~2~~ 1 (Step ~~12~~8)

Information Element	Value/remark
UE Timers and constants in connected mode T305	No update Infinity

MASTER INFORMATION BLOCK (Step ~~13~~9)

Information Element	Value/remark
MIB Tag	1

SYSTEM INFORMATION BLOCK TYPE ~~2~~ 1 (Step ~~13~~9)

Information Element	Value/remark
UE Timers and constants in connected mode T305	 5 minutes

8.3.1.3.5 Test requirement

After step 1 the UE shall detect the expiry of timer T305 then transmits a CELL UPDATE message setting value "periodical cell update" into IE "Cell update cause".

After step 3 the UE shall not send any uplink message as a response to CELL UPDATE CONFIRM message sent in step 3.

After step 4 the UE shall send CELL UPDATE message, specifying the cell updating cause to be "periodical cell update".

After step 6 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

~~After step 8 the UE shall send CELL UPDATE message, specifying the cell updating cause to be "periodic cell update".~~

~~After step 10 the UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message using the PRACH radio resources allocated.~~

Between step ~~12~~ 8 and step ~~13~~ 9 the UE shall cease periodic cell updating activity and not transmit any CELL UPDATE messages.

After step ~~13~~ 9 the UE shall transmit a CELL UPDATE message stating the cell update cause to be periodic updating, 5 minutes after the SS has modified the BCCH data.

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. To confirm that the UE sends an appropriate response message after receiving the CELL UPDATE CONFIRM message.

8.3.1.4.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_PCH (state 6~~15~~12) as specified in clause 7.4 of TS 34.108

Test Procedure

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, with IE "~~DRX Indicator~~RRC State Indicator" set to "~~No DRX~~CELL_FACH". ~~IEs related to RNTI, PRACH and S-CCPCH are omitted from this message.~~ SS checks to confirm that the UE does not send a response. SS sends a UTRAN MOBILITY INFORMATION message to the UE, stating the new C-RNTI identity to be used and also setting IE "~~DRX Indicator~~RRC State Indicator" to "~~DRX with cell updating~~CELL_PCH". The UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message and transit to CELL_PCH state. Next, SS stays idle until timer T305 is once again expired. The UE shall transmit CELL UPDATE message in order to initiate cell updating procedure. After the SS receives this message, it transmits a CELL UPDATE CONFIRM message which includes the IEs "new C-RNTI" and "new U-RNTI". Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH and before entering CELL_PCH state. Next, the content of the SYSTEM INFORMATION BLOCK TYPE 1 is changed to disable periodic cell updating. SS then monitors the uplink CCCH for a period up to the maximum possible value for timer T305 (720minutes) and verifies that no CELL_UPDATE message is received. After this, the SS changes the timer T305 value to 5 minutes. UE shall resume periodic cell updating procedure and transmit CELL_UPDATE message 5 minutes after this modification.~~In the next sequence, SS assigns a new U-RNTI identity to the UE by transmitting UTRAN MOBILITY INFORMATION message again. Once again, the IE "DRX Indicator" is set to "DRX with cell updating". After reception of this message, the UE moves to CELL_PCH state and start to listen to the paging sub-channels derived based on the value of new U-RNTI given. Finally, SS waits until T305 has expired once more, the UE shall send CELL UPDATE message again on uplink CCCH. SS replies with CELL UPDATE CONFIRM which includes IEs "PRACH Info" and "Secondary CCPCH Info". The UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using PRACH indicated in CELL UPDATE CONFIRM message.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_PCH state. SS waits until T305 has expired.
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	Does not include IEs "PRACH Info", "Secondary CCPCH Info", "new C-RNTI" or "new U-RNTI".
4				SS verifies that no response message is received.
5	←		UTRAN MOBILITY INFORMATION	Allocates a new C-RNTI identity to UE and set IE "~~DRX Indicator~~RRC State Indicator" to "~~DRX with Cell updating~~CELL_PCH".
6	→		UTRAN MOBILITY INFORMATION CONFIRM	UE shall move to CELL_PCH state
7				SS remains idle for a period sufficient for T305 timer to expire.
8	→		CELL UPDATE	This message shall contain the new U-RNTI identity assigned in step 5. UE moves t o CELL_FACH to transmit this message.
9	←		CELL UPDATE CONFIRM	New C-RNTI and U-RNTI identities are assigned.
10	→		UTRAN MOBILITY INFORMATION CONFIRM	UE moves back to CELL_PCH after transmitting this message.
~~11~~	~~←~~		~~UTRAN MOBILITY INFORMATION~~	~~SS assigns a new U-RNTI identity to the UE. At the same time, it sets IE "DRX Indicator" to "DRX with cell updating".~~
~~12~~	~~→~~		~~UTRAN MOBILITY INFORMATION CONFIRM~~	~~UE shall move to CELL_PCH state after sending this message.~~
~~13~~				~~SS waits for T305 to expire.~~
~~14~~			~~CELL UPDATE~~	
~~15~~			~~CELL UPDATE CONFIRM~~	~~Allocates new common physical resources by specifying IEs "PRACH Info" and "Secondary CCPCH Info".~~
~~16~~			~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~	
11	←		MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 1	SS changes the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents). It waits for 720 minutes and checks that no CELL UPDATE message is transmitted on uplink PRACH channel.

12	←	MASTER INFORMATION BLOCK SYSTEM INFORMATION BLOCK TYPE 1	SS modified the contents of MASTER INFORMATION BLOCK and SYSTEM INFORMATION BLOCK (see specific message contents) again.
13	→	CELL UPDATE	UE shall transmit this message 5 minutes after step 12, with “cell update cause” set to “periodic cell updating”
14	←	CELL UPDATE CONFIRM	

Specific Message Contents

CELL UPDATE (Step 2)

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’
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to ‘FALSE’~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to ‘FALSE’~~
START List	Checked to see if the ‘CN domain identity’ and ‘START’ IEs are present for all CN domains supported by the UE
Cell Update Cause	Check to see if set to ‘Periodic cell updating’
~~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 3 and 13)

Use the same message sub-type found in Annex A.

UTRAN MOBILITY INFORMATION (Step 5~~ and step 11~~)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
- SRNC Identity	Set to ‘0000 0000 0001’
- S-RNTI	Set to ‘0000 0000 0000 0000 1111’
New C-RNTI	Set to ‘0000 0000 0000 1111’
~~DRX Indicator~~RRC State Indicator	~~DRX with cell updating~~CELL_PCH

CELL UPDATE (Step 8)

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 1111'
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
Cell Update Cause	Check to see if set to 'Periodic cell updating'
~~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 9)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
- SRNC Identity	Set to '0000 0000 0001'
- S-RNTI	Set to '0000 0000 0000 0000 1010'
New C-RNTI	Set to '0000 0000 0000 0101'

~~CELL UPDATE (Step 14)~~

~~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 1111'~~
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
~~START List~~	~~Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE~~
~~Cell Update Cause~~	~~Check to see if set to 'Periodic cell updating'~~
~~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 15)~~

~~Use the same message sub-type found in Annex A, with the following exceptions:~~

~~Information Element~~	~~Value/remark~~
~~PRACH Info (for RACH)~~	
~~- Available Signature~~	~~'0000000000000011'B:Signature 0&1~~
~~- Available SF~~	~~Refer to the parameter set for TS 34.108~~
~~- Preamble scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Refer to the parameter set for TS 34.108~~
~~- Available Sub-Channel number~~	~~'000000000011'B:SubChNumber 0&1~~
~~Downlink DPCH info for one radio link~~	
~~- Primary CPICH Info~~	
~~- Primary Scrambling Code~~	~~Set to the scrambling code for cell 1's P-CPICH.~~
~~- PDSCH with SHO DCH Info~~	~~Not Present.~~
~~- PDSCH code mapping~~	~~Not Present.~~
~~- Secondary CCPCH Info~~	
~~- Primary CPICH usage for channel estimation~~	~~TRUE~~
~~- Secondary CPICH Info~~	
~~- Secondary scrambling code~~	~~Not Present. Use default (Scrambling code of P-CPICH)~~
~~- Channelization code~~	~~1~~
~~- Secondary scrambling code~~	~~Not Present. Use default (Scrambling code of P-CPICH)~~
~~- STTD indicator~~	~~FALSE~~
~~- Spreading factor~~	~~256~~
~~- Code number~~	~~255~~
~~- Pilot symbol existence~~	~~TRUE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing Offset~~	~~0 chips~~

MASTER INFORMATION BLOCK (Step 11)

Information Element	Value/remark
MIB Tag	2

SYSTEM INFORMATION BLOCK TYPE 1 (Step 11)

Information Element	Value/remark
UE Timers and constants in connected mode T305	No update Infinity

MASTER INFORMATION BLOCK (Step 12)

Information Element	Value/remark
MIB Tag	1

SYSTEM INFORMATION BLOCK TYPE 1 (Step 12)

Information Element	Value/remark
UE Timers and constants in connected mode T305	5 minutes

8.3.1.4.5 Test requirement

After step 2 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 5 the UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message. It shall subsequently move to CELL_PCH state.

After step 7 the UE shall initiate a cell updating procedure by the transmission of a CELL UPDATE message. In this message, it shall indicate the new U-RNTI value assigned in step 5 and also set IE "Cell Updating Cause" to "Periodical Cell Updating".

Between step 11 and step 12 the UE shall cease periodic cell updating activity and not transmit any CELL UPDATE messages.

After step 12 the UE shall transmit a CELL UPDATE message stating the cell update cause to be periodic updating, 5 minutes after the SS has modified the BCCH data.

~~After step 11 the UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message. It shall subsequently move to CELL_PCH state.~~

~~After step 13 the UE shall send a CELL UPDATE message.After step 15 the UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the new PRACH channel assigned by the received CELL UPDATE CONFIRM message in step 15.~~

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 ~~UL~~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 ~~UL~~uplink data if the UE is in URA_PCH state. To confirm that the UE sends the correct response to CELL UPDATE CONFIRM message, after it has taken into consideration the current TFS and/or TFCS settings.

8.3.1.5.4 Method of test

Initial Condition

System Simulator: 1cell

UE: URA_PCH (state 6-~~16~~13) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE starts from URA_PCH state, after the operator initiates an outgoing packet data transmission. 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 "~~Ul~~uplink -data transmission". After receiving such a message, SS transmits CELL UPDATE CONFIRM message without specifying IE "new C-RNTI" or IE "new U-RNTI" or "CN information elements" or " Physical channel information elements" or "Transport channel information elements" or RB information elements".~~any of the following IEs: "new C-RNTI", "new U-RNTI", "PRACH Info" and "Secondary CCPCH Info".~~ The UE shall stay in CELL_FACH state and transmit ~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~no response message ~~on the DCCH~~. SS waits until uplink data transmission is completed and sends a UTRAN MOBILITY INFORMATION message. The UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message. Since the IE "~~DRX Indicator~~RRC State Indicator" is set to "~~DRX with URA updating~~URA_PCH" in the downlink message, the UE shall move to URA_PCH state. Then SS prompts the test operator to transmit packet data. The UE shall send CELL UPDATE message once more. After the SS receives this message, it replies with a CELL UPDATE CONFIRM message including "Physical channel information elements". The IE "RRC State Indicator" is set to "CELL_FACH" in this message. The UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message. Then the UE shall enter CELL_FACH state and proceed to transmit packet data.~~Next SS modifies the contents of SYSTEM INFORMATION BLOCK TYPE 5 and 6 messages. See specific message contents for further details.~~ Finally, SS ~~then~~ prompts the test operator to transmit packet data once again. The UE shall send CELL UPDATE message and specifies the cause to be "~~Ul~~uplink -data transmission". SS replies with ~~the default~~ CELL UPDATE CONFIRM message ~~defined in TS 34.108~~including "Transport channel information elements". After receiving this message, the UE shall transmit TRANSPORT CHANNEL RECONFIGURATION COMPLETE message and remains in CELL_FACH state. SS again waits for the transmission of user packet data to complete and then sends UTRAN MOBILITY INFORMATION message on the downlink DCCH. The IE "~~DRX Indicator~~RRC State Indicator" is set to "~~DRX with URA updating~~URA_PCH". The UE shall move to URA_PCH state ~~and~~ after it acknowledges that it starts using the new

RNTI identity provided. ~~Finally, SS prompts the test operator to transmit packet data. The UE shall send CELL UPDATE message once more. After the SS receives this message, it replies with a CELL UPDATE CONFIRM message including the IEs "PRACH info" and "Secondary CCPCH info". The IE "DRX Indicator" is set to "No DRX" in this message. The UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink PRACH specified in the CELL UPDATE CONFIRM message. Then the UE shall enter CELL_FACH state and proceed to transmit packet data.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to URA_PCH state. SS prompts the test operator to begin a packet data transmission.
2	→		CELL UPDATE	The UE shall move to CELL FACH state with the message set to "~~UL~~uplink~~-~~ data transmission" in IE "Cell update cause".
3	←		CELL UPDATE CONFIRM	Use default message content.
4	~~—→~~		~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~	SS check that UE does not send response message.
5				SS waits until transmission of uplink data has been completed.
6	←		UTRAN MOBILITY INFORMATION	IE "~~DRX Indicator~~RRC State Indicator" set to "DRX with URA update"
7	→		UTRAN MOBILITY INFORMATION CONFIRM	UE moves to URA_PCH state.
8				SS prompts test operator to initiate a packet data transmission.
9	→		CELL UPDATE	Should be same as in step 2
10	←		CELL UPDATE CONFIRM	Including "Physical channel information elements".
11	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
12				SS waits until transmission of uplink data has been completed.
13	←		UTRAN MOBILITY INFORMATION	IE "RRC State Indicator" set to "DRX with URA update"
14	→		UTRAN MOBILITY INFORMATION CONFIRM	
~~8~~15				~~SS modifies MASTER INFORMATION BLOCK, SYSTEM INFORMATION BLOCK TYPE 5 and 6 messages.~~ SS prompts test operator to initiate a packet data transmission.
~~9~~16	→		CELL UPDATE	Should be same as in step 2
~~10~~17	←		CELL UPDATE CONFIRM	~~Use default message content.~~
~~11~~18	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	
~~12~~				~~SS waits until transmission of uplink data has been completed.~~
~~13~~	~~—←~~		~~UTRAN MOBILITY INFORMATION~~	~~IE "DRX Indicator" set to "DRX with URA update"~~
~~14~~	~~—→~~		~~UTRAN MOBILITY INFORMATION CONFIRM~~	~~UE moves to URA_PCH state.~~
~~15~~				~~SS prompts test operator to initiate a packet data transmission.~~
~~16~~	~~—→~~		~~CELL UPDATE~~	~~Should be same as in step 2~~
~~17~~	~~—←~~		~~CELL UPDATE CONFIRM~~	~~Including the IEs" PRACH info"," Secondary CCPCH"~~

~~18~~	~~→~~	~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~	~~SS verifies that this message is received from PRACH physical channel using the configurations set in IE "PRACH Info" in CELL UPDATE CONFIRM message.~~

Specific Message Contents

CELL UPDATE (Step 2, 9 and 16)

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 1111'
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
Cell Update Cause	Check to see if set to '~~UL~~uplink- d~~D~~ata t~~T~~ransmission'
~~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 3~~ and 10~~)

Use the same message sub-type found in Annex A.

CELL UPDATE CONFIRM (Step 10)

Use the same message sub-type found in step 3, with the following exceptions:

Information Element	**Value/remark**
Maximum allowed uplink TX power	3 dB below the follow value: Minimum of { 33 dBm, maximum uplink power allowed under the UE power class }

CELL UPDATE CONFIRM (Step 17)

Use the same message sub-type found in ~~Annex A~~step 10, with the following exceptions:

Added or Reconfigured uplink TrCH information	1
-Transport channel identity	(This IE is repeated for TFI number)
-TFS	Reference to TS34.108 clause 6.10 Parameter Set
-Dynamic Transport format information	Reference to TS34.108 clause 6.10 Parameter Set
-Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
-RLC size	Reference to TS34.108 clause 6.10 Parameter Set
-Semi-static Transport Format information	Reference to TS34.108 clause 6.10 Parameter Set
-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	

~~Information Element~~	~~Value/remark~~
~~PRACH Info (for RACH)~~	
~~- Available Signature~~	~~'0000000000000001'B:Signature 0~~
~~- Available SF~~	~~Refer to the parameter set for TS 34.108~~
~~- Preamble scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Refer to the parameter set for TS 34.108~~
~~- Available Sub-Channel number~~	~~'000000000001'B:SubChNumber 0~~
~~Downlink DPCH info for one radio link~~	
~~- Primary CPICH Info~~	
~~- Primary Scrambling Code~~	~~Set to the scrambling code for cell 1's P-CPICH.~~
~~- PDSCH with SHO DCH Info~~	~~Not Present.~~
~~- PDSCH code mapping~~	~~Not Present.~~
~~- Secondary CCPCH Info~~	
~~- Primary CPICH usage for channel estimation~~	~~TRUE~~
~~- Secondary CPICH Info~~	
~~- Secondary scrambling code~~	~~Not Present. Use default (Scrambling code of P-CPICH)~~
~~- Channelization code~~	~~1~~
~~- Secondary scrambling code~~	~~Not Present. Use default (Scrambling code of P-CPICH)~~
~~- STTD indicator~~	~~FALSE~~
~~- Spreading factor~~	~~256~~
~~- Code number~~	~~255~~
~~- Pilot symbol existence~~	~~TRUE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing Offset~~	~~0 chips~~

UTRAN MOBILITY INFORMATION (Step 6)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'0000 0000 0000 1111'
~~DRX Indicator~~RRC State Indicator	~~DRX with URA updating~~URA_PCH

UTRAN MOBILITY INFORMATION (Step 13)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'0000 0000 1111 1111'
~~DRX Indicator~~RRC State Indicator	~~DRX with URA updating~~URA_PCH

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step ~~4 and 18~~11)

Only the message type IE in this message will be checked.

TRANSPORT CHANNEL RECONFIGURATION COMPLETE (Step ~~12~~18)

Only the message type IE in this message will be checked.

~~MASTER INFORMATION BLOCK (Step 8)~~

~~Use the same message sub-type found in Clause 6.1 of TS 34.108, with the following exceptions:~~

~~Information Element~~	~~Value/remark~~
~~MIB Tag~~	~~2~~

~~SYSTEM INFORMATION BLOCK TYPE 5 and TYPE 6 (Step 8)~~

~~Use the same message sub-type found in Clause 6.1 of TS34.108, with the following exceptions:~~

~~Information Element~~	~~Value/remark~~
~~PRACH system information~~	
~~- RACH TFS~~	
~~- CHOICE Transport channel type~~	~~Common transport channels~~
~~- Dynamic Transport Format Information~~	
~~- Number of Transport blocks~~	~~1~~
~~- RLC Size~~	~~296 bits~~
~~- Semi-static Transport Format~~	
~~- Transmission time interval~~	~~80 msec~~
~~- Type of channel coding~~	~~No coding~~
~~- Coding Rate~~	~~No Present~~
~~- Rate matching attribute~~	~~1~~
~~- CRC Size~~	~~16 bits~~

8.3.1.5.5 Test requirement

After step 1 the UE shall move to CELL_FACH state to initiate a cell update procedure and transmits a CELL UPDATE message which is set to "~~UL~~uplink~~-~~ data transmission" in IE "Cell update cause".

~~After step 3 the UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.~~

After step 8 the UE shall initiate cell update procedure and transmit CELL UPDATE message on the uplink CCCH. The IE "Cell update cause" shall be set to "~~UL~~uplink~~-~~ data transmission".

After step 10 the UE shall transmit ~~TRANSPORT~~ PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.

After step 15 the UE shall initiate cell update procedure and transmit CELL UPDATE message on the uplink CCCH. The IE "Cell update cause" shall be set to "~~UL~~uplink data transmission".

After step 17 the UE shall transmit ~~PHYSICAL~~ TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH~~ using the PRACH resources assigned in CELL UPDATE CONFIRM, which is sent in step 17~~.

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 ~~UL~~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 ~~UL~~uplink data if the UE is in CELL_PCH state. To confirm that the UE sends the correct response to CELL UPDATE CONFIRM message, after it has taken into consideration the current TFS and/or TFCS settings.

8.3.1.6.4 Method of test

Initial Condition

System Simulator: 1cell

UE: CELL_PCH (state 6~~-15~~12) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the CELL_PCH state. SS asks the test operator to send some packet data. The UE moves to CELL_FACH state and transmits a CELL UPDATE message to the SS on the uplink CCCH, which shall indicate "~~UL~~uplink data transmission" in IE "Cell update cause". After receiving such a message, SS transmits default CELL UPDATE CONFIRM message. The UE shall stay in CELL_FACH state and NOT transmit ~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~response message on the DCCH. SS waits until uplink data transmission is completed and sends a UTRAN MOBILITY INFORMATION message. The UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message. Since the IE "~~DRX Indicator~~RRC State Indicator" is set to "~~DRX with cell updating~~CELL_PCH" in the downlink message, the UE shall move to CELL_PCH state. ~~Next SS modifies the contents of SYSTEM INFORMATION BLOCK TYPE 5 and 6 messages. See specific message contents for further details.~~ SS then prompts the test operator to transmit packet data. The UE shall send CELL UPDATE message and specifies the cause to be "~~UL~~uplink data transmission". SS replies with a CELL UPDATE CONFIRM message which assigns a new C-RNTI to the UE. After receiving this message, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM ~~TRANSPORT CHANNEL RECONFIGURATION COMPLETE~~ message and remains in CELL_FACH state. SS again waits for the transmission of user packet data to complete and then sends UTRAN MOBILITY INFORMATION message on the downlink DCCH. The IE "~~DRX Indicator~~RRC State Indicator" is set to "~~DRX with cell updating~~CELL_PCH". The UE shall move to CELL_PCH state and acknowledges that it starts using the new RNTI identity provided. Finally, SS prompts the test operator to transmit packet data. The UE shall send CELL UPDATE message once more. After the SS receives this message, it transmits a CELL UPDATE CONFIRM message which includes the "Physical channel information elements" ~~IEs "PRACH info"~~ and set IE "~~DRX Indicator~~RRC State Indicator" to "~~No DRX~~CELL_FACH". Then the UE shall enter to the CELL_FACH state after sending PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_PCH state. SS prompts the test operator to initiate a packet data call.
2	→		CELL UPDATE	The UE moves to CELL FACH state and transmit this message which is set to "~~UL~~uplink data transmission" in IE "Cell update cause".
3	←		CELL UPDATE CONFIRM	Use default message content.
4	→		~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~	
5				SS waits until transmission of uplink data has been completed.
6	←		UTRAN MOBILITY INFORMATION	IE "~~DRX Indicator~~RRC State Indicator" set to "DRX with cell update"
7	→		UTRAN MOBILITY INFORMATION CONFIRM	UE moves to CELL_PCH state.
8				~~SS modifies MASTER INFORMATION BLOCK, SYSTEM INFORMATION BLOCK TYPE 5 and 6 messages.~~ SS prompts test operator to initiate a packet data transmission.
9	→		CELL UPDATE	Should be same as in step 2
10	←		CELL UPDATE CONFIRM	Including the IE "new C-RNTI".~~Use default message content.~~
11	→		UTRAN MOBILITY INFORMATION CONFIRM~~TRANSPORT CHANNEL RECONFIGURATION COMPLETE~~	
12				SS waits until transmission of uplink data has been completed.
13	←		UTRAN MOBILITY INFORMATION	IE "~~DRX Indicator~~RRC State Indicator" set to "DRX with cell update"
14	→		UTRAN MOBILITY INFORMATION CONFIRM	UE moves to CELL_PCH state.
15				SS prompts test operator to initiate a packet data transmission.
16	→		CELL UPDATE	Should be same as in step 2
17	←		CELL UPDATE CONFIRM	Including the "Physical channel information elements"~~IE "PRACH info" and set IE "DRX Indicator" to "No DRX"~~.
18	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	~~SS verifies that this message is received from PRACH physical channel using the configurations set in IE "PRACH Info" in CELL UPDATE CONFIRM message.~~

Specific Message Contents

CELL UPDATE (Step 2, 9 and 16)

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 1111'
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
Cell Update Cause	Check to see if set to '~~UL~~uplink ~~D~~data ~~T~~transmission'
~~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 3~~ and 10~~)

Use the same message sub-type found in Annex A.

CELL UPDATE CONFIRM (Step 10)

Use the same message sub-type found in step 3, with the following exceptions:

Information Element	**Value/remark**
New C-RNTI	'0000 0000 1111 0000'

CELL UPDATE CONFIRM (Step 17)

Use the same message sub-type found in ~~Annex A~~step 3, with the following exceptions:

Maximum allowed uplink TX power	3 dB below the follow value: Minimum of {33 dBm, maximum uplink power allowed under the UE power class }

~~Information Element~~	~~Value/remark~~
~~PRACH Info (for RACH)~~	
~~- Available Signature~~	~~'0000000000000001'B:Signature 0~~
~~- Available SF~~	~~Refer to the parameter set for TS 34.108~~
~~- Preamble scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Refer to the parameter set for TS 34.108~~
~~- Available Sub-Channel number~~	~~'000000000001'B:SubChNumber 0~~
~~Downlink DPCH info for one radio link~~	
~~- Primary CPICH Info~~	
~~- Primary Scrambling Code~~	~~Set to the scrambling code for cell 1's P-CPICH.~~
~~- PDSCH with SHO DCH Info~~	~~Not Present.~~
~~- PDSCH code mapping~~	~~Not Present.~~
~~- Secondary CCPCH Info~~	
~~- Primary CPICH usage for channel estimation~~	~~TRUE~~
~~- Secondary CPICH Info~~	
~~- Secondary scrambling code~~	~~Not Present. Use default (Scrambling code of P-CPICH)~~
~~- Channelization code~~	~~1~~
~~- Secondary scrambling code~~	~~Not Present. Use default (Scrambling code of P-CPICH)~~
~~- STTD indicator~~	~~FALSE~~
~~- Spreading factor~~	~~256~~
~~- Code number~~	~~255~~
~~- Pilot symbol existence~~	~~TRUE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing Offset~~	~~0 chips~~

UTRAN MOBILITY INFORMATION (Step 6)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'0000 0000 0000 1111'
~~DRX Indicator~~RRC State Indicator	~~DRX with cell updating~~CELL_PCH

UTRAN MOBILITY INFORMATION (Step 13)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New C-RNTI	'0000 0000 1111 1111'
~~DRX Indicator~~RRC State Indicator	~~DRX with cell updating~~CELL_PCH

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step ~~4 and~~ 18)

Only the message type IE in this message will be checked.

~~TRANSPORT CHANNEL RECONFIGURATION COMPLETE (Step 12)~~

~~Only the message type IE in this message will be checked.~~

~~MASTER INFORMATION BLOCK (Step 8)~~

~~Use the same message sub-type found in Clause 6.1 of TS 34.108, with the following exceptions:~~

~~Information Element~~	~~Value/remark~~
~~MIB Tag~~	~~2~~

~~SYSTEM INFORMATION BLOCK TYPE 5 and TYPE 6 (Step 8)~~

~~Use the same message sub-type found in Clause 6.1 of TS 34.108, with the following exceptions:~~

~~Information Element~~	~~Value/remark~~
~~PRACH system information~~	
~~- RACH TFS~~	
~~- CHOICE Transport channel type~~	~~Common transport channels~~
~~- Dynamic Transport Format Information~~	
~~- Number of Transport blocks~~	~~1~~
~~- RLC Size~~	~~296 bits~~
~~- Semi-static Transport Format~~	
~~- Transmission time interval~~	~~80 msec~~
~~- Type of channel coding~~	~~No coding~~
~~- Coding Rate~~	~~No Present~~
~~- Rate matching attribute~~	~~1~~
~~- CRC Size~~	~~16 bits~~

8.3.1.6.5 Test requirement

After step 1 the UE shall move to CELL_FACH state, initiate a cell update procedure for the UL data transmission, and transmit a CELL UPDATE message which is set to "~~UL~~uplink data transmission" in IE "Cell update cause".

~~After step 3 the UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.~~

After step 8 the UE shall initiate cell update procedure and transmit CELL UPDATE message on the uplink CCCH. The IE "Cell update cause" shall be set to "~~UL~~uplink data transmission".

After step 10 the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM~~TRANSPORT CHANNEL RECONFIGURATION COMPLETE~~ message on the uplink DCCH.

After step 15 the UE shall initiate cell update procedure and transmit CELL UPDATE message on the uplink CCCH. The IE "Cell update cause" shall be set to "~~UL~~uplink data transmission".

After step 17 the UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH~~ using the PRACH resources assigned in CELL UPDATE CONFIRM, which is sent in step 17~~.

8.3.1.7 Cell Update: paging response in URA_PCH

8.3.1.7.1 Definition

8.3.1.7.2 Conformance requirement

This procedure is to update UTRAN with the current cell of the UE after it receives a PAGING TYPE 1 message addressed to itself while it is in URA_PCH state.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.7.3 Test purpose

To confirm that the UE executes a cell update procedure when it receives a PAGING TYPE 1 message while operating in URA_PCH state. To confirm that the UE responds with an appropriate uplink message after receiving a CELL UPDATE CONFIRM message during cell updating procedure triggered by paging.

8.3.1.7.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-~~16~~13) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is brought to URA_PCH state. SS transmits a PAGING TYPE 1 message to page for the UE, setting IE "paging originator" to "UTRAN Originator". The UE shall move to CELL_FACH state and transmits a CELL UPDATE message to the SS on the uplink CCCH. This message shall set IE "Cell update cause" to "Paging Response". After the SS receives this message, it transmits the default CELL UPDATE CONFIRM message. The UE shall stay in CELL_FACH state and not transmit ~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~response message ~~on the DCCH~~. SS then sends a UTRAN MOBILITY INFORMATION message. ~~The UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message.~~ In this message, the IE "~~DRX Indicator~~RRC State Indicator" is set to "~~DRX with URA updating~~URA_PCH". As a result, the UE shall reply with UTRAN MOBILITY INFORMATION and move to URA_PCH state. Next SS modifies the contents of SYSTEM INFORMATION BLOCK TYPE 5 and 6 messages. See specific message contents for further details. SS pages the UE again using PAGING TYPE 1 message. The UE shall send CELL UPDATE message once more. SS transmits a CELL UPDATE CONFIRM message which includes the IEs "new C-RNTI", "new U-RNTI" on the downlink DCCH. The UE shall send UTRAN MOBILITY INFORMATION CONFIRM message. In the next sequence, SS transmits UTRAN MOBILITY INFORMATION message and assigns a new C-RNTI identity to the UE. In this message, the IE "RRC State Indicator" is set to "URA_PCH". The UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message and move to URA_PCH state. SS then pages the UE once more using PAGING TYPE 1 message. The UE shall initial the cell update procedure by dispatching a CELL UPDATE message on the uplink CCCH. SS replies with a CELL UPDATE CONFIRM message which includes "Physical channel information elements". The UE shall respond with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE. SS sends another UTRAN MOBILITY INFORMATION message on the downlink DCCH, with the IE"RRC State Indicator" set to "URA_PCH". The UE shall move to URA_PCH state and acknowledges that it starts using the new C-RNTI identity provided by transmitting UTRAN MOBILITY INFORMATION CONFIRM message. SS pages the UE again using the U-RNTI identity. The UE shall send CELL UPDATE message and specify the cause to be "Paging Response". SS replies with ~~the default~~ CELL UPDATE CONFIRM message which includes "Transport channel information elements"~~again~~. After receiving this message, the UE shall transmit TRANSPORT CHANNEL RECONFIGURATION COMPLETE message and remains in CELL_FACH state. ~~SS sends another UTRAN MOBILITY INFORMATION message on the downlink DCCH, with the IE "DRX Indicator" set to "DRX with URA updating". The UE shall move to URA_PCH state and acknowledges that it starts using the new C-RNTI identity provided by transmitting UTRAN MOBILITY INFORMATION CONFIRM message. SS pages the UE again using PAGING TYPE 1 message. The UE shall send CELL UPDATE message once more. SS transmits a CELL UPDATE CONFIRM message which includes the IEs "new C-RNTI", "new U-RNTI" on the downlink DCCH. The UE shall send PHYSICAL CHANNEL RECONFIGURATION COMPLETE message. In the next sequence, SS transmits UTRAN MOBILITY INFORMATION message and assigns a new C-RNTI identity to the UE. The UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message and move to URA_PCH state. SS then pages the UE once more using PAGING TYPE 1 message. The UE shall initial the cell update procedure by dispatching a CELL UPDATE message on the uplink CCCH. SS replies with a CELL UPDATE CONFIRM message which includes information of the PRACH channel to be used. The UE shall respond with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE, sent on the DCCH supported by the PRACH indicated in CELL UPDATE CONFIRM message.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is first brought to URA_PCH state.
2	←		PAGING TYPE 1	SS transmits a PAGING TYPE 1 message to the UE which includes the UE's assigned U-RNTI with the IE "paging originator" set to "UTRAN originator".
3	→		CELL UPDATE	The UE shall move to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "paging response".
4	←		CELL UPDATE CONFIRM	Use the default message from TS 34.108 Clause 8.
5	~~—→~~		~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~	The UE shall ~~move to CELL_FACH state and~~not transmits ~~this~~ response message.
6	←		UTRAN MOBILITY INFORMATION	Allocates a new C-RNTI and set IE "~~DRX Indicator~~RRC State Indicator" to "~~DRX with URA updating~~URA_PCH".
7	→		UTRAN MOBILITY INFORMATION CONFIRM	UE moves to URA_PCH state.
8				SS modifies MASTER INFORMATION BLOCK, SYSTEM INFORMATION BLOCK TYPE 5 and 6 messages. The TFS of the PRACH is changed.
9	←		PAGING TYPE 1	SS pages the UE again
10	→		CELL UPDATE	IE "Cell update cause" shall be set to "paging response".
11	←		CELL UPDATE CONFIRM	Includes IE "new C-RNTI" and "new U-RNTI".~~Use the default message from TS 34.108 Clause 8.~~
12	→		UTRAN MOBILITY INFORMATION CONFIRM~~TRANSPORT CHANNEL RECONFIGURATION COMPLETE~~	~~The UE shall move to CELL_FACH state and transmits this message.~~
13	←		UTRAN MOBILITY INFORMATION	Allocates a new C-RNTI and set IE "~~DRX Indicator~~RRC State Indicator" to "~~DRX with URA updating~~URA_PCH".
14	→		UTRAN MOBILITY INFORMATION CONFIRM	UE moves to URA_PCH state.
15	←		PAGING TYPE 1	SS pages the UE again
16	→		CELL UPDATE	IE "Cell update cause" shall be set to "paging response".
17	←		CELL UPDATE CONFIRM	"Physical channel information elements"~~IE "new C-RNTI"~~ is included in this message
18	→		PHYSICAL CHANNEL RECONFIGURATION COMPLETE	
19	←		UTRAN MOBILITY INFORMATION	Allocates a new C-RNTI and set IE "~~DRX Indicator~~RRC State Indicator" to "~~DRX with URA updating~~URA_PCH".
20	→		UTRAN MOBILITY INFORMATION CONFIRM	UE moves to URA_PCH state.

21	←	PAGING TYPE 1	UE paged using U-RNTI identity.
22	→	CELL UPDATE	IE "Cell Update Cause" shall be set to "Paging Response"
23	←	CELL UPDATE CONFIRM	"Transport channel information elements"~~IE "PRACH Info"~~ is included.
24	→	~~PHYSICAL~~ TRANSPORT CHANNEL RECONFIGURATION COMPLETE	This message shall be sent on the PRACH resource allocated in step 23.

Specific Message Contents

PAGING TYPE 1 (Step 2~~, 9, 15~~ and ~~21~~9)

Information Element	Value/remark
CHOICE Paging Originator	UTRAN Originator
- U-RNTI	
- SRNC Identity	'0000 0000 0001'
- S-RNTI	'0000 0000 0000 0000 0001'

PAGING TYPE 1 (Step 15 and 21)

Information Element	Value/remark
CHOICE Paging Originator	UTRAN Originator
- U-RNTI	
- SRNC Identity	'0000 0000 0001'
- S-RNTI	Check to see if set to value provided in step 11

CELL UPDATE (Step 3~~, 10, 16~~ and ~~22~~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'
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
Cell Update Cause	Check to see if set to 'Paging Response'
~~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 (Step 16 and 22)

Information Element	Value/remark
U-RNTI	
- SRNC Identity	Check to see if set to '0000 0000 0001'
- S-RNTI	Check to see if set to value provided in step 11
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
Cell Update Cause	Check to see if set to 'Paging Response'

CELL UPDATE CONFIRM (Step 4~~ and 11~~)

Use the same message sub-type found in Annex A.

CELL UPDATE CONFIRM (Step 11)

Use the same message sub-type found in step 4, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
- SRNC Identity	'0000 0000 0000 0001'
- S-RNTI	An arbitrary 20-bits string which is different from original S-RNTI
New C-RNTI	An arbitrary 16-bits string which is different from original C-RNTI.

PHYSICAL CHANNEL RECONFIGURATION (Step ~~5,~~ 18 ~~and 24~~)

Only the message type for this message is checked.

MASTER INFORMATION BLOCK (Step 8)

Use the same message sub-type found in Clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
MIB Tag	2

SYSTEM INFORMATION BLOCK TYPE 5 and TYPE 6 (Step 8)

Use the same message sub-type found in Clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
PRACH system information	
- RACH TFS	
- CHOICE Transport channel type	Common transport channels
- Dynamic Transport Format Information	
- Number of Transport blocks	1
- RLC Size	296 bits
- Semi-static Transport Format	
- Transmission time interval	80 msec
- Type of channel coding	No coding
- Coding Rate	No Present
- Rate matching attribute	1
- CRC Size	16 bits

UTRAN MOBILITY INFORMATION (Step 6, 13 and 19)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New C-RNTI	Selects any arbitrary unused 16-bits string
~~DRX Indicator~~RRC State Indicator	~~DRX with URA updating~~URA_PCH

TRANSPORT CHANNEL RECONFIGURATION COMPLETE(Step ~~12~~24)

Only the message type for this message is checked.

CELL UPDATE CONFIRM (Step 17)

~~Information Element~~	~~Value/remark~~
~~New C-RNTI~~	~~Selects any arbitrary unused 16-bits string~~

Use the same message sub-type found in step 11, with the following exceptions:

Maximum allowed uplink TX power	3 dB below the follow value: Minimum of {33 dBm, maximum uplink power allowed under the UE power class }

CELL UPDATE CONFIRM (Step 23)

Use the same message sub-type found in ~~Annex A~~step 17, with the following exceptions:

Information Element	Value/remark
Added or Reconfigured UL TrCH information	
-Transport channel identity	1
-TFS	(This IE is repeated for TFI number) Reference to TS34.108 clause 6.10 Parameter Set
-Dynamic Transport format information	Reference to TS34.108 clause 6.10 Parameter Set
-Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
-RLC size	Reference to TS34.108 clause 6.10 Parameter Set
-Semi-static Transport Format information	Reference to TS34.108 clause 6.10 Parameter Set
-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
~~PRACH Info (for RACH)~~	
~~- Available Signature~~	~~'0000000000000010'B:Signature 1~~
~~- Available SF~~	~~Refer to the parameter set for TS 34.108~~
~~- Preamble scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Refer to the parameter set for TS 34.108~~
~~- Available Sub-Channel number~~	~~'000000000010'B:SubChNumber 1~~
~~Downlink DPCH info for one radio link~~	
~~- Primary CPICH Info~~	
~~- Primary Scrambling Code~~	~~Set to the scrambling code for cell 1's P-CPICH.~~
~~- PDSCH with SHO DCH Info~~	~~Not Present.~~
~~- PDSCH code mapping~~	~~Not Present.~~
~~- Secondary CCPCH Info~~	
~~- Primary CPICH usage for channel estimation~~	~~TRUE~~
~~- Secondary CPICH Info~~	
~~- Secondary scrambling code~~	~~Not Present. Use default (Scrambling code of P-CPICH)~~
~~- Channelization code~~	~~1~~
~~- Secondary scrambling code~~	~~Not Present. Use default (Scrambling code of P-CPICH)~~
~~- STTD indicator~~	~~FALSE~~
~~- Spreading factor~~	~~256~~
~~- Code number~~	~~255~~
~~- Pilot symbol existence~~	~~TRUE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing Offset~~	~~0 chips~~

8.3.1.7.5 Test requirement

After step 2 the UE shall answer to the paging message then moves to CELL_FACH state and transmit a CELL UPDATE message. This message shall set the value "paging response" into IE "Cell update cause".

~~After step 4 the UE shall transmit PHYSICAL CHANNEL RECONFIGURTION COMPLETE message on the uplink DCCH and enters CELL_FACH state.~~

After step 9 the UE shall respond the paging by replying with a CELL UPDATE message. IE “Cell Update Cause” shall be set to “Paging Response” in this message.

After step 11 the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM~~TRANSPORT CHANNEL RECONFIGURATION COMPLETE~~ message on the uplink DCCH.

After step 15 the UE shall answer the PAGING TYPE 1 message by sending a CELL UPDATE message. The IE “Cell Update Cause” shall have a value equals to “Paging Response”.

After step 17 the UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH.

After step 21 the UE shall respond to the PAGING TYPE 1 message addressed to itself and initiate a cell update procedure. It shall transmit CELL UPDATE message with the IE “Cell Update Cause” set to “Paging Response” in this message.

After step 23 the UE shall send TRANSPORT ~~PHYSICAL~~ CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH~~ using the PRACH channel indicated in CELL UPDATE CONFIRM message sent in step 23~~.

8.3.1.8 Cell Update: paging response in CELL_PCH

8.3.1.8.1 Definition

8.3.1.8.2 Conformance requirement

This procedure is to update UTRAN with the current cell when the UE receives a PAGING TYPE 1 message addressed to it while in CELL_PCH state.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.8.3 Test purpose

To confirm that the UE executes a cell update procedure when the UE receives a PAGING TYPE 1 message while in CELL_PCH state. To confirm that the UE sends an appropriate uplink message after receiving a CELL UPDATE CONFIRM message during cell updating procedure due to paging.

8.3.1.8.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: CELL_PCH (state 6~~-15~~12) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the CELL_PCH state. The SS transmits a PAGING TYPE 1 message to the UE on the downlink PCCH which includes the connected mode identity of the UE and set value “UTRAN originator” into IE “paging originator”. The UE shall respond to this message. Then the UE shall move to CELL_FACH state and transmits a CELL UPDATE message to the SS on the uplink CCCH which and set the value “Paging Response” into IE “Cell update cause”. After the SS receives this message, it transmits the default CELL UPDATE CONFIRM message. The UE shall stay in CELL_FACH state and not transmit ~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~ response message on the DCCH. Next SS modifies the contents of SYSTEM INFORMATION BLOCK TYPE 5 and 6 messages. See specific message contents for further details. SS then sends a UTRAN MOBILITY INFORMATION message on the downlink DCCH, with the IE “~~DRX Indicator~~RRC State Indicator” set to “~~DRX with cell updating~~CELL_PCH”. The UE ~~shall move to CELL_PCH state and~~ acknowledges that it starts using the new C-RNTI identity provided by transmitting UTRAN MOBILITY INFORMATION CONFIRM message and moves to CELL_PCH state. SS pages the UE again using PAGING TYPE 1 message. The UE shall send CELL UPDATE message once more. SS replies with a

CELL UPDATE CONFIRM message which includes the IE "new C-RNTI" to the UE on the downlink DCCH. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM ~~TRANSPORT CHANNEL RECONFIGURTION COMPLETE~~ message on the uplink DCCH and enters the CELL_FACH state. In the final sequence, SS transmits UTRAN MOBILITY INFORMATION message and assigns a new C-RNTI identity to the UE. The UE shall reply with UTRAN MOBILITY INFORMATION CONFIRM message and move to CELL_PCH state. SS then pages the UE once more using PAGING TYPE 1 message. The UE shall initial the cell update procedure by dispatching a CELL UPDATE message on the uplink CCCH. SS replies with a CELL UPDATE CONFIRM message which includes the ~~IE~~ "Physical channel information elements~~PRACH Info~~". The UE shall respond with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE, sent on the DCCH ~~supported by the PRACH indicated in CELL UPDATE CONFIRM message~~. Next, SS sends UTRAN MOBILITY INFORMATION message to UE with the "~~DRX Indicator~~RRC State Indicator" IE set to "~~DRX with cell updating~~CELL_PCH". The UE shall respond by transmitting UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH and then move to CELL_PCH state. SS pages the UE again using connected mode identity at the paging occasions assigned to the UE. The UE shall answer to the page and sent CELL UPDATE message on the uplink CCCH. SS responds to the reception of this message by transmitting a CELL UPDATE CONFIRM message on the downlink DCCH. In this message, "Transport channel information elements"~~a set of new PRACH resources~~ is assigned. The UE shall acknowledge the receipt of this message and send ~~PHYSICAL~~ TRANSPORT CHANNEL RECONFIGURATION COMPLETE on the uplink DCCH ~~supported by the new PRACH channel~~.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_PCH state.
2		←	PAGING TYPE 1	The SS transmits a PAGING TYPE 1 message addressing the UE with its connected mode identity and set IE "paging originator" to "UTRAN originator".
3		→	CELL UPDATE	The UE shall move to CELL_FACH state and transmits this message with the IE "Cell update cause" set to "paging response".
4		←	CELL UPDATE CONFIRM	Use the default message from TS 34.108 Clause 8.
5		→	~~PHYSICAL CHANNEL RECONFIGURATION COMPLETE~~	The UE shall ~~move to CELL_FACH state and~~ transmits ~~this~~ response message.
6				SS modifies the contents of MASTER INFORMATION BLOCK, SYSTEM INFORMATION BLOCK TYPE 5 and 6 messages.
7		←	UTRAN MOBILITY INFORMATION	Allocates a new C-RNTI and set IE "~~DRX Indicator~~RRC State Indicator" to "~~DRX with cell updating~~CELL_PCH"
8		→	UTRAN MOBILITY INFORMATION CONFIRM	UE moves to CELL_PCH state
9		←	PAGING TYPE 1	SS pages the UE again
10		→	CELL UPDATE	IE " Cell update cause" shall be set to "paging response"
11		←	CELL UPDATE CONFIRM	Contains the IE "new C-RNTI"
12	→		UTRAN MOBILITY INFORMATION CONFIRM~~TRANSPORT CHANNEL RECONFIGURATION COMPLETE~~	~~The UE shall move to CELL_FACH state and transmit this message.~~
13		←	UTRAN MOBILITY INFORMATION	Allocates a new C-RNTI and set IE "~~DRX Indicator~~RRC State Indicator" to "~~DRX with cell updating~~CELL_PCH".
14		→	UTRAN MOBILITY INFORMATION CONFIRM	UE moves to CELL_PCH state.
15		←	PAGING TYPE 1	SS pages the UE again
16		→	CELL UPDATE	IE "Cell update cause" shall be set to "paging response".
17		←	CELL UPDATE CONFIRM	Including "Physical channel information elements"~~IE "PRACH Info"~~ in this message.
18		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	To be sent on the new PRACH channel.
19		←	UTRAN MOBILITY INFORMATION	Allocates a new C-RNTI and set IE "~~DRX Indicator~~RRC State Indicator" to "~~DRX with~~
20		→	UTRAN MOBILITY INFORMATION CONFIRM	UE moves to CELL_PCH state.
21		←	PAGING TYPE 1	UE paged using U-RNTI identity.
22		→	CELL UPDATE	IE "Cell Update Cause" shall be set to "Paging Response"

23	←	CELL UPDATE CONFIRM	"Transport channel information elements"~~IE "PRACH Info"~~ is included.
24	→	~~PHYSICAL~~ TRANSPORT CHANNEL RECONFIGURATION COMPLETE	~~This message shall be sent on the PRACH resource allocated in step 23.~~

Specific Message Contents

PAGING TYPE 1

Information Element	Value/remark
CHOICE Paging Originator - U-RNTI - SRNC Identity - S-RNTI	UTRAN Originator '0000 0000 0001' '0000 0000 0000 0000 0001'

CELL UPDATE (Step 3, 10 and 16)

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI ~~Integrity check info~~ ~~AM_RLC error indicator (for C-plane)~~ ~~AM_RLC error indicator (for U-plane)~~ START List Cell Update Cause ~~Protocol error indicator~~ ~~Measured results on RACH~~ ~~Protocol error information~~	 Check to see if set to '0000 0000 0001' Check to see if set to '0000 0000 0000 0000 0001' ~~Not checked~~ ~~Check to see if set to 'FALSE'~~ ~~Check to see if set to 'FALSE'~~ Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE Check to see if set to 'Paging Response' ~~Check to see if it is absent or set to 'FALSE'~~ ~~Check to see if it is absent~~ ~~Check to see if it is absent~~

CELL UPDATE CONFIRM (Step 4)

Use the same message sub-type found Annex A.

CELL UPDATE CONFIRM (Step 11)

Use the same message sub-type found in step 4, with the following exceptions:

Information Element	Value/remark
New C-RNTI	An arbitrary 16-bits string which is different from original C-RNTI.

PHYSICAL CHANNEL RECONFIGURATION COMPLETE (Step ~~5 and~~ 18)

Only the message type for this message is checked.

MASTER INFORMATION BLOCK (Step 6)

Use the same message sub-type found in Clause 6.1 of TS 34.108, with the following exceptions:

Information Element	Value/remark
MIB Tag	2

SYSTEM INFORMATION BLOCK TYPE 5 and TYPE 6 (Step 6)

Use the same message sub-type found in Clause 6.1 of TS34.108, with the following exceptions:

Information Element	Value/remark
PRACH system information - RACH TFS - CHOICE Transport channel type - Dynamic Transport Format Information - Number of Transport blocks - RLC Size - Semi-static Transport Format - Transmission time interval - Type of channel coding - Coding Rate - Rate matching attribute - CRC Size	 Common transport channels 1 296 bits 80 msec No coding No Present 1 16 bits

UTRAN MOBILITY INFORMATION (Step 7 ,13 and 19)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
New C-RNTI ~~DRX Indicator~~RRC State Indicator	Selects any arbitrary unused 16-bits string ~~DRX with cell updating~~CELL_PCH

TRANSPORT CHANNEL RECONFIGURATION COMPLETE (Step ~~12~~24)

Only the message type for this message is checked.

CELL UPDATE CONFIRM (Step 17)

Use the same message sub-type found in ~~Annex A~~step 11, with the following exceptions:

~~Information Element~~	~~Value/remark~~
~~PRACH Info (for RACH)~~ ~~- Available Signature~~ ~~- Available SF~~ ~~- Preamble scrambling code number~~ ~~- Puncturing Limit~~ ~~- Available Sub-Channel number~~ ~~Downlink DPCH info for one radio link~~ ~~- Primary CPICH Info~~ ~~- Primary Scrambling Code~~ ~~- PDSCH with SHO DCH Info~~ ~~- PDSCH code mapping~~ ~~- Secondary CCPCH Info~~ ~~- Primary CPICH usage for channel estimation~~ ~~- Secondary CPICH Info~~ ~~- Secondary scrambling code~~ ~~- Channelization code~~ ~~- Secondary scrambling code~~ ~~- STTD indicator~~ ~~- Spreading factor~~ ~~- Code number~~ ~~- Pilot symbol existence~~ ~~- TFCI existence~~ ~~- Fixed or Flexible Position~~ ~~- Timing Offset~~	 ~~'0000000000000100'B:Signature 2~~ ~~Refer to the parameter set for TS 34.108~~ ~~0~~ ~~Refer to the parameter set for TS 34.108~~ ~~'000000000100'B:SubChNumber 2~~ ~~Set to the scrambling code for cell 1's P-CPICH.~~ ~~Not Present.~~ ~~Not Present.~~ ~~TRUE~~ ~~Not Present. Use default (Scrambling code of P-CPICH)~~ ~~1~~ ~~Not Present. Use default (Scrambling code of P-CPICH)~~ ~~FALSE~~ ~~256~~ ~~255~~ ~~TRUE~~ ~~TRUE~~ ~~Flexible~~ ~~0 chips~~
Maximum allowed uplink TX power	3 dB below the follow value: Minimum of {33 dBm, maximum uplink power allowed under the UE power class }

CELL UPDATE CONFIRM (Step 23)

Use the same message sub-type found in ~~Annex A~~step 17, with the following exceptions:

Information Element	Value/remark
Added or Reconfigured UL TrCH information	
-Transport channel identity	1
-TFS	(This IE is repeated for TFI number) Reference to TS34.108 clause 6.10 Parameter Set
-Dynamic Transport format information	Reference to TS34.108 clause 6.10 Parameter Set
-Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
-RLC size	Reference to TS34.108 clause 6.10 Parameter Set
-Semi-static Transport Format information	Reference to TS34.108 clause 6.10 Parameter Set Reference to TS34.108 clause 6.10 Parameter Set Reference to TS34.108 clause 6.10 Parameter Set
-Transmission time interval	~~'0000000000000010'B:Signature 1~~ ~~Refer to the parameter set for TS 34.108~~
-Type of channel coding	~~0~~ ~~Refer to the parameter set for TS 34.108~~
-Coding Rate	~~'000000000010'B:SubChNumber 1~~
-Rate matching attribute	~~Set to the scrambling code for cell 1's P-CPICH.~~
-CRC size	~~Not Present.~~ ~~Not Present.~~
~~PRACH Info (for RACH)~~	~~TRUE~~
~~- Available Signature~~	
~~- Available SF~~	~~Not Present. Use default (Scrambling code of P-CPICH)~~
~~- Preamble scrambling code number~~	~~1~~
~~- Puncturing Limit~~	~~Not Present. Use default (Scrambling code of P-CPICH)~~
~~- Available Sub-Channel number~~	~~FALSE~~
~~Downlink DPCH info for one radio link~~	~~256~~
~~- Primary CPICH Info~~	~~255~~
~~- Primary Scrambling Code~~	~~TRUE~~
~~- PDSCH with SHO DCH Info~~	~~TRUE~~
~~- PDSCH code mapping~~	~~Flexible~~
~~- Secondary CCPCH Info~~	~~0 chips~~
~~- Primary CPICH usage for channel estimation~~	
~~- Secondary CPICH Info~~	
~~- Secondary scrambling code~~	
~~- Channelization code~~	
~~- Secondary scrambling code~~	
~~- STTD indicator~~	
~~- Spreading factor~~	
~~- Code number~~	
~~- Pilot symbol existence~~	
~~- TFCI existence~~	
~~- Fixed or Flexible Position~~	
~~- Timing Offset~~	

8.3.1.8.5 Test requirement

After step 2 the UE shall answer to the paging message, moves to CELL_FACH state, and then transmits a CELL UPDATE message setting "paging response" into IE "Cell update cause".

~~After step 4 the UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH and then enter CELL_FACH state.~~

After step 9 the UE shall respond to the paging again by sending CELL UPDATE message, with the IE "Cell update cause" set to "Paging response".

After step 11 the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM~~TRANSPORT CHANNEL RECONFIGURATION COMPLETE~~ message to end the cell updating procedure.

After step 15 the UE shall answers the paging message by sending a CELL UPDATE message, with the IE "Cell update cause" set to "Paging response".

After step 17 the UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH ~~carried by the PRACH indicated in the CELL UPDATE CONFIRM message sent in step 17~~.

After step 21 the UE shall respond to the paging and initiate a cell update procedure. It shall transmit CELL UPDATE message with the IE "Cell Update Cause" set to "Paging Response" in this message.

After step 23 the UE shall send ~~PHYSICAL~~ TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH ~~using the PRACH channel indicated in CELL UPDATE CONFIRM message sent in step 23~~.

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: ~~2 cells – Cell 1 is active with the CPICH Ec/No set to –80dB and the $Q_{qualmin}$ value is at –90dBm. Cell 2 is inactive.~~1 cell.

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

Test Procedure

The UE is in the CELL_FACH state. SS decreases the transmission power of cell 1 until the cell selection parameter S<0 (decrease transmission power of cell 1's CPICH by 15 dBm). 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, the SS restores the transmission power of cell 1. The UE shall find that it is back in service area, 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 with the IE "~~DRX Indicator~~RRC State Indicator" set "~~No DRX~~CELL_PCH" on the downlink DCCH. The UE shall enter CELL_~~FACH~~ PCH state. SS decreases the transmission power of cell 1 until the cell selection parameter 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, the SS restores the transmission power of cell 1. 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.~~Next, cell 1 is switched off. SS waits until T305 timer has expired and then turns on cell 2. The transmission level for cell 2 is such that the CPICH Ec/No value is estimated at –70dB. $Q_{qualmin}$ of cell 2 is~~

~~identical to the value used previously by cell 1. The UE shall discover that cell 1 is no longer suitable for camping and initiate a cell search. It shall detect the presence of cell 2 and reselects to this cell. Following this, it shall transmit CELL UPDATE message with the cause set to "Cell Reselection". SS ends this test by sending a CELL UPDATE CONFIRM message.~~

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state of cell 1.
2				SS decreases the transmission power of cell 1 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 restores cell 1's original power level before T307 timer expires.
5	→		CELL UPDATE	The value "re-entered service area" should be found in IE "Cell update cause" in this message
6	←		CELL UPDATE CONFIRM	"~~DRX Indicator~~RRC State Indicator" is set to "~~No DRX~~CELL_PCH"
7				SS decreases the transmission power of cell 1 so that its S value falls below 0~~switches off cell 1~~ and wait until T305 has expired.
8				SS restores cell 1's original power level before T307 timer expires.~~turns on cell 2 and set the transmission strength of such that CPICH Ec/No is at –70dB.~~
9	→		CELL UPDATE	UE shall ~~detect the presence of cell 2 and re-select to it~~move to CELL_FACH. It shall transmit this message with cause set to "~~Cell Reselection~~re-entered service area"
10	←		CELL UPDATE CONFIRM	

Specific Message Contents

CELL UPDATE (Step 5 and 9)

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 1111'
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
Cell Update Cause	Check to see if set to 're-entered service area'
~~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 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

~~CELL UPDATE (Step 9)~~

~~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 1111'~~
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
~~START List~~	~~Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE~~
~~Cell Update Cause~~	~~Check to see if set to 'Cell Reselection'~~
~~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~~

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 ~~reselect to cell 2~~move to CELL_FACH and then transmit a CELL UPDATE message, with the IE "Cell Update Cause" set to "~~Cell Reselection~~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: CELL_PCH (state 6-~~15~~12) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in CELL_PCH state at the start of the test. Before the expiry of periodic cell updating timer T305, SS starts to decrease the downlink transmission power such that the UE discovers that the cell is no longer suitable for camping 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 CELL UPDATE message on the uplink DCCH, instead it triggers timer T307. After the expiry of timer T307 the UE shall enter idle state. This is confirmed by the SS, when it sends a PAGING TYPE 1 message to the UE using its U-RNTI identity, and the UE does not respond to the page. SS then attempts to page for the UE again, this time using PAGING TYPE 2 message sent on downlink DCCH. Likewise, the UE shall not respond to this page.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_PCH state.
2				SS starts to decrease the transmission power until 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.
4	←		PAGING TYPE 1	SS pages the UE at its assigned paging occasion using the allocated U-RNTI value. The UE shall not respond to this page as it has already entered the idle mode.
5	←		PAGING TYPE 2	SS pages the UE on the downlink DCCH. The UE shall not respond to this page.

Specific Message Contents

PAGING TYPE 1 (Step 4)

Information Element	Value/remark
Page record list - Paging record - CHOICE Paging originator - U-RNTI - SRNC Identity - S-RNTI ~~BCCH Modification info~~	 UTRAN Originator Check to see if set to '0000 0000 0001' Check to see if set to '0000 0000 0000 0000 1111' ~~Not Present.~~

PAGING TYPE 2 (Step 5)

Information Element	Value/remark
~~Integrity check info~~ Paging cause CN domain identity Paging Record Type Identifier	~~Not Present~~ Set to a cause corresponding to one radio access bearer services supported by the UE. CS-Domain IMSI

8.3.1.10.5 Test requirement

After step 4 the UE shall remain in the idle mode and not respond to the paging message sent on PCCH.

After step 5 the UE shall remain in the idle mode and not respond to the paging message addressed to it on the DCCH.

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 upon the expiry of timer T302, after failing to receive any response from the SS during T302 timer period.

8.3.1.11.4 Method of test

Initial Condition

System Simulator: 1 cell

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

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 wait until the expiry of T302 timer.
2	→		CELL UPDATE	The value "periodical cell update" shall be set in IE "Cell update cause" after the expiry of timer T305.
3				If K is equal to N302+2 then proceeds to step 5.
4				SS increments counter K, transmits no response to the UE and waits for an additional period equals 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 "~~DRX Indicator~~RRC State Indicator" is set to "~~No DRX~~CELL_FACH".
6	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

CELL UPDATE (Step 2)

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'
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
Cell Update Cause	Check to see if set to 'Periodic cell updating'
~~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 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~~2) transmissions shall be detected in SS.

After step 5 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH and stays 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 at 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: 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

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+1) attempts of retransmission, the UE shall return to idle state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_FACH state. SS sets its internal counter K=~~1~~ 0 and waits for a period equals to timer value T302. If CELL UPDATE message is received upon timer expiry, proceeds to step 2. Else goes to step 4.
2	→		CELL UPDATE	The value "periodical cell update" should be set in IE "Cell update cause" and this message should be sent for each expiry of timer T302.
3				SS transmits no response to the UE and increments counter K. SS waits for an additional period equals to T302 timer.
4				SS waits for an additional period equals to T302 timer. If CELL UPDATE message is received, proceed to step 2. Otherwise, terminates the test. If K is not equal to N302+2, the test should be considered as a failure.

Specific Message Contents

CELL UPDATE (Step 2)

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'
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
Cell Update Cause	Check to see if set to 'Periodic cell updating'
~~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~~

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 4 the counter K in SS shall be equal to N302+2.

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 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. On the other hand, if V302 is greater than N302, the UE shall abandon cell update procedure and enters idle mode.

8.3.1.13.3 Test Purpose

To confirm that the UE retransmits CELL UPDATE message when it receives an erroneous CELL UPDATE CONFIRM message, if the number of retransmissions is not the maximum allowed value. To confirm that the UE returns to idle mode after sending maximum allowed number of CELL UPDATE messages without receiving a valid CELL UPDATE CONFIRM message.

8.3.1.13.4 Method of Test

Initial Condition

System Simulator: 1 cell

UE: CELL_PCH (state 6~~15~~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 PAGING TYPE 1 message using the U-RNTI identity assigned during RRC connection establishment procedure. The UE shall ~~start to~~ transmit CELL UPDATE message on the uplink CCCH. Upon receiving such a message, the SS replies with a CELL UPDATE CONFIRM message containing a protocol error in IE "~~DRX Indicator~~RRC transaction identifier". The UE shall detect the protocol error and re-transmit CELL UPDATE message up to a maximum of N302+1 times. The time interval between the transmissions shall be approximately equal to T302. SS verifies that it receives a total of (N302+~~1~~2) identical CELL UPDATE messages. The UE shall return to idle mode after all uplink transmissions have finished. SS verifies this by paging the UE using the U-RNTI identity. The UE shall not respond to this page.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PAGING TYPE 1	The UE is in the CELL_PCH state. SS sets its internal counter K=0~~ and waits for a period equals to timer value T302~~. SS pages for the UE using the allocated connected mode identity (U-RNTI).~~ If CELL UPDATE message is received upon timer expiry, proceeds to step 2. Else goes to step 5.~~
2		→	CELL UPDATE	If CELL UPDATE message is received, check that the ~~The~~ value "paging response" ~~should be~~is set in IE "Cell update cause". Else goes to step 6.
3		←	CELL UPDATE CONFIRM	SS transmits an invalid message. SS increments K.
4		→	CELL UPDATE	SS waits for T302 timer to expire. The UE shall send CELL UPDATE message.
5				If a CELL UPDATE message is received in step 4, SS increments K~~, restart T302 timer~~ and returns to ~~execute~~ step ~~4~~3. Else, SS proceeds to step 6.
6				SS verifies that K = (N302+~~1~~2) and proceeds to the next step. Else, the test fails.
7		←	PAGING TYPE 1	SS pages the UE.
8				UE shall not respond.

Specific Message Content

CELL UPDATE (Step 2)

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'
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
Cell Update Cause	Check to see if set to 'Paging Response'
~~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 3)

Use the same message sub-type found in Annex A, with the following exception:

Information Element	Value/remark
~~DRX Indicator~~RRC transaction identifier	~~Use one of the spare~~Invalid values.

CELL UPDATE (Step 4)

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'
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
Cell Update Cause	Check to see if set to 'Paging Response'
~~Protocol error indicator~~	~~Check to see if it is set to 'TRUE~~
~~Measured results on RACH~~	~~Check to see if it is absent~~
Failure cause	Check to see if it is set to 'protocol error'
-Protocol error information	Check to see if it is set to 'Information element value not comprehended'

PAGING TYPE 1 (Step 1 and 7)

Information Element	Value/remark
Page record list	
- Paging record	
- CHOICE Paging originator	UTRAN Originator
- U-RNTI	
- SRNC Identity	'0000 0000 0001'
- S-RNTI	'0000 0000 0000 0000 0001'
~~BCCH Modification info~~	~~Not Present.~~

8.3.1.13.5 Test Requirement

After step 3 the UE shall continue to transmit CELL UPDATE message for N302+1 times.

At step 6 the counter K should be equal to (N302+~~1~~2).

After step 7 the UE shall return to idle mode and not respond the PAGING TYPE 1 message sent by the SS.

8.3.1.14 ~~Cell Update: Radio Bearer Control for Transition from CELL_DCH to CELL_FACH~~

~~8.3.1.14.1 Definition~~

~~8.3.1.14.2 Conformance Requirement~~

~~During a transition from CELL_DCH state to CELL_FACH state arising from the execution of radio bearer control procedure, the UE might be requested to re-select to an unknown cell. The UE shall select a cell and perform cell updating procedure. In order to distinguish the 2 cases of cell updating: (i) due to UE mobility and (ii) due to radio bearer control procedure, the update cause in CELL UPDATE message shall be different for these 2 cases. When the UTRAN receives this message, it is then able to decide whether to initiate RNC reallocation and the establishment of new configuration in the target RNC.~~

~~8.3.1.14.3 Test Purpose~~

~~To confirm that the UE perform a cell update procedure after being instructed to move from CELL_DCH to CELL_FACH state as a result of radio bearer control procedure. To confirm that the UE indicates cause "RB Control" when transmitting a CELL UPDATE message to the selected cell. To confirm that the UE transmit a compatible response to conclude the radio bearer control procedure.~~

8.3.1.14.4 Method of Test

Initial Condition

System Simulator: 2 cells – both cell 1 and cell 2 are active and suitable for camping, but with cell 1 having a stronger transmission power.

UE: CS_CELL_DCH_Initial (state 6-1) or PS_CELL_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

The UE is brought to CELL_DCH state in cell 1, after the UE has successfully performed the RRC connection establishment procedure and was allocated dedicated physical resources. Next SS sends RADIO BEARER SETUP message to the UE on downlink DCCH. In this message, a DTCH channel is assigned to the UE. The UE shall reconfigure its channel resources and then return a RADIO BEARER SETUP COMPLETE message. Following this sequence, the SS sends RADIO BEARER RELEASE message to request that all radio bearers carried on dedicated physical channel to be released. However, this message does not contain information about the target cell to select when UE transits to CELL_FACH state. The UE shall perform cell reselection and it shall detect the presence of cell 2. The UE shall send a CELL UPDATE message with cause set to "RB Control" on the uplink CCCH carried by PRACH physical channel, specified in cell 2's system information message. SS replies with CELL UPDATE CONFIRM message, specifying the IE "PRACH Info" and "Secondary CCPCH Info". To complete this procedure, the UE shall transmit RADIO BEARER RELEASE COMPLETE message on the DCCH, which is carried on the PRACH physical channel specified in system information messages broadcasted in cell 2.

Expected Test Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_DCH state after completing a successful RRC connection establishment procedure.
2		←	RADIO BEARER SETUP	Establishes DTCH logical channel.
3		→	RADIO BEARER SETUP COMPLETE	
4		←	RADIO BEARER RELEASE	Information on target cell is not specified.
5		→	CELL UPDATE	UE shall send this message on the uplink CCCH of cell 2. IE "Cell update cause" shall be set to "RB Control".
6		←	CELL UPDATE CONFIRM	Ies "PRACH Info" and IE "Secondary CCPCH Info" are included in this message. IE "DRX Indicator" set to "No DRX".
7		→	RADIO BEARER RELEASE COMPLETE	Sent on the PRACH given in system information messages.

Specific Message Contents

RADIO BEARER SETUP (Step 2)

Use the same message sub-type entitled "Packet to CELL_DCH from CELL_DCH in PS" found in Annex A, with the following exceptions:

Information Element	Value/remark
RAB information to setup list	
- RAB information for setup	
- RAB Info	
- RAB Identity	4
- CN Domain Identity	PS
- Re-establishment timer	
- T315	1800 seconds
- RB Info to setup list	
- RB Info to setup	
- RB Identity	5
- PDCP Info	Not Present.
- RLC Info	Use the same RLC configuration as in TS 34.108.
- RB Mapping Info	Use the same RLC multiplexing scheme as in TS 34.108.
RB to be affected list	Not Present.
UL Transport Channel information common to all transport channels	
TFC Subset	Not Present – use default value, all TFCs are allowed.
- PRACH TFCS	Not Present
- CHOICE Mode	Not Present
- PRACH TFCS	FDD
- UL DCH TFCS	
- 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 6.10 of TS 34.108.
- CTFC Information	Refer to TS 34.108 – This IE is repeated for the maximum number TFC to be added as specified in TS 34.108 for a selected transport channel
- Power offset information	
- CHOICE Gain Factor	Signalled Gain Factors
- Gain factor β_c	0
- Gain factor β_d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0
Deleted TrCH information list (uplink)	Not Present
- Deleted UL TrCH information	
Added or Reconfigured TrCH information list	
- Added or Reconfigured UL TrCH information	
- Transport channel identity	2
- TFS	
- CHOICE Transport channel type	Dedicated transport channels
- Dynamic Transport Format Information	
- Number of Transport blocks	1
- RLC Size	128 bits
- Semi-static Transport Format	Use the same settings as in TS 34.108
- Transmission time interval	
- Type of channel coding	
- Coding Rate	
- Rate matching attribute	
- CRC size	
DL Transport Channel information common to all transport channels	Not Present
Deleted TrCH information list (downlink)	Not Present
Added or Reconfigured TrCH information list	Not Present
Frequency info	Not Present – use the existing frequency information
Maximum allow UL TX power	Not Present – use the allowable UL TX power as specified by the UE's RF power class.
CHOICE Channel requirement	Not Present.
Downlink information common for all radio links	Not Present.
Downlink information per radio link list	Not Present.

~~RADIO BEARER SETUP COMPLETE (Step 3)~~

~~Only the message type is checked for this message.~~

~~RADIO BEARER RELEASE (Step 4)~~

~~Use the same message sub-type entitled "Packet to CELL_FACH from CELL_DCH in PS" found in Annex A, with the following exceptions:~~

Information Element	Value/remark
RAB information to release list	
- RB Identity	5
RB information to be affected list	
- RB information to be affected	CCCH for RRC (TM)
- RB identity	0
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- RLC logical channel mapping indicator	Not Present
- Uplink transport channel type	RACH
- UL Transport channel identity	Not Present
- Logical channel identity	5
- MAC logical channel priority	1
- Logical channel max loss	Not Present
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL Transport channel identity	Not Present
- Logical channel identity	6
- RB information to be affected	DCCH for RRC (UM)
- RB identity	1
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- Logical channel identity	1
- MAC logical channel priority	2
- Logical channel max loss	Not Present
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- Logical channel identity	1
- RB information to be affected	DCCH for RRC (AM)
- RB identity	2
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- Logical channel identity	2
- MAC logical channel priority	3
- Logical channel max loss	Not Present
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- Logical channel identity	2
- RB information to be affected	DCCH for NAS_DT-AM High Priority
- RB identity	3
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- Logical channel identity	3
- MAC logical channel priority	4
- Logical channel max loss	Not Present
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- Logical channel identity	3
- RB information to be affected	DCCH for NAS_DT-AM Low Priority
- RB identity	4
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	RACH
- Logical channel identity	4
- MAC logical channel priority	5
- Logical channel max loss	Not Present
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- Logical channel identity	4
- RB information to be affected	BCCH for RRC (TM)

- RB identity	6
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Downlink transport channel type	FACH
- DL Transport channel identity	Not Present
- Logical channel identity	5
- RB information to be affected	PCCH for RRC (TM)
- RB identity	7
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Downlink transport channel type	PCH
- DL Transport channel identity	Not Present
- Logical channel identity	1
UL Transport Channel information common to all transport channels	
- TFC Subset	Not Present - use default value, all TFCs are allowed.
- CHOICE Mode	FDD
- UL DCH TFCS	Use the same TFCS as in IE "RACH TFCS" found in system information block type 5 messages of cell 2.
Deleted TrCH information list (uplink)	Not Present.
Added or Reconfigured TrCH information list	
- Added or Reconfigured UL TrCH information	
- Transport channel identity	1
- TFS	Use the same TFS as in IE "RACH TFS" found in system information block type 5 messages of cell 2.
DL Transport Channel information common to all transport channels	
- SCCPCH TFCS	Use the same TFCS as in IE "TFCS" (for FACH) in IE "Secondary CCPCH system information" found in system information block type 5 messages of cell 2.
- DL DCH TFCS	Not Present.
Deleted TrCH information list (downlink)	Not Present
Added or Reconfigured TrCH information list	Not Present.
Frequency info	Not Present – use the existing frequency information
Maximum allow UL TX power	Not Present – use the allowable UL TX power as specified by the UE's RF power class.
CHOICE Channel requirement	Not Present.
Downlink information common for all radio links	Not Present.
Downlink information per radio link list	Not Present.

CELL UPDATE (Step 5)

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'
Integrity check info	Not checked
AM_RLC error indicator (for C-plane)	Check to see if set to 'FALSE'
AM_RLC error indicator (for U-plane)	Check to see if set to 'FALSE'
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
Cell Update Cause	Check to see if set to 'RB Control'
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 6)

Use the same message sub-type found in Annex A.

~~RADIO BEARER RELEASE COMPLETE (Step 7)~~

~~Only the message type is checked in this message.~~

~~8.3.1.14.5 Test Requirement~~

~~After step 4 the UE shall reselect to cell 2, perform a cell update procedure by transmitting CELL UPDATE message. In this message, the IE "Cell Update Cause" shall be set to "RB Control".~~

~~After step 6 the UE shall send RADIO BEARER RELEASE COMPLETE message on the DCCH carried by the PRACH channel. The applicable parameters of the PRACH resources are broadcasted on the system information messages of cell 2.~~Void

8.3.1.15 Cell Update: Acknowledged Mode RLC Reset

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 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.

8.3.1.15.3 Test Purpose

To confirm that the UE reports the occurrence of an unrecoverable error in a C-plane AM RLC entity by initiating cell update procedure. To confirm that the UE is able to resume normal C-plane data transmission and reception after the completion of cell update procedure.

8.3.1.15.4 Method of Test

Initial Condition

System Simulator: 1 cell

UE: CS-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

Test Procedure

The UE is initially in CELL_FACH state. SS sends RADIO BEARER SETUP message on the DCCH using AM mode to establish a DTCH logical channel for u-plane packet data transfer. The UE shall reply with a RADIO BEARER SETUP COMPLETE message, sent using AM RLC on the DCCH. Then it activates the associated DTCH logical channel for user data transmission and reception. SS does not acknowledge the RADIO BEARER SETUP COMPLETE message. The UE shall continue to transmit the AM PDU carrying RADIO BEARER COMPLETE 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. This figure is specified in IE "RLC info" of RADIO BEARER SETUP message in step 6. At this point, the UE shall initiate a cell update procedure by transmitting CELL UPDATE message on the uplink CCCH. The CELL UPDATE message shall specify the value "TRUE" in IE "AM_RLC error indicator (for C-plane)". SS replies with CELL UPDATE CONFIRM message using the default message content. SS then attempts to perform a local authentication by transmitting a COUNTER CHECK message using AM RLC on DCCH. The UE shall respond by sending a COUNTER CHECK RESPONSE message on the uplink DCCH, verifying that the AM RLC entity for RRC signalling was successfully reset.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is initially in CELL_FACH state.
2	←		RADIO BEARER SETUP	Establishes a DTCH logical channel operating in AM mode.
3	→		RADIO BEARER SETUP COMPLETE	UE shall stay in CELL_FACH state. 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 RESET PDU using AM RLC on the DCCH. SS does not respond to any PDU frames originating from the UE, and it waits for a period equivalent to (MAX_RST+1) times expiry of Timer_RST. This figure is specified in IE "RLC info" of RADIO BEARER SETUP message in step 6.
5	→		CELL UPDATE	UE shall send this message on CCCH. IE "AM_RLC Error Indication (for C-plane)" shall be set to 'TRUE'
6	←		CELL UPDATE CONFIRM	"~~DRX Indicator~~RRC State Indicator" set to "~~No DRX~~CELL_FACH". UE shall transit to CELL_FACH state.
7	←		COUNTER CHECK	SS requests for a local authentication of the amount of data sent/received during the lifetime of the RRC connection.
8	→		COUNTER CHECK RESPONSE	This message shall be transmitted using AM RLC for RRC signalling on the uplink DCCH.

Specific Message Contents

RADIO BEARER SETUP (Step 2)

Use the same message sub-type entitled "Packet to CELL_FACH from CELL_FACH in PS" found in Annex A.

RADIO BEARER SETUP COMPLETE (Step 3)

Only the message type IE is checked for this message.

CELL UPDATE (Step 5)

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'
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator (for C-plane)~~	~~Check to see if set to 'FALSE'~~
AM_RLC error indicator (for U-plane)	Check to see if set to 'TRUE'
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
~~Cell Update Cause~~	~~Not checked~~
~~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 6)

Use the same message sub-type found in Annex A.

COUNTER CHECK (Step 7)

Information Element	Values/Remarks
Integrity check info	Not present
RB COUNT-C MSB Information	
- RB Identity	5
- COUNT-C-MSB-uplink	Set to an arbitrary integer equals to the 25 MSBs from COUNT-C for RB#5
- COUNT-C-MSB-downlink	Set to an arbitrary integer equals to the 25 MSBs from COUNT-C for RB#5

COUNTER CHECK RESPONSE (Step 8)

Information Element	Values/Remarks
Integrity check info	Not checked
RB COUNT-C Information	Not checked
- RB Identity	
- COUNT-C-uplink	
- COUNT-C-downlink	

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 C-plane data.

After step 7 the UE shall send a COUNTER CHECK RESPONSE message on the uplink DCCH. This message shall be sent using the AM RLC entity for RRC signalling.

8.3.1.16 Cell Update: cell reselection in CELL_FACH

8.3.1.16.1 Definition

8.3.1.16.2 Conformance requirement

This procedure is used to update UTRAN with the current cell of the UE after it has perform a cell reselection in CELL_FACH state. UE shall receive acknowledgement from UTRAN on downlink CCCH.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.16.3 Test purpose

To confirm that the UE executes a cell update procedure after the successful reselection of another UTRA cell. To confirm that the UE send the correct uplink respond message when executing cell update procedure due to cell reselection. To confirm cell update procedure completes after UE receives CELL UPDATE CONFIRM on downlink CCCH from UTRAN.

8.3.1.16.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 is active, with the downlink transmission power shown in column marked "T0" in Table 8.3.1.1-1, while cell~~Cell~~ 2 is inactive

UE: CS-CELL_FACH_Initial (state 6-2) or PS-CELL_FACH_Initial (state 6-4)~~CELL_FACH~~ in cell 1 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE, ciphering in both UL and DL are disabled during RRC connection establishment.

Test Procedure

The UE is in the CELL_FACH state, camping onto cell 1. SS configures its downlink transmission power settings according to columns "T1" in Table 8.3.1.1-1. ~~The SS starts to broadcast BCCH on the primary CPICH in cell 2 with a power level greater than that in cell 1.~~ The UE shall find cell 2 to be more suitable for service and hence perform a cell reselection. After the completion of cell reselection, the UE shall transmits a CELL UPDATE message to the SS on the uplink CCCH of cell 2 and set IE " Cell update cause" to "Cell Reselection". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message, which includes the IE "~~DRX Indicator~~RRC State Indicator" set to "~~DRX with Cell updating~~CELL_PCH", IE "U-RNTI" and an IE "New U-RNTI" to the UE on the downlink CCCH. UE shall response with UTRAN MOBILITY INFORMATION CONFIRM message.~~SS verifies that the UE does not send any response to this message~~. UE shall move to CELL_PCH 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 "T1" of Table 8.3.1.1-1. ~~The SS starts to broadcast BCCH on the primary CPICH in cell 2 with a power level that is higher than that in cell 1.~~ The UE shall find that the cell 2 is better for service and perform a reselection. SS waits for the maximum duration required for the UE to camp to cell 2.
3	→		CELL UPDATE	Value "cell reselection" should be indicated in IE " Cell update cause"
5	→		UTRAN MOBILITY INFORMATION CONFIRM	~~SS wait for T302+α. If SS receives CELL UPDATE message from the UE, this test fails.~~

Specific Message Contents

CELL UPDATE (Steps 3)

Use the same message sub-type found in Clause 9 of TS34.108.

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 (for C-plane)~~	~~Check to see if set to 'FALSE'~~
~~AM_RLC error indicator (for U-plane)~~	~~Check to see if set to 'FALSE'~~
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 4)

Use the same message sub-type found in ~~Clause 9 of TS34.108~~Annex A, with the following exceptions:

Information Element	Value/remark
U-RNTI	
- SRNC Identity	'0000 0000 0001'
- S-RNTI	'0000 0000 0000 0000 0001'
~~DRX Indicator~~RRC State Indicator	~~DRX with cell updating~~CELL_PCH
New U-RNTI	
- SRNC Identity	'0000 0000 0000 0001'
- S-RNTI	An arbitrary 20-bits string which is different from original S-RNTI

8.3.1.16.5 Test requirement

After step 2 the UE shall reselect to cell 2 and then it shall transmit a CELL UPDATE message which, sets the value "cell reselection" in IE " Cell update cause".

After step 4 the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM message.~~not transmit any uplink message in response to the CELL UPDATE CONFIRM message received in step 4. Test fails if UE does.~~

8.3.1.17 Cell Update: Failure (UTRAN initiate an RRC connection release procedure on DCCH)

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 DCCH, it shall transmit an RRC CONNECTION RELEASE COMPLETE message using AM RLC on the DCCH to the UTRAN.

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 after sending RRC CONNECTION RELEASE COMPLETE message to UTRAN upon the reception of RRC CONNECTION RELEASE message on DCCH.

8.3.1.17.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: 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 ~~CELL_FACH~~

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 transmits RRC CONNECTION RELEASE message on downlink DCCH. The UE shall transmit RRC CONNECTION RELEASE COMPLETE message using AM RLC on the DCCH and return to idle mode after release of all current signalling flows and radio access bearers.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1	→		CELL UPDATE	The value "periodical cell update" should be set in IE " Cell update cause" and this message should be sent upon expiry of timer T302.
2	←		RRC CONNECTION RELEASE	SS transmits RRC CONNECTION RELEASE message to the UE.
3	→		RRC CONNECTION RELEASE COMPLETE	The UE transmits this message using acknowledged mode. The UE releases L2 signalling link and radio resources then the UE goes to idle mode.

Specific Message Contents

CELL UPDATE (Step 1)

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'

RRC CONNECTION RELEASE (Step 2)

Only the message type is checked for this message.

RRC CONNECTION RELEASE COMPLETE (Step 3)

Only the message type is checked for this message.

8.3.1.17.5 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 2 the UE shall transmit a RRC CONNECTION RELEASE COMPLETE message on the uplink DCCH and return to idle mode.

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.

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.

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_DCH (state 6-5) or PS_DCCH_DCH (state 6.7) in cell 1, ~~after executing a generic call set-up procedure for mobile originating CS or PS call (clauses 7.2.3.2 and 7.2.4.2 in TS 34.108). The exact procedure to apply~~ dependings on the CN domain(s) supported by the UE.

Test Procedure

The UE is brought to CELL_DCH state in a cell 1 after making an successful outgoing call attempt. After the call has been established, SS begins to broadcast the BCCH in cell 2, and then stops transmitting and receiving in cell 1. 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 should then enter CELL_FACH state and transmits CELL UPDATE on the uplink CCCH to SS. The SS transmits CELL UPDATE CONFIRM message which includes IE “new C-RNTI”. UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	RADIO_BEARER SETUP	T315=0
2		→	RADIO_BEARER SETUP COMPLETE	
3				The UE is brought to CELL_DCH state in a cell 1, after making a successful outgoing call.
4		←	BCCH	The SS starts transmitting the BCCH in a cell 2 using the same contents (except for cell identity which is set to "0000 0000 0000 0010") for system information sent on cell 1. SS starts to listen to the uplink CCCH of cell 2.
5				The SS stops transmitting and receiving in a cell .1.
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 should find a new cell 2 and the value "radio link failure" should be set in IE "Cell update cause".
8		←	CELL UPDATE CONFIRM	Including IE "new U-RNTI" and IE "new C-RNTI"
9		→	UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

RADIO BEARER SETUP

The contents of RADIO BEARER SETUP message in this test case is identical to those in default contents of layer 3 messages for RRC tests with the following exceptions:

Information Element	Value/remark
RAB information to setup list - RAB information to setup - RAB info - T315	 0

CELL UPDATE (Step 7)

Information Element	Value/remark
U-RNTI -SRNC Identity - S-RNTI Cell Update Cause	 Check to see if set to value assigned previously in cell 1. Check to see if set to value assigned previously in cell 1. Check to see if set to 'radio link failure'

CELL UPDATE CONFIRM (Step 8)

Use the same message sub-type found in step 4, with the following exceptions:

Information Element	Value/remark
New U-RNTI - SRNC Identity - S-RNTI New C-RNTI	 '0000 0000 0000 0001' An arbitrary 20-bits string which is different from original S-RNTI An arbitrary 16-bits string which is different from original C-RNTI.

8.3.1.18.5 Test requirement

After step 5, the UE shall indicate to the non-access stratum the release of the radio bearer which is associated with T315.

After step 6, the UE shall detect the presence of cell 2, perform cell re-selection and transmit CELL UPDATE message.

After step 8, the UE shall transmit UTRAN MOBILITY INFORMATION CONFIRM to SS.

8.3.1.19 Cell Update: Unrecoverble error in RLC

8.3.1.19.1 Definition

8.3.1.19.2 Conformance requirement

When a UE loses the radio connection due to e.g. detection of RLC unrecoverble error (amount of the retransmission of RESET_PDU reaches the value of Max_DAT and receives no ACK) in CELL_DCH state. After a successful cell re-selection and transition to CELL_FACH state, the UE shall transmit CELL UPDATE message which includes the value "RLC unrecoverable error" in the IE "cell update cause" on the uplink CCCH.

Reference

3GPP TS 25.331 clause 8.3.1

8.3.1.19.3 Test purpose

To confirm that the UE tries to find a new cell, after detecting that a RLC unrecoverble error has occurred. The UE shall move to CELL_FACH state and transmit CELL UPDATE message to SS.

8.3.1.19.4 Method of test

Initial Condition

System Simulator : 2 cells Cell 1 is active, with the downlink transmission power shown in column marked "T0" in Table 8.3.1.1-1, while cell 2 is inactive

UE: CS_DCCH_DCH (state 6-5) or PS_DCCH_DCH (state 6-7) as defined in clause 7.4 of TS 34.108 in cell 1~~. The exact procedure to apply~~ dependings on the CN domain(s) supported by the UE.

Test Procedure

The UE is brought to CELL_DCH state in a cell 1 after a successful outgoing call attempt. After the call has been established, the SS transmits a PAGING TYPE 2 message on the downlink DCCH. Then the UE transmits an UPLINK DIRECT TRANSFER message on the uplink using AM-RLC for the response and the SS does not transmit a STATUS PDU for the response to AM-RLC PDU and begins to broadcast the BCCH in cell 2. The UE should detect an unrecoverble error in cell 1 and attempts to re-select to cell 2. It should then enter CELL_FACH state and transmits CELL UPDATE message which includes the value "RLC unrecoverable error" in IE "cell update cause" on the uplink CCCH to SS. The SS transmits CELL UPDATE CONFIRM message which includes "TRUE" in RLC reset indicator(for C-plane) IE and a new TFCS setting according to the new transport channel. After this, UE shall reconfigure the

RLC and the new radio connection and transmits TRANSPORT CHANNEL RECONFIGURATION COMPLETE message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_DCH state in a cell 1, after making a successful outgoing call.
2	←		PAGING TYPE2	The SS transmits a PAGING TYPE 2 message to the UE on the downlink DCCH in cell 1.
3	→		UPLINK DIRECT TRANSFER	The UE responds to the PAGING TYPE 2 message using AM-RLC but the SS does not transmit a STATUS PDU as an acknowledgement.
4	←		BCCH	The SS starts transmitting the BCCH in a cell 2 using the same contents (except for cell identity which is set to "0000 0000 0000 0010") for system information sent on cell 1. SS starts to listen to the uplink CCCH of cell 2.
5				The UE detects an unrecoverble error in the RLC level.
6	→		CELL UPDATE	The UE should find a new cell 2 and then transmits this message which includes the value "RLC unrecoverable error" in the IE "cell update cause".
7	←		CELL UPDATE CONFIRM	Including the new configuration information.
8	→		TRANSPORT CHANNEL RECONFIGURATION COMPLETE	

Specific Message Contents

Cell 1: SYSTEM INFORMATION TYPE 1

Information Element	Value/remark
UE Timers and constants in connected mode	
T301	8 seconds
T313	15 seconds
T314	~~3~~20 seconds
T315	30 seconds
N313	~~1~~6200

CELL UPDATE (Step 6)

Information Element	Value/remark
U-RNTI	
-SRNC Identity	Check to see if set to value assigned previously in cell 1.
- S-RNTI	Check to see if set to value assigned previously in cell 1.
Cell Update Cause	Check to see if set to 'RLC unrecoverable error'

8.3.1.19.5 Test requirement

After step 5, the UE shall detect the presence of cell 2 and move to CELL_FACH in cell 2 to transmit CELL UPDATE message to SS.

After step 7, the UE shall transmit TRANSPORT CHANNEL RECONFIGURATION COMPLETE message to SS.

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~~ 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-transmits 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. On the other hand, if V302 is greater than N302, the UE shall abandon cell update procedure and enters idle mode.

8.3.1.20.3 Test Purpose

To confirm that the UE retransmits 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 ~~is~~has not reached the maximum allowed value. To confirm that the UE returns to idle mode after sending maximum allowed number of CELL UPDATE messages without receiving a valid CELL UPDATE CONFIRM message.

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 PAGING TYPE 1 message using the U-RNTI identity assigned during RRC connection establishment procedure. The UE shall transmit CELL UPDATE message on the uplink CCCH. Upon receiving such a message, the SS replies with a CELL 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 CELL UPDATE message up to a maximum of N302+1 times. SS verifies that it receives a total of (N302+2) identical CELL UPDATE messages. The UE shall return to idle mode after all uplink transmissions have finished. SS verifies this by paging the UE using the U-RNTI identity. The UE shall not respond to this page.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	PAGING TYPE 1	The UE is in the CELL_PCH state. SS sets its internal counter K=0. 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". Else goes to step 6.
3		←	CELL UPDATE CONFIRM	SS transmits an invalid message. SS increments K.
4		→	CELL UPDATE	
5				If a CELL UPDATE message is received in step 4, SS increments K and returns to step 3. Else, SS proceeds to step 6.
6				SS verifies that K = (N302+2) and proceeds to the next step. Else, the test fails.
7		←	PAGING TYPE 1	SS pages the UE.
8				UE shall not respond.

Specific Message Content

CELL UPDATE (Step 2)

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI START List Cell Update Cause	 Check to see if set to '0000 0000 0001' Check to see if set to '0000 0000 0000 0000 0001' Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE 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)

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI START List 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' Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE Check to see if set to 'Paging Response' Check to see if it is set to 'invalid configuration'

PAGING TYPE 1 (Step 1 and 7)

Information Element	Value/remark
Page record list - Paging record - CHOICE Paging originator - U-RNTI - SRNC Identity - S-RNTI	 UTRAN Originator '0000 0000 0001' '0000 0000 0000 0000 0001'

8.3.1.20.5 Test Requirement

After step 3 the UE shall continue to transmit CELL UPDATE message for N302+1 times.

At step 6 the counter K should be equal to (N302+2).

After step 7 the UE shall return to idle mode and not respond the PAGING TYPE 1 message sent by the SS.

8.3.2 URA Update

8.3.2.1 URA Update: URA reselection

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 URA reselection has occurred in URA_PCH state. It may also be used for supervision of the RRC connection, even if no URA reselection takes place.

Reference

3GPP TS 25.331 clause 8.3.1~~2~~

8.3.2.1.3 Test purpose

To confirm that the UE executes an URA update procedure after the successful URA reselection.

8.3.2.1.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 is active with URA-ID 1 and the downlink transmission power shown in column marked "T0" in Table 8.3.1.1-1, ~~Cell~~ while cell 2 is inactive with URA-ID 2

UE: URA_PCH (state 6-~~16~~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

The UE is in the URA_PCH state and assigned with only 1 URA identity in cell 1: URA-ID 1. The SS starts to broadcast BCCH in cell 2 with URA-ID 2 and stop transmitting BCCH in cell 1. This is expected to cause the UE to perform a cell reselection to cell 2. 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 URA UPDATE CONFIRM message which includes the IEs "~~DRX Indicator~~RRC State Indicator" and "URA-ID" to the UE on the downlink DCCH. The "~~DRX Indicator~~RRC State Indicator" is set to "~~DRX with URA updating~~URA_PCH". Finally, the UE returns to URA_PCH state in cell 2 without sending a uplink response message.

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 starts sending BCCH for cell 2 with URA-ID 2 and ceases to transmit BCCH with URA-ID 1 carried by cell 1.
3	→		URA UPDATE	The UE shall perform a cell reselection first 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 "URA reselection" into IE "URA update cause".
4	←		URA UPDATE CONFIRM	Message comprises IE "~~DRX Indicator~~RRC State Indicator" set "~~DRX with URA updating~~URA_PCH", and also IE "URA Identity" equals to "URA-ID 2".

Specific Message Contents

URA UPDATE (Step 3)

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI ~~Integrity check info~~ ~~AM_RLC error indicator~~ URA Update Cause ~~Protocol error indicator~~ ~~Protocol error information~~	 Check to see if set to '0000 0000 0001' Check to see if set to '0000 0000 0000 0000 0001' ~~Not checked~~ ~~Check to see if set to 'FALSE'~~ Check to see if set to '~~Change of~~ URA reselection' ~~Check to see if it is absent or set to 'FALSE'~~ ~~Check to see if it is absent~~

URA UPDATE CONFIRM (Step 4)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
~~DRX Indicator~~RRC State Indicator	~~DRX with URA updating~~URA_PCH

8.3.2.1.5 Test requirement

After step 2 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 reselection" into IE "URA update cause".

8.3.2.2 URA Update: periodical URA update

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 ~~T306~~T305.

Reference

3GPP TS 25.331 clause 8.3.~~2~~1

8.3.2.2.3 Test purpose

To confirm that the UE executes a URA update procedure after the expiry of timer ~~T306~~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-~~16~~13) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the URA_PCH state. When the UE detects the expiry of timer ~~T306~~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 illegal 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 transmits 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 the URA_PCH state. SS wait until ~~T306~~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	SS sends an illegal message.
4	→		URA UPDATE	UE shall not return to idle mode immediately, but attempts to re-transmit this message.
5	←		URA UPDATE CONFIRM	Including IE~~s "new C-RNTI" , and~~ "new U-RNTI"
6	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

URA UPDATE (Step 2 and 4)

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'
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator~~	~~Check to see if set to 'FALSE'~~
URA Update Cause	Check to see if set to 'Periodic URA update'
~~Protocol error indicator~~	~~Check to see if it is absent or set to 'FALSE'~~
~~Protocol error information~~	~~Check to see if it is absent~~

URA UPDATE CONFIRM (Step 3)

Use the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
U-RNTI	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 ~~2~~ 1 the UE shall detect the expiry of timer ~~T306~~T305, move to CELL_FACH state, and transmit a URA UPDATE message which is set the value "periodical cell update" into IE "URA update cause".

After step 3 the UE shall re-transmit URA UPDATE message.

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 ~~T306~~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 ~~T306~~T305, and then subsequently re-enters the service area before the expiry of T307.

Reference

3GPP TS 25.331 clause 8.3.~~2~~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 ~~T306~~T305.

8.3.2.3.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 is active with URA-ID 1 and the downlink transmission power shown in column marked "T0" in Table 8.3.1.1-1, while ~~C~~cell 2 is inactive with URA-ID 2

UE: URA_PCH (state 6-~~16~~13) as specified in clause 7.4 of TS 34.108, with URA-ID 1 in the list of URA-ID from cell 1

Test Procedure

The UE is initially in URA_PCH state. SS decrease the transmission power of cell such that cell selection figure of merit S<0. When the UE detects the expiry of timer ~~T306~~T305 according to the system information, the UE moves to CELL_FACH state and finds that it is out of service area. The UE is expected to search for cell to camp. Then SS increases the transmission power so that the UE detects that it returns to normal service within T307. 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. Next, cell 1 is switched off. SS waits until T305 timer has expired and then turns on cell 2. The UE shall discover that cell 1 is no longer suitable for camping and initiate a cell search. It shall detect the presence of cell 2 and reselects to this cell. . When the UE finds that URA-ID 2 is not in its current list of URA-IDs, it moves to CELL_FACH state and transmits a URA UPDATE message on the uplink CCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE starts operating from URA_PCH state.
2				SS decreases the transmission power 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 ~~T306~~T305. It shall discover that it is out of service and starts searching for cell to camp.(T307 timer starts)
4				SS increases the transmission power to the original level 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	
8				SS ceases to transmit BCCH with URA-ID 1 carried by cell 1and wait until ~~T306~~T305 expires.
9				SS starts sending BCCH for cell 2 with URA-ID 2 and.
10	→		URA UPDATE	UE shall detect the presence of cell 2 and re-select to it. It shall transmit this message with cause set to “~~change of~~ URA reselection”

Specific Message Contents

Use the same message sub-type found in Annex A, with the following exceptions:

URA UPDATE (Step 5)

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~~	~~Check to see if set to ‘FALSE’~~
URA Update Cause	Check to see if set to ‘re-entered service area’
~~Protocol error indicator~~	~~Check to see if it is absent or set to ‘FALSE’~~
~~Protocol error information~~	~~Check to see if it is absent~~

URA UPDATE CONFIRM (Step 6)

Information Element	Value/remark
New U-RNTI - SRNC Identity - S-RNTI New C-RNTI	 '0000 0000 0001' '0000 0000 0000 1111 1111' Arbitrary 16-bit string which is different the assigned C-RNTI in RRC CONNECTION SETUP message.

URA UPDATE (Step 10)

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI ~~AM_RLC error indicator~~ URA Update Cause ~~Protocol error indicator~~ ~~Protocol error information~~	 Check to see if set to '0000 0000 0001' Check to see if set to '0000 0000 0000 1111 1111' ~~Check to see if set to 'FALSE'~~ Check to see if set to '~~Change of~~ URA reselection' ~~Check to see if it is absent or set to 'FALSE'~~ ~~Check to see if it is absent~~

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", before the expiry of timer T307.

After step 6 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

After step ~~10~~ 9 the UE shall transmit a URA UPDATE message which sets value "~~change of~~ URA reselection" into IE "URA update cause".

8.3.2.4 URA Update: loss of service after expiry of timers T307 and ~~T306~~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 ~~T306~~T305 consecutively. The UE shall move to idle mode subsequently.

Reference

3GPP TS 25.331 clause 8.3.~~2~~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 ~~T306~~T305 when it discovers that it is out of service area.

8.3.2.4.4 Method of test

Initial Condition

System Simulator: 1cell

UE: URA_PCH (state 6-~~16~~13) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in URA_PCH state. SS stops the downlink transmissions of cell 1. When the UE detects the expiry of periodic URA updating timer ~~T306~~T305 according to the system information, the UE moves to CELL_FACH state and detects that it is out of service area. After the expiry of timer T307, the UE moves to the idle state and start to perform cell reselection.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				Initially, the UE is in the URA_PCH state.
2				SS switched off the downlink transmission of cell 1 so that the UE detects that it is out of service area.
3				Upon the expiry of timer ~~T306~~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

None

8.3.2.4.5 Test requirement

After step 2 the UE shall detect the expiry of timer ~~T306~~T305, not transmit URA UPDATE message on the uplink CCCH, move to CELL_FACH state, and start timer T307.

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 should 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 ~~V303~~ V302 is greater than ~~N303~~N302.

Reference

3GPP TS 25.331 clause 8.3.~~2~~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-~~16~~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 ~~T306~~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 "new C-RNTI", "new U-RNTI" and "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, 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 ~~N303~~ 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". 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 ~~T306~~T305.
3				SS increments K by 1.
4	←		URA UPDATE CONFIRM	SS transmits this message, setting the value "URA-ID 2" to IE "URA Identity". If K is not greater than ~~N303~~N302+1, SS waits for ~~T303~~ T302 to expires and then returns to step 2. If K is greater than ~~N303~~N302+1, SS proceeds to step 5.
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)

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'
~~Integrity check info~~	~~Not checked~~
~~AM_RLC error indicator~~	~~Check to see if set to 'FALSE'~~
URA Update Cause	Check to see if set to 'Periodic URA update'
~~Protocol error indicator~~	~~Check to see if it is absent or set to 'FALSE'~~
~~Protocol error information~~	~~Check to see if it is absent~~

URA UPDATE CONFIRM (Step 4)

Use the same message sub-type as specified in Annex A, with the following exceptions:

Information Element	Value/remark
~~DRX Indicator~~RRC State Indicator	~~DRX with URA updating~~URA_PCH
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 ~~T306~~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 2 the UE shall repeatedly 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 (~~N303~~N302+~~1~~2) 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 (~~V303~~ V302 is greater than ~~N303~~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 ~~V303~~ V302 is greater than ~~N303~~N302. If ~~V303~~ V302 is greater than ~~N303~~ N302 then the UE enters idle state.

Reference

3GPP TS 25.331 clause 8.3.~~2~~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 ~~V303~~ V302 is greater than ~~N303~~N302.

8.3.2.6.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-~~16~~13) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is originally in the URA_PCH state updated with URA-ID 1. When the UE detects the expiry of timer ~~T306~~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 "new C-RNTI", "new U-RNTI" 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, the UE shall retry to transmit a URA UPDATE message for ~~N303~~ N302+1 times. 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 ~~1~~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 ~~T306~~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 greater than ~~N303~~ N302+2 proceeds to step 4, else SS waits for ~~T303~~ T302 to expires and executes step 2.
4				SS waits for a ~~T306~~T305 to verify that no further URA UPDATE messages are transmitted by UE. The counter K shall be equal to (~~N303~~N302+~~1~~2). The UE shall enter idle state.

Specific Message Contents

URA UPDATE CONFIRM (Step 4)

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 ~~T306~~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 2 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 the UE shall stop transmitting URA UPDATE message and then enters idle state. The counter K shall be equal to (~~N303~~N302+~~1~~2).

8.3.2.7 URA Update: Success after ~~T303~~ 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 ~~T303~~ T302 timer expiry, it transmits a URA UPDATE message repeatedly at an interval of ~~T303~~ T302 timer value until its internal counter ~~V303~~ V302 is greater than ~~N303~~N302.

Reference

3GPP TS 25.331 clause 8.3.~~2~~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 ~~T303~~T302. To confirm that a maximum of ~~N303~~ N302+1 re-transmission is performed.

8.3.2.7.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-~~16~~13) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the URA_PCH. When the UE detects the expiry of timer ~~T306~~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 ~~T303~~T302. SS continues to ignore further URA UPDATE message until it receives (~~N303~~N302+1) such message~~s~~. Then it transmits a URA UPDATE CONFIRM message to the UE which includes IEs "new C-RNTI", "new U-RNTI". The UE shall then transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in URA_PCH state at the beginning of test. SS sets counter K to ~~1~~0. SS waits for ~~T306~~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 ~~T306~~T305.
3				SS increments K by 1.
4				If K is not greater than ~~N303~~N302+1, SS transmits no response to the UE, waits for an additional period equals to ~~T303~~ T302 timer and returns to step 2. Else, SS executes step 5.
5	←		URA UPDATE CONFIRM	This message includes IEs" new C-RNTI" , "new U-RNTI"
6	→		UTRAN MOBILITY INFORMATION CONFIRM	

Specific Message Contents

URA UPDATE CONFIRM (Step 5)

Use the same message sub-type as in Annex A, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
SRNC Identity	'0000 0000 0001'
S-RNTI	Arbitrary 20-bit string which is different from S-RNTI field in IE "U-RNTI"
New C-RNTI	Arbitrary 16-bit string which is different the assigned C-RNTI in RRC CONNECTION SETUP message.

8.3.2.7.5 Test requirement

After step 1 the UE shall detect the expiry of timer ~~T306~~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 2 the UE shall retry to transmit a URA UPDATE message at each expiry of timer ~~T303~~T302. UE shall attempt to re-transmit ~~N303~~ N302+1 URA UPDATE messages.

After step 5 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH.

8.3.2.8 URA Update: Failure (~~V303~~ V302 is greater than ~~N303~~N302:~~T303~~ T302 timeout)

8.3.2.8.1 Definition

8.3.2.8.2 Conformance requirement

The UE transmits a URA UPDATE message to the UTRAN when it needs to update the UTRAN with the current URA of the UE. When the UE fails to receive the URA UPDATE CONFIRM message, the UE transmits a URA UPDATE message repeatedly after every expiry of ~~T303~~ T302 until its internal counter ~~V303~~ V302 is greater than ~~N303~~N302. If ~~V303~~ V302 is greater than ~~N303~~N302, UE stops sending URA UPDATE message and then enters idle state.

Reference

3GPP TS 25.331 clause 8.3.~~2~~1

8.3.2.8.3 Test purpose

To confirm that the UE retries to perform the URA update procedure upon expiry of timer ~~T303~~ T302 and moves to idle state after retrying for ~~N303~~ N302+1 times.

8.3.2.8.4 Method of test

Initial Condition

System Simulator: 1 cell

UE: URA_PCH (state 6-~~16~~13) as specified in clause 7.4 of TS 34.108

Test Procedure

The UE is in the URA_PCH state. When the UE detects the expiry of timer ~~T306~~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". SS ignores this message, the UE shall continue to transmit URA UPDATE messages for ~~N303~~ N302+1 times after the expiry of timer ~~T303~~T302. After ~~N303~~ N302+1 re-transmissions, the UE shall enter idle state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in URA_PCH state and SS sets counter K=0. SS wait until T303 expires.
2		→	URA UPDATE	The value "periodic URA update" shall be set in IE "URA update cause".
3				SS ignores the message, waits for ~~T303~~ T302 timer to expire and increments K by 1. If a message is received after T303 expiry, return to step 2. Else, go to step 4.
4				SS checks that K is equal to (~~N303~~N302+~~2~~1).
5				The UE shall enter idle state.

Specific Message Contents

None

8.3.2.8.5 Test requirement

After step 1 the UE shall detect the expiry of timer ~~T306~~T305, then it shall move to CELL_FACH state and transmit a URA UPDATE message on the uplink CCCH, setting "periodical URA update" into IE "URA update cause".

After step 2 the UE shall retry to transmit a URA UPDATE message after the expiry of timer ~~T303~~T302. SS shall receive (~~N303~~N302+~~1~~2) CELL UPDATE message. After this, the UE shall enter idle state.

8.3.2.9 URA Update: Failure (UTRAN initiate an RRC connection release procedure on DCCH)

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 DCCH, it shall enter idle state after sending a RRC CONNECTION RELEASE COMPLETE message to UTRAN.

Reference

3GPP TS 25.331 clause 8.3.~~2~~1

8.3.2.9.3 Test purpose

To confirm that the UE moves to idle state after sending RRC CONNECTION RELEASE COMPLETE message to UTRAN upon the reception of RRC CONNECTION RELEASE message on downlink DCCH.

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 the URA_PCH state. When the UE detects the expiry of periodic URA updating timer ~~T306~~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 DCCH. The UE shall transmit RRC CONNECTION RELEASE COMPLETE message using AM RLC on the DCCH and 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 ~~T306~~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	→		RRC CONNECTION RELEASE COMPLETE	The UE transmits this message using acknowledged mode. The UE releases L2 signalling link and radio resources then the UE goes to idle mode.

Specific Message Contents

URA UPDATE (Step 2)

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 'Periodic URA update'

RRC CONNECTION RELEASE (Step 3)

Only the message type is checked for this message.

RRC CONNECTION RELEASE COMPLETE (Step 4)

Only the message type is checked for this message.

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 transmit a RRC CONNECTION RELEASE COMPLETE message on the uplink DCCH and return to idle mode.

8.3.3. UTRAN Mobility Information

8.3.3.1 UTRAN Mobility Information: Success

8.3.3.1.1 Definition

8.3.3.1.2 Conformance requirement

This procedure is used by the network to assign a new RNTI identity to the UE. It is initiated by the UTRAN when it sends an UTRAN MOBILITY INFORMATION message, which includes a new C-RNTI and/or U-RNTI on the downlink DCCH. The UE starts to use the new identities and transmits an UTRAN MOBILITY INFORMATION CONFIRM message to the UTRAN on the uplink DCCH.

Reference

3GPP TS 25.331 clause 8.3.3

8.3.3.1.3 Test purpose

To confirm that the UE starts to use the new identities after it receives an UTRAN MOBILITY INFORMATION message from the SS. To confirm that the UE use the new U-RNTI identity to calculate the applicable paging occasions.

[Editor's note] In this test case, it is assumed that the paging occasion during connected states is determined using U-RNTI. From TS 25.304 Clause 8, this assumption cannot be confirmed. Further clarification is required regarding this issue.

8.3.3.1.4 Method of test

Initial Condition

System Simulator: 1cell

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

Test Procedure

Initially, the UE is in the CELL_FACH state and it has been assigned a C-RNTI and U-RNTI. The SS transmits an UTRAN MOBILITY INFORMATION message which includes new C-RNTI and U-RNTI to the UE. Then the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message as confirmation and transits to CELL_PCH state. SS pages the UE by sending a PAGING TYPE 1 message and specifying the newly assigned U-RNTI identity in this message. The UE shall transmit a CELL UPDATE message to the SS on the uplink CCCH which includes the U-RNTI identical to that found in UTRAN MOBILITY INFORMATION message received in step 2. The CELL UPDATE message shall also contain IE "Cell update cause" with this IE set to "paging response". After the SS receives this message, it transmits a CELL UPDATE CONFIRM message which includes IE "~~DRX Indicator~~RRC State Indicator" set to value "~~No DRX~~CELL_FACH" to the UE on the downlink DCCH. The UE shall return to CELL_FACH state.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The initial state of the UE is CELL_FACH state. UE has been allocated both C-RNTI and U-RNTI during RRC connection establishment phase.
2	←		UTRAN MOBILITY INFORMATION	Contains new C-RNTI and U-RNTI identities.
3	→		UTRAN MOBILITY INFORMATION CONFIRM	
4	←		PAGING TYPE 1	SS pages the UE using the new U-RNTI allocated in step 2.
5	→		CELL UPDATE	UE shall trigger cell updating. The message shall indicate the same U-RNTI assigned in the UTRAN MOBILITY INFORMATION message in step 2.
6	←		CELL UPDATE CONFIRM	IE "~~DRX indicator~~RRC State Indicator" is set to "~~No DRX~~CELL_FACH".

Specific Message Content

UTRAN MOBILITY INFORMATION (Step 2)

Use the same message sub-type as in Annex A, with the following exceptions:

Information Element	Value/remark
New U-RNTI	
- SRNC Identity	'0000 0000 0001'
- S-RNTI	'0101 0101 0101 0101 0101'
New C-RNTI	'1010 1010 1010 1010'
~~DRX Indicator~~RRC State Indicator	~~DRX with cell updating~~CELL_PCH

UTRAN MOBILITY INFORMATION CONFIRM (Step 3)

Only the message type IE is checked in this message.

PAGING TYPE 1 (Step 4)

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

Information Element	Value/remark
Page Record List - Paging record - CHOICE Paging originator - U-RNTI - SRNC Identity - S-RNTI BCCH modification info	 UTRAN originator '0000 0000 0001' '0101 0101 0101 0101 0101' Not Present

CELL UPDATE (Step 5)

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI ~~Integrity check info~~ ~~AM_RLC error indicator (for C-plane)~~ ~~AM_RLC error indicator (for U-plane)~~ START List Cell Update Cause ~~Protocol error indicator~~ ~~Measured results on RACH~~ ~~Protocol error information~~	 Check to see if set to '0000 0000 0001' Check to see if set to '0101 0101 0101 0101 0101' ~~Not checked~~ ~~Check to see if set to 'FALSE'~~ ~~Check to see if set to 'FALSE'~~ Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE Check to see if set to 'Paging Response' ~~Check to see if it is absent or set to 'FALSE'~~ ~~Check to see if it is absent~~ ~~Check to see if it is absent~~

CELL UPDATE CONFIRM (Step 6)

Use the same message sub-type as in Annex A.

8.3.3.1.5 Test requirement

After step 2 the UE shall transmit an UTRAN MOBILITY INFORMATION CONFIRM message on the uplink DCCH. The MAC PDU carrying this message shall comprise either the new C-RNTI or U-RNTI allocated in the "UE-id" field of the MAC header.

After step 4 the UE shall transmit a CELL UPDATE message on the uplink CCCH with IE "Cell update cause" set to "paging response". The IE "U-RNTI" shall be identical to the IE "New RNTI" found in UTRAN MOBILITY INFORMATION message sent by the SS in step 2.

8.3.3.2 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 UTRAN MOBILITY INFORMATION message, which contains an error in one of the mandatory IE, 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 new connected mode identities conveyed in an erroneous UTRAN MOBILITY INFORMATION message. To confirm that the UE 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: 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

Test Procedure

The UE is brought to CELL_FACH state. SS transmits a UTRAN MOBILITY INFORMATION message to the UE on the DCCH using UM-RLC mode. In this message, the IE "~~DRx Indicator~~RRC State Indicator" is set to one of the spare values. A new U-RNTI identity is also present in this message. The UE shall respond by transmitting the UTRAN MOBILITY INFORMATION FAILURE message, indicating "protocol error" in IE "failure cause" and also "Information element not comprehended" in IE "Protocol error information". After receiving the UTRAN MOBILITY INFORMATION FAILURE message, SS waits for a duration to allow T305 to expire. The UE shall transmit CELL ~~UDPATE~~ UPDATE message with the original U-RNTI identity assigned. SS complete this test by sending 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	Contains a new U-RNTI identity, but a spare value is used in the IE "~~DRx indicator~~RRC State Indicator"
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	UE shall trigger periodic cell updating. The message shall not contain the U-RNTI given in the UTRAN MOBILITY INFORMATION message in step 2.
6	←		CELL UPDATE CONFIRM	

Specific Message Content

UTRAN MOBILITY INFORMATION (Step 2)

Use the same message sub-type as in Annex A, with the following exceptions:

Information Element	Value/remark
New U-RNTI - SRNC Identity - S-RNTI ~~DRX Indicator~~RRC State Indicator	 0000 0000 0001B 0000 0000 0000 0000 00011B Set to one of the spare value

UTRAN MOBILITY INFORMATION FAILURE (Step 3)

Information Element	Value/remark
Failure Cause Protocol Error Information	Check to see if set to 'Protocol error' Check to see if set to 'Information Element not comprehended'

CELL UPDATE (Step 5)

Information Element	Value/remark
U-RNTI - SRNC Identity - S-RNTI ~~Integrity check info~~ ~~AM_RLC error indicator (for C-plane)~~ ~~AM_RLC error indicator (for U-plane)~~ START List Cell update cause ~~Protocol error indicator~~ ~~Measured results on RACH~~ ~~Protocol error information~~	Shall be the same as the original U-RNTI allocated Check to see if set to '0000 0000 0001'B Check to see if set to '0000 0000 0000 0000 0001'B ~~Not checked~~ ~~Check to see if set to 'FALSE'~~ ~~Check to see if set to 'FALSE'~~\ Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE Check to see if set to 'Periodic Cell Updating' ~~Check to see if it is absent or set to 'FALSE'~~ ~~Check to see if it is absent~~ ~~Check to see if it is absent~~

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 "information element not comprehended" 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

8.3.4.1 Active set update in soft handover: Radio Link addition

8.3.4.1.1 Definition

8.3.4.1.2 Conformance requirement

Radio link addition is triggered in the network's RRC layer. The RRC entity in the network first configures the new radio link. Transmission and reception then begin immediately. This procedure is to update the active set of the connection between the UE and UTRAN. The UTRAN then transmits an ACTIVE SET UPDATE message to the UE. The UE configures layer 1 to begin reception for the additional radio link. After the UE receives confirmation from the physical layer in the UE, an ACTIVE SET UPDATE COMPLETE message is sent to the UTRAN.

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.1.3 Test purpose

To confirm that the UE continues to communicate with the SS on both the additional radio link and an already existing radio link after the radio link addition.

8.3.4.1.4 Method of test

Initial Condition

System Simulator: 2cells - Cell 1 is active, Cell 2 is active

UE: CS-CELL_DCH_Initial (state 6-1) or PS-CELL_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

Initially, the UE establishes a radio access bearer in the CELL_DCH state in cell 1. The SS begins to configure the new radio link to be added from cell 2. Then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes the IE "Radio Link Addition Information" (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID). When the UE receives this message, the UE shall configure layer 1 to begin reception without affecting the current uplink and downlink activities of existing radio links. After the UE confirms the synchronization with the new radio link from cell 2, the UE shall transmit an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. The UE continues to communicate with the SS on the both radio links. To test this condition, SS ceases the operations of all uplink and downlink DPCH from cell 1. SS shall observe that the data communication for both DCCH and DTCH channels continue as per normal using cell 2, as if cell 1 is still operational.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is brought to CELL_DCH state in cell 1, after the successful establishment of a radio access bearer service.
2				The SS configures an additional radio link in the downlink direction from cell 2.
3	←		ACTIVE SET UPDATE	SS transmits this message in cell 1 on downlink DCCH using AM RLC. The message includes IE "Radio Link Addition Information". (e.g. Downlink DPCH information and other optional parameters relevant for the additional radio links with Primary CPICH info used for the reference ID in cell 2)
4	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link to cell 2, without interfering with existing connections on the radio link in cell 1. SS ceases all Tx and Rx activities in cell 1. But it shall be able to communicate with UE through cell 2.

Specific Message Content

ACTIVE SET UPDATE

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
- Downlink DPCH info for each RL	
- 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
- CHOICE 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	Not Present
- 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

8.3.4.1.5 Test requirement

After step 3 the UE shall configures a new radio link to cell.2, with the connection on the old radio link in cell 1 remaining operational and unaffected. It shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC to acknowledge the completion of the active set additional procedure.

After step 4 the SS shall continue to communicate with the UE using the radio links added to the UE from cell 2.

8.3.4.2 Active set update in soft handover: Radio Link removal

8.3.4.2.1 Definition

8.3.4.2.2 Conformance requirement

This procedure is to update the active set of the connection between the UE and the UTRAN after the UTRAN has commanded a removal of a radio link from the current active set. The UTRAN RRC transmits an ACTIVE SET UPDATE message to the UE RRC. The UE RRC requests UE L1 to terminate transmission and reception of the radio link to be removed. The UE shall continue to communicate normally with the UTRAN using the new active set, without losing the connection link. After this the UE acknowledges the radio link removal by sending an ACTIVE SET UPDATE COMPLETE message to the UTRAN on DCCH using AM RLC.

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.2.3 Test purpose

To confirm that the UE continues to communicate with the SS on the remaining radio link after radio link removal on the active set.

8.3.4.2.4 Method of test

Initial Condition

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

UE: CS-CELL_DCH_Initial (state 6-1) or PS-CELL_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

At the start of the test, the UE establishes a radio access bearer service in the CELL_DCH state in cell 1. This is followed by a radio link addition procedure in cell 2. SS then transmits an ACTIVE SET UPDATE message, which includes IE “Radio Link Removal Information” and specifying the P-CPICH information of the cell to be removed. When the UE receives this message, the UE RRC entity shall request UE L1 entity to terminate transmission and reception of the radio link from cell 1. Then the UE transmits an ACTIVE SET UPDATE COMPLETE message to the SS on the uplink DCCH using AM RLC. The UE shall continue to communicate with the SS on the remained radio link in cell 2.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL DCH state in cell 1. SS executes test 8. 3.4.1, and the UE shall update the active set to contain cell 1 and cell 2 after the radio link addition procedure.
2	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE “Radio Link Removal Information”.
3	→		ACTIVE SET UPDATE COMPLETE	The UE shall remove the radio link associated with cell 1.
4				The SS stops transmission on the downlink direction from cell 1 and the UE shall continue to communicate on the remaining radio link in cell 2.

Specific Message Contents

ACTIVE SET UPDATE

The message to be used in this test is the same as the message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
Radio link addition information Radio link removal information - Primary CPICH info - Primary scrambling code	Not Present 1 radio link to be removed Set to the same P-CPICH scrambling code assigned for cell 1

8.3.4.2.5 Test requirement

After step 2 the UE shall remove the radio link from cell 1 and it shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH using AM RLC.

After step 3 the UE shall continue to communicate on the remaining radio link from cell 2.

8.3.4.3 Active set update in soft handover: Combined radio link addition and removal (active set is not full)

8.3.4.3.1 Definition

8.3.4.3.2 Conformance requirement

When radio links are to be replaced, the UTRAN RRC first configures the UTRAN L1 to activate the radio link(s) that are being added. The UTRAN RRC then transmits an ACTIVE SET UPDATE message to the UE RRC, which shall configure the UE L1 to terminate transmission and reception on the removed radio link(s) and begin transmission and reception on the added radio link(s). At the completion of the reconfiguration of radio links, the UE shall acknowledge the replacement with an ACTIVE SET UPDATE COMPLETE message.

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.3.3 Test purpose

To confirm that the UE continues to communicate with the SS on the added radio link and removes radio link which exists prior to the execution of active set update procedure.

8.3.4.3.4 Method of test

Initial Condition

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

UE: CS-CELL_DCH_Initial (state 6-1) or PS-CELL_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 [Active set is not full.]

Test Procedure

The UE establishes a radio access bearer in the CELL_DCH state in cell 1. SS begin to configure the new radio link in cell 2. Then the SS transmits to the UE an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC. The message includes IE “Radio Link Addition Information” and IE “Radio Link Removal Information”, indicating the removal of cell 1 and addition of cell 2 into the active set. When the UE receives this message, the UE RRC shall terminate the transmission and reception of the removed radio link in cell 1 and then configures layer 1 to begin transmission and reception in cell 2. After the UE received confirmations from the physical layer regarding the update of active set, it transmits an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH to the SS. The UE shall continue to communicate with the SS on the added radio link in cell 2. When SS receives ACTIVE SET UPDATE COMPLETE message, it verifies that the UE has ceased any uplink transmission in cell 1.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_DCH state in cell 1
2				The SS configures an additional radio link in cell 2, starting the transmission and reception of data in cell 2. clause
3	←		ACTIVE SET UPDATE	The SS transmit this message on downlink DCCH using AM RLC which includes IE "Radio Link Addition Information" for cell 2 and IE "Radio Link Removal Information" for cell 1.
4	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link in cell 2 and removes the old radio link in cell 1.
5				The SS removes the radio link from cell 1 and the UE shall continue to communicate on the added radio link in cell 2, and not transmit any data in cell 1.

Specific Message Content

ACTIVE SET UPDATE

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
- Downlink DPCH info for each RL	
- 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
- CHOICE Spreading factor	512
- Code Number	For each DPCH, assign the same code number in the current code given in cell 2.
- Scrambling code change	Not Present
- TPC Combination Index	Not Present
- 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 assigned as for cell 1

8.3.4.3.5 Test requirement

After step 3 the UE shall remove the radio link in cell 1 and add the radio link in cell 2. Then the UE shall transmit an ACTIVE SET UPDATE COMPLETE message the uplink DCCH.

After step 4 the UE shall continue to communicate on the added radio link in cell 2. SS monitors the uplink direction to confirm that no data are designated for reception in cell 1.

8.3.4.4 Active set update in soft handover: ~~Unsupported~~ Invalid Configuration ~~in the UE~~

8.3.4.4.1 Definition

8.3.4.4.2 Conformance requirement

If the UTRAN attempts to remove a radio link that is not currently present in the UE's active set, 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, following the reception of a message specifying the removal of a radio link unknown to the UE.

8.3.4.4.4 Method of test

Initial Condition

System Simulator: 2 cells - Cell 1 is active, Cell 2 is active.

UE: CS-CELL_DCH_Initial (state 6-1) or PS-CELL_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

The UE establishes a radio access bearer in the CELL_DCH state in cell 1. SS requests for a radio link addition by executing the steps described in test case 8.3.4.1. The UE shall then include cell 2 into its active set and establish the transmission and reception capabilities related to cell 2. SS then transmits an ACTIVE SET UPDATE message in cell 1 on DCCH using AM RLC which includes IE "Radio Link Removal Information" This IE indicates that a cell with unknown P-CPICH scrambling code be removed from the active set. When the UE receives this message, it transmits an ACTIVE SET UPDATE FAILURE message which is set to "Invalid configuration ~~unacceptable~~" in IE "failure cause" on the uplink DCCH using AM RLC to the SS, and continues to communicate on the existing radio links in cell 1 and cell 2.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_DCH state in cell 1.
2				SS commands the UE to perform a radio link addition procedure by executing the steps in test case 8.3.4.1. The UE shall respond accordingly. Both cell 1 and cell 2 should be found in the active set maintained by the UE.
3	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Radio Link Removal Information". This content of this IE indicates an unknown cell.
4	→		ACTIVE SET UPDATE FAILURE	The message shall state "Invalid configuration ~~unacceptable~~" in IE "failure cause". UE shall continue to communicate normally with both cells

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	Not Present
Radio link removal information	1 radio link to be removed
- Primary CPICH info	
- Primary scrambling code	Set to an unknown scrambling code not assigned to any cells.

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 ~~unacceptable~~'

8.3.4.4.5 Test requirement

After step 3 the UE shall transmit an ACTIVE SET UPDATE FAILURE message, setting "Invalid configuration ~~unacceptable~~" in IE "failure cause" and sent on the uplink DCCH using AM RLC.

After step 4 the UE shall continue to communicate on the radio links for both cell 1 and cell 2.

8.3.4.5 Active set update in soft handover: Combined radio link addition and removal (active set is full)

8.3.4.5.1 Definition

8.3.4.5.2 Conformance requirement

When the UE active set is full, the UE shall first remove the old radio link and then add the new radio link, after it receives an ACTIVE SET UPDATE message for the combined radio link addition and removal.

Reference

3GPP TS 25.331 clause 8.3.4

8.3.4.5.3 Test purpose

To confirm that the UE removes one of existing radio links, which is indicated in an ACTIVE SET UPDATE message and continues to communicate on the added radio link.

8.3.4.5.4 Method of test

Initial Condition

System Simulator: 3 cells - Cell 1, Cell 2, and Cell 3 are all active

UE: CS-CELL_DCH_Initial (state 6-1) or PS-CELL_DCH_Initial (state 6-3) in cell 1 and cell 2 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE (The assumed maximum number for active set is 2.)

[Editor's Note] The maximum number of radio link (i.e. MaxRL) specified in CR328 of TS 25.331 is 8. However, if the UE capability is more inferior in this aspect, can the assumption above still stands?

Test Procedure

The UE establishes a radio access bearer in the CELL_DCH state in cell 1 and cell 2. The SS configures the new radio link in cell 3 and sends an ACTIVE SET UPDATE message on DCCH using AM. This message includes IE "Radio Link Addition Information" indicating cell 3 to be added into the active set, and IE "Radio Link Removal Information" indicating the removal of cell 1 from the active set. When the UE receives this message, it shall not report a failure but firstly removes the indicated radio link and then adds the new radio link. Then the UE transmits an ACTIVE SET UPDATE COMPLETE message on the DCCH using AM RLC to the SS and continues to communicate with the SS on the added radio link and the remaining old radio link.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_DCH state in cell 1 and cell 2.
2				The SS configures an additional radio link in for cell 3, and starts reception and transmission using cell 3.
3	←		ACTIVE SET UPDATE	The SS transmit this message on downlink DCCH using AM RLC which includes IE “Radio Link Addition Information” and IE “Radio Link Removal Information”. The contents of the IE dictate the addition of cell 3 into the active set and removal of cell 1 from it.
4	→		ACTIVE SET UPDATE COMPLETE	The UE shall configure a new radio link in cell 3 and removes the old radio link in cell 1.
5				The SS removes the radio link in cell 1. The UE shall continue to communicate on the added radio link in cell 3 and also the existing radio link in cell 2.

Specific Message Content

ACTIVE SET UPDATE

The message to be used in this test case isidentical to the same message sub-type found in Annex A, with the following exceptions:

Information Element	Value/remark
Radio link addition information	
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as assigned for cell 3
- Downlink DPCH info for each RL	
- 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
- CHOICE Spreading factor	512
- Code Number	For each DPCH, assign the same code number in the current code given in cell3.
- Scrambling code change	Not Present
- TPC Combination Index	Not Present
- 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 assigned as for cell 1

8.3.4.5.5 Test requirement

After step 3 the UE shall remove the radio link in cell 1 and add the radio link in cell 3. Then the UE shall transmit an ACTIVE SET UPDATE COMPLETE message on the uplink DCCH.

After step 4 the UE shall continue to communicate on the added radio link in cell 3 and on the existing old radio link in cell 2. It shall cease all transmission to cell 1.

~~8.3.4.6 Active set update in soft handover: Subsequent reception of ACTIVE SET UPDATE message / Incompatible simultaneous reconfiguration~~

~~8.3.4.6.1 Definition~~

~~8.3.4.6.2 Conformance Requirements~~

~~The UE shall ignore a subsequent ACTIVE SET UPDATE message, while it is still processing an existing active set update procedure. It shall continue to configure itself in accordance to the first ACTIVE SET UPDATE message received. When encountering a "simultaneous reconfiguration" situation, the UE shall transmit a ACTIVE SET FAILURE message on the DCCH using AM RLC with value "incompatible simultaneous reconfiguration" set in IE "failure cause". Then the UE shall continue to execute the ordered reconfiguration (for example due to a radio bearer reconfiguration) as if the ACTIVE SET UPDATE message has not been received.~~

~~Reference~~

~~3GPP TS 25.331 clause 8.3.4~~

~~8.3.4.6.3 Test Purpose~~

~~To confirm that the UE continues to execute the prior active set update request, when it receives a subsequent ACTIVE SET UPDATE messages before it has completely executed the first update procedure. To confirm that the UE transmits an ACTIVE SET UPDATE FAILURE message to report the detection of a "incompatible simultaneous reconfiguration" condition, when an ACTIVE SET UPDATE message was received before the UE can complete an on-going radio bearer reconfiguration procedure.~~

~~8.3.4.6.4 Method of test~~

~~Initial Condition~~

~~System Simulator: 2 cells – both cell 1 and cell 2 are active~~

~~UE: CS_CELL_DCH_Initial (state 6-1) or PS_CELL_DCH_Initial (state 6-3) in cell 1 and cell 2 as specified in clause 7.4 of TS 34.108, depending on the CN domain supported by the UE~~

~~Test Procedure~~

~~The UE establishes a radio access bearer in CELL_DCH state in cell 1 and cell 2. SS transmits an ACTIVE SET UPDATE message to request for the removal of cell 1 from the active list. When the UE sends an acknowledgement for this message from its RLC entity, SS immediately transmits a second ACTIVE SET UPDATE message, which specifies cell 1 to be added into the active list. SS verifies that the UE ceases transmission on the radio link associated with cell 1 when the activation time indicated in the first ACTIVE SET UPDATE message is reached. Next, SS sends a RADIO BEARER RELEASE message using AM RLC on the DCCH. In this message, SS requests the release of the radio access bearer. When RLC acknowledgement has been received from the UE, SS immediately sends an ACTIVE SET UPDATE message. In this message, SS commands the UE to add cell 1 into its active list with the activation time set to "now". The UE shall react by transmitting ACTIVE SET UPDATE FAILURE message on the DCCH using AM RLC mode. In this message, the IE "failure cause" shall be set to "incompatible simultaneous reconfiguration". When the activation time stated in RADIO BEARER RELEASE message has elapsed, the UE shall transmit the RADIO BEARER RELEASE COMPLETE message to inform that the assigned radio access bearer is release. When SS receives this message, it verifies that UE continues to communicate with the SS on the radio link associated with cell 2 only, and that no user data are exchanged on the previously available radio access bearer.~~

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is CELL_DCH state in both cell 1 and cell 2.
2	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC, requesting for cell 1 to be removed from the active set.
3	←		ACTIVE SET UPDATE	Immediately after UE acknowledges the message in step 2, SS transmits this message. This message specifies that cell 1 be added into the active set.
4				SS waits until the activation time stated in step 2 has elapsed, and verifies that the UE stops transmitting on the radio link of cell 1.
5	→		ACTIVE SET UPDATE COMPLETE	UE shall transmit this message to signal the completion of the active set update procedure triggered in step 2.
6	←		RADIO BEARER RELEASE	SS checks that UE stops all uplink activities on the radio link associated with cell 1. SS requests that the radio access bearer allocated to the UE be released.
7	←		ACTIVE SET UPDATE	SS indicates that the UE shall reinstate cell 1 into its active set, immediately after RLC acknowledgement is received for the message sent in step 6.
8	→		ACTIVE SET UPDATE FAILURE	In IE "failure cause", the reason "incompatible simultaneous reconfiguration" shall be stated.
9	→		RADIO BEARER RELEASE COMPLETE	The UE shall send this message when the activation time specified in step 6 is reached. Upon reception of this message, SS verifies that there is no more uplink user traffic on the radio access bearer.

Specific Message Contents

ACTIVE SET UPDATE (Step 2)

Use the default message for this type found in Annex A, with the following exceptions:

Information Element	Value/remark
Radio link addition information	Not Present.
Radio link removal information	
- Primary CPICH info	
- Primary scrambling code	Set to the P-CPICH scrambling code assigned to cell 1.

ACTIVE SET UPDATE (Step 3)

Use the default message for this type found in Annex A, 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 1
- Downlink DPCH info for each RL	
- 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
- CHOICE 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	Not Present
- 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 5)

Only the message type for this message is checked.

RADIO BEARER RELEASE (Step 6)

Use the same message sub-type titled "AM or UM (The others of speech in CS)" found in Annex A.

ACTIVE SET UPDATE (Step 7)

Use the same message as in that for step 3, with the following exception:

Information Element	Value/remark
Activation Time	Not Present – use default

ACTIVE SET UPDATE FAILURE (Step 8)

Information Element	Value/remark
Failure Cause	Check to see if set to "Incompatible simultaneous reconfiguration"

RADIO BEARER RELEASE COMPLETE (Step 9)

~~Information Element~~	~~Value/remark~~
~~Integrity check Info~~ ~~Uplink integrity protection activation info~~ ~~Radio bearer uplink ciphering activation time info~~	~~Not checked~~ ~~Not checked~~ ~~Not checked~~

~~8.3.4.6.5 Test Requirement~~

~~After step 5 the UE shall ignore the second ACTIVE SET UPDATE message received, terminate the radio link in relation to cell 1, and transmit ACTIVE SET UPDATE COMPLETE using AM RLC on the uplink DCCH of cell 2.~~

~~After step 7 the UE shall report the "incompatible simultaneous reconfiguration" error by transmitting ACTIVE SET UPDATE FAILURE message on the DCCH.~~

~~After step 8 the UE shall send RADIO BEARER RELEASE COMPLETE message to cell 2 on the uplink DCCH, using AM RLC mode. The UE shall stop all transmissions of user traffic on the radio access bearer assigned.~~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 omits a conditional IE. It shall transmit a ACTIVE SET UPDATE FAILURE message which set value "protocol error" in IE "failure cause" and also value "Conditional information element 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 when it receives an ACTIVE SET UPDATE message, with a conditional IE missing in the 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-CELL_DCH_Initial (state 6-1) or PS-CELL_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 (Integrity protection algorithm is not applied at the start of test)

Test Procedure

The UE establishes a radio access bearer in CELL_DCH in cell 1. SS requests that cell 2 be added into the active set by performing the steps described in test cases 8.3.4.1. The UE shall react accordingly and incorporate cell 2 into its active set. SS transmits an ACTIVE SET UPDATE message , with both IE "Integrity check info" and IE "Integrity protection mode info" present in the message. This message also commands the starting of integrity mode protection. However, the IE "integrity protection initialisation number" is omitted. The UE shall detect that it has received an invalid message. It shall then send an ACTIVE SET UPDATE FAILURE message, stating the reason "Conditional information element error" in the IE "Protocol error information". The UE shall not remove cell 1 from its current active set.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is CELL_DCH state in cell 1.
2				SS executes the steps in test case 8.3.4.1. The UE shall add cell 2 into its active set.
3	←		ACTIVE SET UPDATE	The SS transmits this message on downlink DCCH using AM RLC which includes IE "Integrity check info" and IE "Integrity protection mode info". This message indicates that integrity mode protection be started but omit the IE "integrity protection initialisation number". The message also specifies that cell 1 be removed from the active set.
4	→		ACTIVE SET UPDATE FAILURE	The message shall state "conditional information element error" in IE "protocol error information". UE shall continue to communicate normally with both cells.

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
Integrity Check Info	
- Message authentication code	Set to an arbitrary 32-bits string
- RRC Message sequence number	Set to an arbitrary integer between 0 and 15
Integrity Protection Mode Info	
- Integrity protection mode command	Start
- Downlink integration protection activation info	Not Present
- Integrity protection algorithm	Standard UMTS Integrity Algorithm UIA1
- Integrity protection initialisation number	Not Present
Radio link addition information	Not Present
Radio link removal information	
- Primary CPICH info	
- Primary scrambling code	Set to the P-CPICH scrambling code assigned to cell 1.

ACTIVE SET UPDATE FAILURE (Step 4)

Information Element	Value/remark
Protocol Error Information	
- Protocol Error Cause	Check to see if it's set to 'Conditional information element error'

8.3.4.7.5 Test Requirement

After step 3 the UE shall report a protocol error by transmitting the ACTIVE SET UPDATE FAILURE message on the DCCH. In this message, the value "Conditional information element error" shall be set in IE "Protocol Error Information". The UE shall continue to communicate normally with the SS using cell 1 and cell 2.

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

Clauses 8.3.6 contains test procedures to be used for executing Inter-system Handover from GSM to UTRAN tests. Table 8.3.6-1 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 USIM shall support service 27 to carry out these test cases.

Table 8.3.6-1

From	To	State of call	Ref. clause	Exec counter	Remark
GSM FR	UTRAN AMR (conversational/speech/ ~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS)	U10	8.3.6.1	1	call active state
GSM EFR	UTRAN AMR (conversational/speech/ ~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS)	U10	8.3.6.1	2	call active state
GSM AMR	UTRAN AMR (conversational/speech/ ~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS)	U10	8.3.6.1	3	call active state
GSM HR	UTRAN AMR (conversational/speech/ ~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS)	U10	8.3.6.1	4	call active state
GSM 14.4 kbps CS data	UTRAN (Streaming/unknown/ ~~UL~~uplink:14.4 DL:14.4 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBS)	U10	8.3.6.2	1	same data rate
GSM 28.8 kbps CS data	UTRAN (Streaming/unknown/ ~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBS)	U10	8.3.6.2	2	same data rate
GSM 57.6 kbps CS data	UTRAN (Streaming/unknown/ ~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBS)	U10	8.3.6.2	3	same data rate
GSM 14.4 kbps CS data	UTRAN (Streaming/unknown/ ~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBS)	U10	8.3.6.3	1	data rate upgrading
GSM 14.4 kbps CS data	UTRAN (Streaming/unknown/ ~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBS)	U10	8.3.6.3	2	data rate upgrading
GSM 28.8 kbps CS data	UTRAN (Streaming/unknown/ ~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBS)	U10	8.3.6.3	3	data rate upgrading
GSM FR	UTRAN AMR (conversational/speech/ ~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS)	U1	8.3.6.4	1	during call establishment
GSM FR	UTRAN AMR (conversational/speech/ ~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS)	U10	8.3.6.5	1	blind handover
GSM FR	UTRAN AMR (conversational/speech/ ~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB +	U10	8.3.6.6	1	failure case

	~~UL~~uplink:3.4 DL3.4 kbps SRBS)				

8.3.6.1 Inter system handover to UTRAN/From GSM/Speech/Success

8.3.6.1.1 Definition

8.3.6.1.2 Conformance requirement

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message from GSM and perform an inter-system handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

If the UE succeeds to establish the connection to UTRAN, it shall transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH.

Reference(s)

TS 25.331 Clause 8.3.6.

TS 04.18 Clause 3.4.4a.

8.3.6.1.3 Test purpose

To test that UE supporting both GSM and UTRAN handovers to the indicated channel in the UTRAN target cell when it is in the speech call active state in the GSM serving cell and receives a HANDOVER TO UTRAN COMMAND.

8.3.6.1.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is GSM, Cell 2 is UTRAN. GSM 11.10-1 section 26.6.5.1 shall be referenced for the default parameters of cell 1.

UE : CC State U10 in cell 1

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports UTRAN AMR,

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 GSM cell and UTRAN cell with cell selection conditions in favour of GSM cell, the UE selects the GSM cell for camping on. In UTRAN cell SIB16 is broadcast and contains the pre-configuration for conversationa/speech/~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS. After UE received and stored the SIB16, the SS brings the UE into the call active state (CC state U10) with FR speech call (for execution counter M = 1). The SS configures the dedicated channel corresponding to the pre-configuration in UTRAN cell, then sends HANDOVER TO UTRAN COMMAND indicating the dedicated channel of the target cell to the UE through the GSM serving cell. After the UE receives the command it shall configure itself accordingly and switch to the dedicated

channel of UTRAN cell. The SS checks whether the handover is performed by checking that the UE transmits HANDOVER TO UTRAN COMPLETE to the SS through DCCH of the UTRAN cell.

Depending on the PIXIT parameters, the above procedure is executed maximum four times, each time for different initial conditions:

- If the UE supports GSM FR, the procedure is executed for execution counter M = 1;
  - If the UE supports GSM EFR, the procedure is executed for execution counter M = 2;
  - If the UE supports GSM AMR, the procedure is executed for execution counter M = 3;
  - If the UE supports GSM HR, the procedure is executed for execution counter M = 4.

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	SS			The SS configures GSM and UTRAN cells, UE camps on GSM cell and received SIB16 from UTRAN cell.

2	UE			The SS bring the UE into GSM U10 state in cell 1 and
				for M = 1: the UE is in GSM FR speech call;
				for M = 2: the UE is in GSM EFR speech call;
				for M = 3: the UE is in GSM AMR speech call;
				for M = 4: the UE is in GSM HR speech call.

3	SS			The SS configures the dedicated channel with the configuration: conversational/speech/~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs in UTRAN cell.
4	←		HANDOVER TO UTRAN COMMAND	Send on cell 1 (GSM cell)
5	UE			The UE accepts the handover command and configures its lower layers using the parameters contained in the HANDOVER TO UTRAN COMMAND
6	SS			The SS waits for uplink physical channel in synchronization
7	→		HANDOVER TO UTRAN COMPLETE	The SS receives this message on DCCH of cell 2 (UTRAN cell). It implies that the down link physical channel has synchronised with UTRAN.

Specific message contents

Content of “SysInfoType16”

Information Element	Value/remark
re-EstablishmentTimer T315	30 s
PredefinedRB_Configuration	
- SRB information list	
- RB identity	1
- CHOICE RLC info choice	RLC info
- CHOICE ~~UL~~uplink RLC mode	UM RLC mode
- Transmission RLC discard	MaxDAT retransmissions
- Max_DAT	4
- Timer_MRW	100
- MaxMRW	4
- CHOICE DL RLC mode	UM RLC mode
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- ~~UL~~uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- DL logical channel mapping	
- DL transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	1
- RB identity	2
- CHOICE RLC info choice	RLC info
- CHOICE ~~UL~~uplink RLC mode	AM RLC mode
- Transmission RLC discard	MaxDAT 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 PU poll	TRUE
- Last retransmission PU poll	TRUE
- Poll windows	99
- CHOICE DL RLC mode	AM RLC mode
- In-sequence delivery	TRUE
- Receiving window size	8
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	200
- Missing PU indicator	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- ~~UL~~uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	2
- MAC logical channel priority	2
- Logical channel max loss	0
- DL logical channel mapping	
- DL transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	2
- RB identity	3
- CHOICE RLC info choice	RLC info
- CHOICE ~~UL~~uplink RLC mode	AM RLC mode
- Transmission RLC discard	MaxDAT 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 PU poll	TRUE
- Last retransmission PU poll	TRUE
- Poll windows	99
- CHOICE DL RLC mode	AM RLC mode
- In-sequence delivery	TRUE
- Receiving window size	8
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	200
- Missing PU indicator	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- ~~UL~~uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	3
- MAC logical channel priority	3
- Logical channel max loss	0
- DL logical channel mapping	
- DL transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	3
- RB identity	4
- CHOICE RLC info choice	RLC info
- CHOICE ~~UL~~uplink RLC mode	AM RLC mode
- Transmission RLC discard	MaxDAT 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 PU poll	TRUE
- Last retransmission PU poll	TRUE
- Poll windows	99
- CHOICE DL RLC mode	AM RLC mode
- In-sequence delivery	TRUE
- Receiving window size	8
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	200
- Missing PU indicator	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- ~~UL~~uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	4
- MAC logical channel priority	4
- Logical channel max loss	0
- DL logical channel mapping	
- DL transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	4
- RB information list	
- RB information to setup	
- RB identity	10
- PDCP info	Not Present
- RLC info	

- CHOICE Uplink RLC mode	TM RLC mode
- Transmission RLC discard	Not Present
- Segmentation indication	TRUE
- CHOICE Downlink RLC mode	TM RLC mode
- Segmentation indication	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- Uplink transport channel type	DCH
- Transport channel identity	2
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- DL logical channel mapping	1
- Downlink transport channel type	DCH
- Transport channel identity	2
- Logical channel identity	1
- RB information to setup	
- RB identity	11
- PDCP info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	TM RLC mode
- Transmission RLC discard	Not Present
- Segmentation indication	TRUE
- CHOICE Downlink RLC mode	TM RLC mode
- Segmentation indication	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- Uplink transport channel type	DCH
- Transport channel identity	3
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- DL logical channel mapping	1
- Downlink transport channel type	DCH
- Transport channel identity	3
- Logical channel identity	1
- RB information to setup	
- RB identity	12
- PDCP info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	TM RLC mode
- Transmission RLC discard	Not Present
- Segmentation indication	TRUE
- CHOICE Downlink RLC mode	TM RLC mode
- Segmentation indication	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- Uplink transport channel type	DCH
- Transport channel identity	4
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- DL logical channel mapping	1
- Downlink transport channel type	DCH
- Transport channel identity	4
- Logical channel identity	1
preDefTransChConfiguration	
- ~~UL~~uplink Common Transport channel Info	
- TFC subset	
- Allowed Transport Format combination	0, 1, 2, 3, 4, 5
- CHOICE Mode specific info	FDD
- CHOICE ~~UL~~uplink DCH TFCS	Normal signalling
- CHOICE Normal signalling	Addition
- CHOICE CTFC Size	6 bits
- CTFC information	0
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0

- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	1
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	11
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	12
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	13
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	23
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- ~~UL~~uplink Add or reconfigured transport channel info list	
- Transport channel identity	2
- TFS	
- Dynamic Transport format information	
- Number of Transport blocks	0
- RLC size	81
- Dynamic Transport format information	
- Number of Transport blocks	1
- RLC size	39
- Dynamic Transport format information	
- Number of Transport blocks	1
- RLC size	81
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	convolutional
- Coding Rate	1/3
- Rate matching attribute	180-220
- CRC size	12 bits
- Transport channel identity	3
- TFS	
- Dynamic Transport format information	
- Number of Transport blocks	0
- RLC size	103
- Dynamic Transport format information	
- Number of Transport blocks	1
- RLC size	103
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	convolutional
- Coding Rate	1/3

- Rate matching attribute	170-210
- CRC size	N/A
- Transport channel identity	4
- TFS	
- Dynamic Transport format information	
- Number of Transport blocks	0
- RLC size	60
- Dynamic Transport format information	
- Number of Transport blocks	1
- RLC size	60
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	convolutional
- Coding Rate	1/2
- Rate matching attribute	215-256
- CRC size	N/A
- Transport channel identity	1
- TFS	
- Dynamic Transport format information	
- Number of Transport blocks	0
- RLC size	148
- Dynamic Transport format information	
- Number of Transport blocks	1
- RLC size	148
- Semi-static Transport Format information	
- Transmission time interval	40 ms
- Type of channel coding	convolutional
- Coding Rate	1/3
- Rate matching attribute	155-165
- CRC size	16 bits
- DL Common transport channel info	
- SCCPCH TFCS	Not Present
- CHOICE Mode specific info	FDD
- CHOICE TFCS Signalling mode	Same as ~~UL~~uplink
- Added or reconfigured DL TrCH info list	
- Transport channel identity	2
- CHOICE TFS signalling mode	SameAsUL
- ~~UL~~uplink TrCH Identity	2
- DCH quality target	
- BLER Quality value	0
- Transparent mode signalling info	Not Present
- Addide or reconfigured DL TrCH info list	
- Transport channel identity	3
- CHOICE TFS signalling mode	SameAsUL
- ~~UL~~uplink TrCH Identity	3
- DCH quality target	
- BLER Quality value	0
- Transparent mode signalling info	Not Present
- Added or reconfigured DL TrCH info list	
- Transport channel identity	4
- CHOICE TFS signalling mode	SameAsUL
- ~~UL~~uplink TrCH Identity	4
- DCH quality target	
- BLER Quality value	0
- Transparent mode signalling info	Not Present
PreDefPhyChConfiguration	
-~~UL~~uplink_DPCH_InfoPredef	
- ~~UL~~uplink DPCH Info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	15 slots
- CHOICE Mode specific info	FDD
- TFCI existence	TRUE
- Puncturing Limit	0.88
- DL_ CommonInformationPredef	
- DL_DPCH_InfoCommon	
- Timing indication	initialize
- CHOICE Mode specific info	FDD
- Spreading factor and pilot	128

- Number of bits for Pilot bits	4 bits
- Fixed or Flexible Position	Fixed
- TFCI existence	FALSE
- Downlink DPCH Offset Value	0

HANDOVER TO UTRAN COMMAND

Information Element	Value/remark
RR management Protocol Discriminator	'0110'B
Skip Indicator	'0000'B
Inter System to UTRAN Handover Command Message Type	'01100011'B
Handover to UTRAN Command IEI	TBD
Length of Handover to UTRAN Command contents	Octet length of the "Handover to UTRAN Command value part"
Handover to UTRAN Command value part	PER encoded ASN.1 value of type "HandoverToUTRANCommand-v1-IEs", the content is presented in the next table.

Content of "HandoverToUTRANCommand-v1-IEs"

Information Element	Value/remark
New U-RNTI	
- SRNC Identiy	'000000000001'B
- S-RNTI-2	1
Activation time	now
Ciphering algorithm	Standard UMTS Encryption Algorithm UEA1
RAB Info	
- RAB identity	
- GSM-MAP RAB identity	'00000001'B
- CN domain identity	CS domain
CHOICE Specification mode	Preconfiguration
- Predefined configuration identity	1
- CHOICE Mode specific info	FDD
- ~~UL~~uplink DPCH info	
- ~~UL~~uplink DPCH power control info	
- Power control algorithm1	1
- Scrambling code type	long
- Reduced scrambling code number	0
- Spreading factor	128
- DL common information post	
- DL DPCH info common	
- Timing indication	initialize
- CFN target SFN frame offset	Not present
- DL DPCH power control info	
- CHOICE Mode specific info	FDD
- DPC mode	Single TPC
- DL information perRL list	
- Premary CPICH info	
- Primary scrambling code	100
- DL DPCH info perRL	
- pCPICH usage for channelEst	May be used
- DL channelisation code	
- Secondary scrambling code	1
- SF and code number	SF = 128, code number = 127
- Scrambling code change	No code change
- TPC combination index	0
- Frequency info	
- UARFCN uplink(Nu)	See PIXIT
- UARFCN downlink(Nd)	See PIXIT
Maximum allowed ~~UL~~uplink TX power	33dBm

8.3.6.1.5 Test requirement

After step 7 the ongoing call shall be continued on UTRAN cell.

8.3.6.2 Inter system handover to UTRAN/From GSM/Data/Same data rate/Success

8.3.6.2.1 Definition

8.3.6.2.2 Conformance requirement

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message from GSM and perform an inter-system handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

If the UE succeeds to establish the connection to UTRAN, it shall transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH.

Reference(s)

TS 25.331 Clause 8.3.6.

TS 04.18 Clause 3.4.4a.

8.3.6.2.3 Test purpose

To test that the UE handovers to the indicated UTRAN target cell and the data rate of the target channel is the same as the old channel when it is in the data call active state in the GSM serving cell and receives a HANDOVER TO UTRAN COMMAND.

8.3.6.2.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is GSM, Cell 2 is UTRAN. GSM 11.10-1 section 26.6.5.1 or section 26.13.1.3 (for HSCSD) shall be referenced for the default parameters of cell 1.

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/~~UL~~uplink:14.4 DL:14.4 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBs,

UE supports UTRAN Streaming/unknown/~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBs,

UE supports UTRAN Streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~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 full rate traffic channel for 28.8 kbit/s user data (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 GSM cell and the UTRAN cell, the cell selection conditions of these two cells are in favour of GSM cell. The UE selects the GSM cell for camping on. After the UE receives and stores pre-configuration information from SIB16 broadcast in the UTRAN cell, the SS brings the UE into the call active state (CC state U10) with 14.4 kbps CS data call (for execution counter M = 1). The SS configures a dedicated channel corresponding to the pre-configuration (streaming/unknown/~~UL~~uplink:14.4 DL:14.4 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS for M = 1) in UTRAN cell, then sends HANDOVER TO UTRAN COMMAND indicating the dedicated channel of the target cell to the UE through the GSM serving cell. After the UE receives the command it shall configure itself accordingly and switch to the dedicated channel of the UTRAN cell. The SS checks whether the handover is performed by checking that the UE transmits HANDOVER TO UTRAN COMPLETE to the SS through DCCH of the UTRAN cell.

Depending on the PIXIT parameters, the above procedure is executed maximum three times, each time for different initial conditions:

- If the UE supports GSM 14.4 kbps CS data and UTRAN streaming/unknown/~~UL~~uplink:14.4 DL:14.4 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs, the procedure is executed for execution counter M = 1;

- If the UE supports GSM 28.8 kbps CS data and UTRAN streaming/unknown/~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs, the procedure is executed for execution counter M = 2;

- If the UE supports GSM 57.6 kbps CS data and UTRAN streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs, the procedure is executed for execution counter M = 3;

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		SS		The SS configures GSM and UTRAN cells, the UTRAN cell broadcasts SIB16 containing pre-configuration information: For M = 1: (streaming/unknown/~~UL~~uplink:14.4 DL:14.4 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs); For M = 2: (streaming/unknown/~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs); For M = 3: (streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs). UE camps on GSM cell and received SIB16 from UTRAN cell.

2		UE		The SS bring the UE into GSM U10 state in cell 1 and
				for M = 1: the UE is in GSM 14.4 kbps CS data call;
				for M = 2: the UE is in GSM 28.8 kbps CS data call;
				for M = 3: the UE is in GSM 57.6 kbps CS data call;

3		SS		The SS configures a dedicated channel in the UTRAN cell with the configuration: For M = 1: (streaming/unknown/~~UL~~uplink:14.4 DL:14.4 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs); For M = 2: (streaming/unknown/~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs); For M = 3: (streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs)
4	←		HANDOVER TO UTRAN COMMAND	Send on cell 1 (GSM cell)
5		UE		The UE accepts the handover command and configures its lower layers using the parameters contained in the HANDOVER TO UTRAN COMMAND
6		SS		The SS waits for uplink physical channel in synchronization
7	→		HANDOVER TO UTRAN COMPLETE	The SS receives this message on DCCH of cell 2 (UTRAN cell). It implies that the down link physical channel has synchronised with UTRAN.

Specific message contents

For execution1 (M = 1):

Content of “SysInfoType16”

Information Element	Value/remark
re-EstablishmentTimer T315	30 s
PredefinedRB_Configuration	
- SRB information list	
- RB identity	1
- CHOICE RLC info choice	RLC info
- CHOICE ~~UL~~uplink RLC mode	UM RLC mode
- Transmission RLC discard	MaxDAT retransmissions
- Max_DAT	4
- Timer_MRW	100
- MaxMRW	4
- CHOICE DL RLC mode	UM RLC mode
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- ~~UL~~uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- DL logical channel mapping	
- DL transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	1
- RB identity	2
- CHOICE RLC info choice	RLC info
- CHOICE ~~UL~~uplink RLC mode	AM RLC mode
- Transmission RLC discard	MaxDAT 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 PU poll	TRUE
- Last retransmission PU poll	TRUE
- Poll windows	99
- CHOICE DL RLC mode	AM RLC mode
- In-sequence delivery	TRUE
- Receiving window size	8
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	200
- Missing PU indicator	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- ~~UL~~uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	2
- MAC logical channel priority	2
- Logical channel max loss	0
- DL logical channel mapping	
- DL transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	2
- RB identity	3
- CHOICE RLC info choice	RLC info
- CHOICE ~~UL~~uplink RLC mode	AM RLC mode
- Transmission RLC discard	MaxDAT 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 PU poll	TRUE
- Last retransmission PU poll	TRUE
- Poll windows	99
- CHOICE DL RLC mode	AM RLC mode
- In-sequence delivery	TRUE
- Receiving window size	8
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	200
- Missing PU indicator	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- ~~UL~~uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	3
- MAC logical channel priority	3
- Logical channel max loss	0
- DL logical channel mapping	
- DL transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	3
- RB identity	4
- CHOICE RLC info choice	RLC info
- CHOICE ~~UL~~uplink RLC mode	AM RLC mode
- Transmission RLC discard	MaxDAT 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 PU poll	TRUE
- Last retransmission PU poll	TRUE
- Poll windows	99
- CHOICE DL RLC mode	AM RLC mode
- In-sequence delivery	TRUE
- Receiving window size	8
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	200
- Missing PU indicator	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- ~~UL~~uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	4
- MAC logical channel priority	4
- Logical channel max loss	0
- DL logical channel mapping	
- DL transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	4
- RB information list	
- RB information to setup	
- RB identity	10
- PDCP info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	TM RLC mode
- Transmission RLC discard	Not Present

- Segmentation indication	TRUE
- CHOICE Downlink RLC mode	TM RLC mode
- Segmentation indication	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- Uplink transport channel type	DCH
- Transport channel identity	2
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- DL logical channel mapping	1
- Downlink transport channel type	DCH
- Transport channel identity	2
- Logical channel identity	1
preDefTransChConfiguration	
- ~~UL~~uplink Common Transport channel Info	
- TFC subset	
- Allowed Transport Format combination	0, 1, 2, 3
- CHOICE Mode specific info	FDD
- CHOICE ~~UL~~uplink DCH TFCS	Normal signalling
- CHOICE Normal signalling	Addition
- CHOICE CTFC Size	2 bits
- CTFC information	0
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	1
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	2
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	3
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- ~~UL~~uplink Add or reconfigured transport channel info list	
- Transport channel identity	2
- TFS	
- Dynamic Transport format information	
- Number of Transport blocks	0
- RLC size	576
- Dynamic Transport format information	
- Number of Transport blocks	1
- RLC size	576
- Semi-static Transport Format information	
- Transmission time interval	40 ms
- Type of channel coding	Turbo coding
- Rate matching attribute	145-185
- CRC size	16 bits
- Transport channel identity	1
- TFS	
- Dynamic Transport format information	
- Number of Transport blocks	0

- RLC size	148
- Dynamic Transport format information	
- Number of Transport blocks	1
- RLC size	148
- Semi-static Transport Format information	
- Transmission time interval	40 ms
- Type of channel coding	convolutional
- Coding Rate	1/3
- Rate matching attribute	155-165
- CRC size	16 bits
- DL Common transport channel info	
- SCCPCH TFCS	Not Present
- CHOICE Mode specific info	FDD
- CHOICE TFCS Signalling mode	Same as ~~UL~~uplink
- Added or reconfigured DL TrCH info list	
- Transport channel identity	2
- CHOICE TFS signalling mode	SameAsUL
- ~~UL~~uplink TrCH Identity	2
- DCH quality target	
- BLER Quality value	0
- Transparent mode signalling info	Not Present
PreDefPhyChConfiguration	
-~~UL~~uplink_DPCH_InfoPredef	
- ~~UL~~uplink DPCH Info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	15 slots
- CHOICE Mode specific info	FDD
- TFCI existence	TRUE
- Puncturing Limit	1
- DL_ CommonInformationPredef	
- DL_DPCH_InfoCommon	
- Timing indication	initialize
- CHOICE Mode specific info	FDD
- Spreading factor and pilot	128
- Number of bits for Pilot bits	8 bits
- Fixed or Flexible Position	Fixed
- TFCI existence	FALSE
- Downlink DPCH Offset Value	0

HANDOVER TO UTRAN COMMAND

Information Element	Value/remark
RR management Protocol Discriminator	'0110'B
Skip Indicator	'0000'B
Inter System to UTRAN Handover Command Message Type	'01100011'B
Handover to UTRAN Command IEI	TBD
Length of Handover to UTRAN Command contents	Octet length of the "Handover to UTRAN Command value part"
Handover to UTRAN Command value part	PER encoded ASN.1 value of type "HandoverToUTRANCommand-v1-IEs", the content is presented in the next table.

Content of “HandoverToUTRANCommand-v1-IEs”

Information Element	Value/remark
New U-RNTI	
- SRNC Identiy	‘000000000001’B
- S-RNTI-2	1
Activation time	now
Ciphering algorithm	Standard UMTS Encryption Algorithm UEA1
RAB Info	
- RAB identity	
- GSM-MAP RAB identity	‘00000001’B
- CN domain identity	CS domain
CHOICE Specification mode	Preconfiguration
- Predefined configuration identity	1
- CHOICE Mode specific info	FDD
- ~~UL~~uplink DPCH info	
- ~~UL~~uplink DPCH power control info	
- Power control algorithm1	1
- Scrambling code type	long
- Reduced scrambling code number	0
- Spreading factor	64
- DL common information post	
- DL DPCH info common	
- Timing indication	initialize
- CFN target SFN frame offset	Not present
- DL DPCH power control info	
- CHOICE Mode specific info	FDD
- DPC mode	Single TPC
- DL information perRL list	
- Premary CPICH info	
- Primary scrambling code	100
- DL DPCH info perRL	
- pCPICH usage for channelEst	May be used
- DL channelisation code	
- Secondary scrambling code	1
- SF and code number	SF = 128, code number = 127
- Scrambling code change	No code change
- TPC combination index	0
- Frequency info	
- UARFCN uplink(Nu)	See PIXIT
- UARFCN downlink(Nd)	See PIXIT
Maximum allowed ~~UL~~uplink TX power	33dBm

For execution2 (M = 2):

Content of “SysInfoType16” same as for M=1 except:

Information Element	Value/remark
preDefTransChConfiguration	
- ~~UL~~uplink Common Transport channel Info	
- TFC subset	
- Allowed Transport Format combination	0, 1, 2, 3, 4, 5
- CHOICE Mode specific info	FDD
- CHOICE ~~UL~~uplink DCH TFCS	Normal signalling
- CHOICE Normal signalling	Addition
- CHOICE CTFC Size	4 bits
- CTFC information	0
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	1
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	2
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	3
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	4
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	5
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- ~~UL~~uplink Add or reconfigured transport channel info list	
- Transport channel identity	2
- TFS	
- Dynamic Transport format information	
- Number of Transport blocks	0
- RLC size	576
- Dynamic Transport format information	
- Number of Transport blocks	1
- RLC size	576
- Dynamic Transport format information	
- Number of Transport blocks	2
- RLC size	576
- Semi-static Transport Format information	
- Transmission time interval	40 ms

- Type of channel coding	Turbo coding
- Rate matching attribute	135-175
- CRC size	16 bits
PreDefPhyChConfiguration	
-~~UL~~uplink_DPCH_InfoPredef	
- ~~UL~~uplink DPCH Info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	15 slots
- CHOICE Mode specific info	FDD
- TFCI existence	TRUE
- Puncturing Limit	1
- DL_ CommonInformationPredef	
- DL_DPCH_InfoCommon	
- Timing indication	initialize
- CHOICE Mode specific info	FDD
- Spreading factor and pilot	64
- Number of bits for Pilot bits	8 bits
- Fixed or Flexible Position	Fixed
- TFCI existence	FALSE
- Downlink DPCH Offset Value	0

HANDOVER TO UTRAN COMMAND

Information Element	Value/remark
RR management Protocol Discriminator	'0110'B
Skip Indicator	'0000'B
Inter System to UTRAN Handover Command Message Type	'01100011'B
Handover to UTRAN Command IEI	TBD
Length of Handover to UTRAN Command contents	Octet length of the "Handover to UTRAN Command value part"
Handover to UTRAN Command value part	PER encoded ASN.1 value of type "HandoverToUTRANCommand-v1-IEs", the content is presented in the next table.

Content of “HandoverToUtranCommand-v1-IEs”

Information Element	Value/remark
New U-RNTI	
- SRNC Identiy	‘000000000001’B
- S-RNTI-2	1
Activation time	now
Ciphering algorithm	Standard UMTS Encryption Algorithm UEA1
RAB Info	
- RAB identity	
- GSM-MAP RAB identity	‘00000001’B
- CN domain identity	CS domain
CHOICE Specification mode	Preconfiguration
- Predefined configuration identity	1
- CHOICE Mode specific info	FDD
- ~~UL~~uplink DPCH info	
- ~~UL~~uplink DPCH power control info	
- Power control algorithm1	1
- Scrambling code type	long
- Reduced scrambling code number	0
- Spreading factor	32
- DL common information post	
- DL DPCH info common	
- Timing indication	initialize
- CFN target SFN frame offset	Not present
- DL DPCH power control info	
- CHOICE Mode specific info	FDD
- DPC mode	Single TPC
- DL information perRL list	
- Premary CPICH info	
- Primary scrambling code	100
- DL DPCH info perRL	
- pCPICH usage for channelEst	May be used
- DL channelisation code	
- Secondary scrambling code	1
- SF and code number	SF = 64, code number = 63
- Scrambling code change	No code change
- TPC combination index	0
- Frequency info	
- UARFCN uplink(Nu)	See PIXIT
- UARFCN downlink(Nd)	See PIXIT
Maximum allowed ~~UL~~uplink TX power	33dBm

For execution3 (M = 3):

Content of “SysInfoType16” same as for M=1 except:

Information Element	Value/remark
preDefTransChConfiguration	
- ~~UL~~uplink Common Transport channel Info	
- TFC subset	
- Allowed Transport Format combination	0, 1, 2, 3, 4, 5, 6, 7, 8, 9
- CHOICE Mode specific info	FDD
- CHOICE ~~UL~~uplink DCH TFCS	Normal signalling
- CHOICE Normal signalling	Addition
- CHOICE CTFC Size	4 bits
- CTFC information	0
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	1
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	2
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	3
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	4
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	5
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	6
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	7
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	8

- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	9
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- ~~UL~~uplink Add or reconfigured transport channel info list	
- Transport channel identity	2
- TFS	
- Dynamic Transport format information	
- Number of Transport blocks	0
- RLC size	576
- Dynamic Transport format information	
- Number of Transport blocks	1
- RLC size	576
- Dynamic Transport format information	
- Number of Transport blocks	2
- RLC size	576
- Dynamic Transport format information	
- Number of Transport blocks	3
- RLC size	576
- Dynamic Transport format information	
- Number of Transport blocks	4
- RLC size	576
- Semi-static Transport Format information	
- Transmission time interval	40 ms
- Type of channel coding	Turbo coding
- Rate matching attribute	125-165
- CRC size	16 bits
PreDefPhyChConfiguration	
- ~~UL~~uplink_DPCH_InfoPredef	
- ~~UL~~uplink DPCH Info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	15 slots
- CHOICE Mode specific info	FDD
- TFCI existence	TRUE
- Puncturing Limit	1
- DL_ CommonInformationPredef	
- DL_DPCH_InfoCommon	
- Timing indication	initialize
- CHOICE Mode specific info	FDD
- Spreading factor and pilot	32
- Number of bits for Pilot bits	8 bits
- Fixed or Flexible Position	Fixed
- TFCI existence	FALSE
- Downlink DPCH Offset Value	0

HANDOVER TO UTRAN COMMAND

Information Element	Value/remark
RR management Protocol Discriminator	'0110'B
Skip Indicator	'0000'B
Inter System to UTRAN Handover Command Message Type	'01100011'B
Handover to UTRAN Command IEI	TBD
Length of Handover to UTRAN Command contents	Octet length of the "Handover to UTRAN Command value part"
Handover to UTRAN Command value part	PER encoded ASN.1 value of type "HandoverToUTRANCommand-v1-IEs", the content is presented in the next table.

Content of "HandoverToUTRANCommand-v1-IEs"

Information Element	Value/remark
New U-RNTI	
- SRNC Identiy	'000000000001'B
- S-RNTI-2	1
Activation time	now
Ciphering algorithm	Standard UMTS Encryption Algorithm UEA1
RAB Info	
- RAB identity	
- GSM-MAP RAB identity	'00000001'B
- CN domain identity	CS domain
CHOICE Specification mode	Preconfiguration
- Predefined configuration identity	1
- CHOICE Mode specific info	FDD
- ~~UL~~uplink DPCH info	
- ~~UL~~uplink DPCH power control info	
- Power control algorithm1	1
- Scrambling code type	long
- Reduced scrambling code number	0
- Spreading factor	16
- DL common information post	
- DL DPCH info common	
- Timing indication	initialize
- CFN target SFN frame offset	Not present
- DL DPCH power control info	
- CHOICE Mode specific info	FDD
- DPC mode	Single TPC
- DL information perRL list	
- Premary CPICH info	
- Primary scrambling code	100
- DL DPCH info perRL	
- pCPICH usage for channelEst	May be used
- DL channelisation code	
- Secondary scrambling code	1
- SF and code number	SF = 32, code number = 31
- Scrambling code change	No code change
- TPC combination index	0
- Frequency info	
- UARFCN uplink(Nu)	See PIXIT
- UARFCN downlink(Nd)	See PIXIT
Maximum allowed ~~UL~~uplink TX power	33dBm

8.3.6.2.5 Test requirement

After step 7 the ongoing call shall be continued on UTRAN cell.

8.3.6.3 Inter system handover to UTRAN/From GSM/Data/Data rate upgrading/Success

8.3.6.3.1 Definition

8.3.6.3.2 Conformance requirement

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message from GSM and perform an inter-system handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

If the UE succeeds to establish the connection to UTRAN, it shall transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH.

Reference(s)

TS 25.331 Clause 8.3.6.

TS 04.18 Clause 3.4.4a.

8.3.6.3.3 Test purpose

To test that the UE being in the data call active state handovers from the GSM serving cell to the indicated channel of a higher data rate in the UTRAN target cell after it receives a HANDOVER TO UTRAN COMMAND.

8.3.6.3.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is GSM, Cell 2 is UTRAN. GSM 11.10-1 section 26.6.5.1 or section 26.13.1.3(for HSCSD) shall be referenced for the default parameters of cell 1.

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/~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBs,

UE supports UTRAN Streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~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 full rate traffic channel for 28.8 kbit/s user data (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 GSM cell and the UTRAN cell with cell selection conditions in favour of GSM cell. In UTRAN cell SIB16 is broadcast. The UE selects the GSM cell and received the pre-configuration information from SIB16. Then the SS brings the UE into the call active state (CC state U10) with 14.4 kbps CS data call (for execution counter M = 1). The SS configures a dedicated channel corresponding to the pre-configuration (streaming/unknown/~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS for M = 1), then sends HANDOVER TO UTRAN COMMAND indicating the dedicated channel of the target cell to the UE through the GSM serving 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 HANDOVER TO UTRAN COMPLETE to the SS through DCCH of the UTRAN cell.

Depending on the PIXIT parameters, the above procedure is executed maximum three times, each time for different conditions:

- If the UE supports GSM 14.4 kbps CS data and UTRAN streaming/unknown/~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs, the procedure is executed for execution counter M = 1;
- If the UE supports GSM 14.4 kbps CS data and UTRAN streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs, the procedure is executed for execution counter M = 2;
- If the UE supports GSM 28.8 kbps CS data and UTRAN streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs, the procedure is executed for execution counter M = 3;

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		SS		The SS configures GSM and UTRAN cells, the UTRAN cell broadcasts SIB16 containing pre-configuration information: For M = 1: (streaming/unknown/~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs); For M = 2: (streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs); For M = 3: (streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs). UE camps on GSM cell and received SIB16 from UTRAN cell.

2	UE			The SS bring the UE into GSM U10 state in cell 1 and
				for M = 1: the UE is in GSM 14.4 kbps CS data call;
				for M = 2: the UE is in GSM 14.4 kbps CS data call;
				for M = 3: the UE is in GSM 28.8 kbps CS data call;

3		SS		The SS configures a dedicated channel in the UTRAN cell with the configuration: For M = 1: (streaming/unknown/~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs); For M = 2: (streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs); For M = 3: (streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs)
4	←		HANDOVER TO UTRAN COMMAND	Send on cell 1 (GSM cell)
5	UE			The UE accepts the handover command and configures its lower layers using the parameters contained in the HANDOVER TO UTRAN COMMAND
6		SS		The SS waits for uplink physical channel in synchronization
7	→		HANDOVER TO UTRAN COMPLETE	The SS receives this message on DCCH of cell 2 (UTRAN cell). It implies that the down link physical channel has synchronised with UTRAN.

Specific message contents

For execution1 (M = 1):

Same as the default message contents in clause 8.3.6.2 for M = 2.

For execution2 (M = 2):

Same as the default message contents in clause 8.3.6.2 for M = 3.

For execution3 (M = 3):

Same as the default message contents in clause 8.3.6.2 for M = 3.

8.3.6.3.5 Test requirement

After step 7 the ongoing call shall be continued on UTRAN cell.

8.3.6.4 Inter system handover to UTRAN/From GSM/Speech/Establishment/Success

8.3.6.4.1 Definition

8.3.6.4.2 Conformance requirement

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message from GSM and perform an inter-system handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

If the UE succeeds to establish the connection to UTRAN, it shall transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH.

Reference(s)

TS 25.331 Clause 8.3.6.

TS 04.18 Clause 3.4.4a.

8.3.6.4.3 Test purpose

To test that the UE supporting both GSM and UTRAN handovers from the GSM serving cell to the indicated channel in UTRAN target cell when the UE is in the call establishment phase and receives a HANDOVER TO UTRAN COMMAND.

8.3.6.4.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is GSM, Cell 2 is UTRAN. GSM 11.10-1 section 26.6.5.1 shall be referenced for the default parameters of cell 1.

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 GSM cell and UTRAN cell with the cell selection conditions in favour of GSM cell. The UE selects the GSM cell. After the UE camps on the GSM cell and received SIB16 broadcast in the UTRAN cell, the UE is triggered to make an MO speech call. After the SS received SETUP message it configures a dedicated channel corresponding to the predefined configuration (conversationa/speech/~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS) described by SIB16, then the SS sends HANDOVER TO UTRAN COMMAND indicating the dedicated channel to the UE through the GSM serving cell. After the UE receives the command and it shall configure itself accordingly and switch to the new channel of UTRAN cell. The SS checks whether the handover is performed by checking that the UE transmits HANDOVER TO UTRAN COMPLETE to the SS through DCCH of the UTRAN cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	SS			The SS configures GSM and UTRAN cells, UE camps on GSM cell and received SIB16 from UTRAN cell.
2	UE			To trigger UE to make an MO call
3	→		CHANNEL REQUEST	initiate outgoing call
4	←		IMMEDIATE ASSIGNMENT	SDCCH, U0
5	→		CM SERVICE REQUEST	U0.1
6	→		SETUP	U1
7	SS			The SS configures a dedicated channel with the configuration: conversational/speech/~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs in UTRAN cell.
8	←		HANDOVER TO UTRAN COMMAND	Send on cell 1 (GSM cell)
9	UE			The UE accepts the handover command and configures its lower layers using the parameters contained in the HANDOVER TO UTRAN COMMAND
10	SS			The SS waits for uplink physical channel in synchronization
11	→		HANDOVER TO UTRAN COMPLETE	The SS receives this message on DCCH of cell 2 (UTRAN cell). It implies that the down link physical channel has synchronised with UTRAN.

Specific message contents

Same as the default message contents in clause 8.3.6.1 for M = 1.

8.3.6.4.5 Test requirement

After step 11 the ongoing call shall be continued on UTRAN cell.

8.3.6.5 Inter system handover to UTRAN/From GSM/Speech/Blind HO/Success

8.3.6.5.1 Definition

8.3.6.5.2 Conformance requirement

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message from GSM and perform an inter-system handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

If the UE succeeds to establish the connection to UTRAN, it shall transmit a HANDOVER TO UTRAN COMPLETE message on the uplink DCCH.

Reference(s)

TS 25.331 Clause 8.3.6.

TS 04.18 Clause 3.4.4a.

8.3.6.5.3 Test purpose

To test that the UE handovers from the GSM serving cell to the indicated channel of UTRAN target cell when it is in the speech call active state without any knowledge of the target system (blind handover) and receives a HANDOVER TO UTRAN COMMAND.

8.3.6.5.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is GSM, Cell 2 is UTRAN. GSM 11.10-1 section 26.6.5.1 shall be referenced for the default parameters of cell 1.

UE : CC State U10 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 U10 on cell 2.

Test Procedure

The SS starts the GSM cell and the UTRAN cell with cell selection conditions in favour of GSM cell, SIB16 is not broadcast in the UTRAN cell and the UE has no any predefined configuration stored. The UE selects the GSM cell. Then the SS brings the UE into the call active state (CC state U10) with FR speech. The SS configures a dedicated channel (conversationa/speech/~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS), then sends HANDOVER TO UTRAN COMMAND indicating the dedicated channel of the target cell to the UE through the GSM serving cell. After the UE receives the command it shall configure itself accordingly and switch to the dedicated channel of UTRAN cell. The SS checks whether the handover is performed by checking that the UE transmits HANDOVER TO UTRAN COMPLETE to the SS through DCCH of the UTRAN cell.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	UE			The SS bring the UE into GSM U10 state in cell 1 and the UE has no any pre-configuration information stored
2	SS			The SS configures dedicated channel with the configuration: conversational/speech/~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs in UTRAN cell.
3	←		HANDOVER TO UTRAN COMMAND	Send on cell 1 (GSM cell)
4	UE			The UE accepts the handover command and configures its lower layers using the parameters contained in the HANDOVER TO UTRAN COMMAND
5	SS			The SS waits for uplink physical channel in synchronization
6	→		HANDOVER TO UTRAN COMPLETE	The SS receives this message on DCCH of cell 2 (UTRAN cell). It implies that the down link physical channel has synchronised with UTRAN.

Specific message contents

HANDOVER TO UTRAN COMMAND

Information Element	Value/remark
RR management Protocol Discriminator	'0110'B
Skip Indicator	'0000'B
Inter System to UTRAN Handover Command Message Type	'01100011'B
Handover to UTRAN Command IEI	TBD
Length of Handover to UTRAN Command contents	Octet length of the "Handover to UTRAN Command value part"
Handover to UTRAN Command value part	PER encoded ASN.1 value of type "HandoverToUTRANCommand-v1-IEs", content is presented in the next table.

Content of “HandoverToUTRANCommand-v1-IEs”

Information Element	Value/remark
New U-RNTI	
- SRNC Identiy	‘000000000001’B
- S-RNTI-2	1
Activation time	now
Ciphering algorithm	Standard UMTS Encryption Algorithm UEA1
RAB Info	
- RAB identity	
- GSM-MAP RAB identity	‘00000001’B
- CN domain identity	CS domain
CHOICE Specification mode	complete
- re-Establishment timer	1800 seconds
- SRB information setup list	
- RB identity	1
- CHOICE RLC info choice	RLC info
- CHOICE ~~UL~~uplink RLC mode	UM RLC mode
- Transmission RLC discard	MaxDAT retransmissions
- Max_DAT	4
- Timer_MRW	100
- MaxMRW	4
- CHOICE DL RLC mode	UM RLC mode
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- ~~UL~~uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- DL logical channel mapping	
- DL transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	1
- RB identity	2
- CHOICE RLC info choice	RLC info
- CHOICE ~~UL~~uplink RLC mode	AM RLC mode
- Transmission RLC discard	MaxDAT 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 PU poll	TRUE
- Last retransmission PU poll	TRUE
- Poll windows	99
- CHOICE DL RLC mode	AM RLC mode
- In-sequence delivery	TRUE
- Receiving window size	8
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	200
- Missing PU indicator	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- ~~UL~~uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	2
- MAC logical channel priority	2
- Logical channel max loss	0
- DL logical channel mapping	
- DL transport channel type	DCH
- Transport channel identity	1

- Logical channel identity	2
- RB identity	3
- CHOICE RLC info choice	RLC info
- CHOICE ~~UL~~uplink RLC mode	AM RLC mode
- Transmission RLC discard	MaxDAT 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 PU poll	TRUE
- Last retransmission PU poll	TRUE
- Poll windows	99
- CHOICE DL RLC mode	AM RLC mode
- In-sequence delivery	TRUE
- Receiving window size	8
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	200
- Missing PU indicator	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- ~~UL~~uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	3
- MAC logical channel priority	3
- Logical channel max loss	0
- DL logical channel mapping	
- DL transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	3
- RB identity	4
- CHOICE RLC info choice	RLC info
- CHOICE ~~UL~~uplink RLC mode	AM RLC mode
- Transmission RLC discard	MaxDAT 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 PU poll	TRUE
- Last retransmission PU poll	TRUE
- Poll windows	99
- CHOICE DL RLC mode	AM RLC mode
- In-sequence delivery	TRUE
- Receiving window size	8
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	200
- Missing PU indicator	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- ~~UL~~uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	4
- MAC logical channel priority	4
- Logical channel max loss	0
- DL logical channel mapping	
- DL transport channel type	DCH

- Transport channel identity	1
- Logical channel identity	4
- RB information setup list	
- RB information to setup	
- RB identity	10
- PDCP info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	TM RLC mode
- Transmission RLC discard	Not Present
- Segmentation indication	TRUE
- CHOICE Downlink RLC mode	TM RLC mode
- Segmentation indication	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- Uplink transport channel type	DCH
- Transport channel identity	2
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- DL logical channel mapping	1
- Downlink transport channel type	DCH
- Transport channel identity	2
- Logical channel identity	1
- RB information to setup	
- RB identity	11
- PDCP info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	TM RLC mode
- Transmission RLC discard	Not Present
- Segmentation indication	TRUE
- CHOICE Downlink RLC mode	TM RLC mode
- Segmentation indication	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- Uplink transport channel type	DCH
- Transport channel identity	3
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- DL logical channel mapping	1
- Downlink transport channel type	DCH
- Transport channel identity	3
- Logical channel identity	1
- RB information to setup	
- RB identity	12
- PDCP info	Not Present
- RLC info	
- CHOICE Uplink RLC mode	TM RLC mode
- Transmission RLC discard	Not Present
- Segmentation indication	TRUE
- CHOICE Downlink RLC mode	TM RLC mode
- Segmentation indication	TRUE
- RB mapping info	
- CHOICE ~~UL~~uplink logical channel mappings	One logical channel
- Uplink transport channel type	DCH
- Transport channel identity	4
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- DL logical channel mapping	1
- Downlink transport channel type	DCH
- Transport channel identity	4
- Logical channel identity	1
- ~~UL~~uplink Common Transport channel Info	
- TFC subset	
- Allowed Transport Format combination	0, 1, 2, 3, 4, 5
- CHOICE Mode specific info	FDD
- CHOICE ~~UL~~uplink DCH TFCS	Normal signalling
- CHOICE Normal signalling	Addition

- CHOICE CTFC Size	6 bits
- CTFC information	0
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	1
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	11
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	12
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	13
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- CTFC information	23
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor ßc	0
- Gain factor ßd	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
- ~~UL~~uplink Add or reconfigured transport channel info list	
- Transport channel identity	2
- TFS	
- Dynamic Transport format information	
- Number of Transport blocks	0
- RLC size	81
- Dynamic Transport format information	
- Number of Transport blocks	1
- RLC size	39
- Dynamic Transport format information	
- Number of Transport blocks	1
- RLC size	81
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	convolutional
- Coding Rate	1/3
- Rate matching attribute	180-220
- CRC size	12 bits
- Transport channel identity	3
- TFS	
- Dynamic Transport format information	
- Number of Transport blocks	0
- RLC size	103
- Dynamic Transport format information	
- Number of Transport blocks	1

- RLC size	103
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	convolutional
- Coding Rate	1/3
- Rate matching attribute	170-210
- CRC size	N/A
- Transport channel identity	4
- TFS	
- Dynamic Transport format information	
- Number of Transport blocks	0
- RLC size	60
- Dynamic Transport format information	
- Number of Transport blocks	1
- RLC size	60
- Semi-static Transport Format information	
- Transmission time interval	20 ms
- Type of channel coding	convolutional
- Coding Rate	1/2
- Rate matching attribute	215-256
- CRC size	N/A
- Transport channel identity	1
- TFS	
- Dynamic Transport format information	
- Number of Transport blocks	0
- RLC size	148
- Dynamic Transport format information	
- Number of Transport blocks	1
- RLC size	148
- Semi-static Transport Format information	
- Transmission time interval	40 ms
- Type of channel coding	convolutional
- Coding Rate	1/3
- Rate matching attribute	155-165
- CRC size	16 bits
- DL Common transport channel info	
- SCCPCH TFCS	Not Present
- CHOICE Mode specific info	FDD
- CHOICE TFCS Signalling mode	Same as ~~UL~~uplink
- Added or reconfigured DL TrCH info list	
- Transport channel identity	2
- CHOICE TFS signalling mode	SameAsUL
- ~~UL~~uplink TrCH Identity	2
- DCH quality target	
- BLER Quality value	0
- Transparent mode signalling info	Not Present
- Addide or reconfigured DL TrCH info list	
- Transport channel identity	3
- CHOICE TFS signalling mode	SameAsUL
- ~~UL~~uplink TrCH Identity	3
- DCH quality target	
- BLER Quality value	0
- Transparent mode signalling info	Not Present
- Added or reconfigured DL TrCH info list	
- Transport channel identity	4
- CHOICE TFS signalling mode	SameAsUL
- ~~UL~~uplink TrCH Identity	4
- DCH quality target	
- BLER Quality value	0
- Transparent mode signalling info	Not Present
- ~~UL~~uplink DPCH Info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	15 slots
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
- CHOICE Mode specific info	FDD
- Scrambling code type	Long
- Scrambling code number	0

- Number of DPDCH	Not Present(1)
- spreading factor	64
- TFCI existence	TRUE
- Number of FBI bit	Not Present(0)
- Puncturing Limit	0.88
- CHOICE Mode specific info	FDD
- DL PDSCH information	Not present
- CPCH SET info	Not present
- Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- Timing indication	initialize
- CFN target SFN frame offset	Not present
- CHOICE Mode specific info	FDD
- Downlink DPCH power control information	
- DPC mode	0 (single)
- Spreading factor and pilot	128
- Number of bits for Pilot bits	4 bits
- Fixed or Flexible Position	Fixed
- TFCI existence	FALSE
- Downlink DPCH Offset Value	0
- DPCH compressed mode info	
-TGPSI	1
-TGPS Status Flag	Inactive
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- ~~UL~~uplink/DL Mode	DL
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- S field	
- DL information perRL list	
- Premary CPICH info	
- Primary scrambling code	100
- DL DPCH info perRL	
- pCPICH usage for channelEst	May be used
- DL channelisation code	
- Secondary scrambling code	1
- SF and code number	SF = 128, code number = 127
- Scrambling code change	No code change
- TPC combination index	0
- Frequency info	
- UARFCN uplink	See PIXIT
- UARFCN downlink	See PIXIT
- Maximum allowed ~~UL~~uplink transmission power	33 dbm

8.3.6.5.5 Test requirement

At step 6 the HANDOVER TO UTRAN COMPLETE shall be received on UTRAN cell.

8.3.6.6 Inter system handover to UTRAN/From GSM/Speech/Failure

8.3.6.6.1 Definition

8.3.6.6.2 Conformance requirement

The UE shall be able to receive a HANDOVER TO UTRAN COMMAND message from GSM and perform an inter-system handover, even if no prior UE measurements have been performed on the target UTRAN cell and/or frequency.

If the UE can not establish the connection to UTRAN, it shall reactivate the old channel and transmit a HANDOVER FAILURE message on the old channel.

Reference(s)

TS 25.331 Clause 8.3.6.

TS 04.18 Clause 3.4.4a.

8.3.6.6.3 Test purpose

To test that the UE reactivates the old channel and transmits HANDOVER FAILURE message to the network on the old channel in the GSM cell when it received HANDOVER TO UTRAN COMMAND and the handover to UTRAN failed.

8.3.6.6.4 Method of test

Initial conditions

System Simulator : 2 cells - Cell 1 is GSM, Cell 2 is UTRAN. GSM 11.10-1 section 26.6.5.1 shall be referenced for the default parameters of cell 1.

UE : CC State U10 in cell 1

Related ICS/IXIT statement(s)

UE supports both GSM and UTRAN Radio Access Technologies,

UE supports UTRAN AMR,

UE supports GSM RF,

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 GSM cell and the UTRAN cell with cell selection conditions in favour of GSM cell. SIB16 is broadcast in UTRAN cell. The UE selects the GSM cell, and received the SIB16. Then the SS brings the UE into the call active state (CC state U10) with FR speech call. The SS does not configure the dedicated channel corresponding to the predefined configuration described in SIB16 (conversationa/speech/~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS), then sends HANDOVER TO UTRAN COMMAND indicating the dedicated channel of the target cell to the UE through the GSM serving cell. The UE will not be able to establish the connection to UTRAN. The SS checks that the handover is failed by checking that the UE returns to the old channel and transmits HANDOVER FAILURE to the SS through the old channel.

Expected sequence

Step	Direction		Message	Comments
	UE	SS		
1	SS			The SS starts GSM and UTRAN cells, SIB16 is broadcast in the UTRAN cell. The UE camps on GSM cell and received SIB16.
2	UE			The SS bring the UE into GSM U10 state in cell 1
3	SS			There is no dedicated channel with the configuration: conversational/speech/~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBs in UTRAN cell.
4	←		HANDOVER TO UTRAN COMMAND	Send on cell 1 (GSM cell)
5	UE			The UE accepts the handover command and configures its lower layers using the parameters contained in the HANDOVER TO UTRAN COMMAND
6	UE			The UE fails to establish a connection to UTRAN cell
7	→		HANDOVER FAILURE	The SS receives this message on DCCH of cell 1 (old channel in GSM cell)

Specific message contents

Same as the specific message contents in clause 8.3.6.1 for M = 1.

8.3.6.6.5 Test requirement

At step 7 the HANDOVER FAILURE shall be received on GSM cell.

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 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/ ~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS)	GSM AMR	U10	8.3.7.1	1	call active state
UTRAN AMR (conversational/speech/ ~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS)	GSM EFR	U10	8.3.7.1	2	call active state
UTRAN AMR (conversational/speech/ ~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.1	3	call active state
UTRAN AMR (conversational/speech/ ~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS)	GSM HR	U10	8.3.7.1	4	call active state
UTRAN (Streaming/unknown/ ~~UL~~uplink:14.4 DL:14.4 kbps/CS RAB + ~~UL~~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/ ~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~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/ ~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~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/ ~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~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/ ~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~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/ ~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~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/ ~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U1	8.3.7.4	1	During call establishment
UTRAN AMR (conversational/speech/ ~~UL~~uplink:12.2 DL:12.2 kbps/CS RAB + ~~UL~~uplink:3.4 DL3.4 kbps SRBS)	GSM FR	U10	8.3.7.5	1	failure case

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 INTER-SYSTEM HANDOVER 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 this specification.

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 INTER-SYSTEM HANDOVER COMMAND.

8.3.7.1.4 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 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 INTER-SYSTEM HANDOVER 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	←		InterSystemHandoverCommand-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 InterSystemHandoverCommand-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:

InterSystemHandoverCommand-GSM

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	
- Message sequence number	
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- CHOICE system	GSM
- Message	GSM HANDOVER COMMAND formatted as BIT STRING(1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 11.10-1, Release 1999, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 3

For execution 2:

InterSystemHandoverCommand-GSM

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	
- Message sequence number	
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- CHOICE system	GSM
- Message	GSM HANDOVER COMMAND formatted as BIT STRING(1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 11.10-1, Release 1999, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 2

For execution 3:

InterSystemHandoverCommand-GSM

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	
- Message sequence number	
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- CHOICE system	GSM
- Message	GSM HANDOVER COMMAND formatted as BIT STRING(1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 2 in clause 26.6.5.1 of GSM 11.10-1, Release 1999, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 1

For execution 4:

InterSystemHandoverCommand-GSM

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	
- Message sequence number	
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- CHOICE system	GSM
- Message	GSM HANDOVER COMMAND formatted as BIT STRING(1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 4 in clause 26.6.5.1 of GSM 11.10-1 version 8.2.0 Release 1999, 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 INTER-SYSTEM HANDOVER 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 this specification.

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 INTER-SYSTEM HANDOVER COMMAND.

8.3.7.2.4 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 or section 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/~~UL~~uplink:14.4 DL:14.4 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBs,

UE supports UTRAN Streaming/unknown/~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBs,

UE supports UTRAN Streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~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/~~UL~~uplink:14.4 DL:14.4 kbps/CS RAB + ~~UL~~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 INTER-SYSTEM HANDOVER 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/~~UL~~uplink:14.4 DL:14.4 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBs (for M = 1); Streaming/unknown/~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBs (for M = 2); Streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~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	←		InterSystemHandoverCommand-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 InterSystemHandoverCommand-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 :

InterSystemHandoverCommand-GSM

Information Element	Value/remark
Message Type Integrity check info - Message authentication code - Message sequence number Activation time RAB Info Inter-system message - System type - CHOICE system - Message	 now Not present GSM GSM 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 11.10-1, Release 1999, 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 11.10-1, Release 1999, except that the Description of a multislot configuration supporting 14.4 kbps user data.

For execution 2:

InterSystemHandoverCommand-GSM

Information Element	Value/remark
Message Type Integrity check info - Message authentication code - Message sequence number Activation time RAB Info Inter-system message - System type - CHOICE system - Message	 now Not present GSM GSM GSM HANDOVER COMMAND formatted as BIT STRING(1..512). 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 11.10-1, Release 1999, 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 11.10-1, Release 1999, except that the Description of a multislot configuration supporting 28.8 kbps user data.

For execution 3:

InterSystemHandoverCommand-GSM

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	
- Message sequence number	
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- CHOICE system	GSM
- Message	GSM HANDOVER COMMAND formatted as BIT STRING(1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND in clause 26.13.3.1 of GSM 11.10-1, Release 1999, except that the Description of a multislot 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 INTER-SYSTEM HANDOVER 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 this specification.

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 INTER-SYSTEM HANDOVER COMMAND.

8.3.7.3.4 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 or section 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/~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBs,

UE supports UTRAN Streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~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/~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~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 INTER-SYSTEM HANDOVER 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/~~UL~~uplink:28.8 DL:28.8 kbps/CS RAB + ~~UL~~uplink:3.4 DL:3.4 kbps SRBs (for M = 1); Streaming/unknown/~~UL~~uplink:57.6 DL:57.6 kbps/CS RAB + ~~UL~~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	←		InterSystemHandoverCommand-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 InterSystemHandoverCommand-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 INTER-SYSTEM HANDOVER 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 this specification.

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 INTER-SYSTEM HANDOVER COMMAND.

8.3.7.4.4 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 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 INTER-SYSTEM HANDOVER 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	←		InterSystemHandoverCommand-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 InterSystemHandoverCommand-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

InterSystemHandoverCommand-GSM

Information Element	Value/remark
Message Type	
Integrity check info	
- Message authentication code	
- Message sequence number	
Activation time	now
RAB Info	Not present
Inter-system message	
- System type	GSM
- CHOICE system	GSM
- Message	GSM HANDOVER COMMAND formatted as BIT STRING(1..512). The contents of the HANDOVER COMMAND see next table.

HANDOVER COMMAND

Same as the HANDOVER COMMAND for M = 4 in clause 26.6.5.2 of GSM 11.10-1 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 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(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 INTER-SYSTEM HANDOVER FAILURE message to the network on the old channel in UTRAN cell when it receives an INTER-SYSTEM HANDOVER 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 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 can not 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 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	←		InterSystemHandoverCommand-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	→		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	
n	→		HANDOVER ACCESS	The last handover access burst before T3124 times out.
n+1	→		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.

8.3.7.5.5 Test requirement

After step n+1 the SS shall receive INTER-SYSTEM HANDOVER FAILURE message on the old channel of the UTRAN cell.

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.]

8.4 Measurement procedure

8.4.1 Measurement Control and Report

8.4.1.1 Measurement Control and Report: Intra-frequency measurement for transition from idle mode to CELL_DCH state

8.4.1.1.1 Definition

8.4.1.1.2 Conformance requirement

After a state transition from idle mode to CELL_DCH state, the UE shall continue to monitor the list of neighbouring cells which is specified in ~~the SYSTEM INFORMATION BLOCK TYPE~~System Information Block type 11 ~~(~~or 12~~)~~ messages on BCCH. When entering CELL_DCH state, ~~T~~the UE shall send a MEASUREMENT REPORT message when reporting criteria are satisfied. During CELL_DCH state, if the UE receives a MEASUREMENT CONTROL message, it shall terminate existing monitoring activities for the neighbouring cells previously known from ~~SYSTEM INFORMATION BLOCK TYPE~~System Information Block type 11 ~~(~~or 12~~)~~ messages. It shall perform the measurement and reporting tasks based on the latest MEASUREMENT CONTROL message received.

Reference

3GPP TS 25.331 clause 8.4.1.8.1~~9~~

8.4.1.1.3 Test Purpose

To confirm that the UE continue to monitor ~~CPICH RSCP~~ intra-frequency measurement quantity of the neighbour cells listed in System Information Block type 11 or 12 messages, after it has entered the CELL_DCH state from idle mode. When the reporting criteria specified in ~~SYSTEM INFORMATION BLOCK TYPE~~System Information Block type 11 ~~(~~or 12~~)~~ messages have been met, it shall report the measurements t~~o the SS~~ using MEASUREMENT REPORT messages. ~~To confirm that in CELL_DCH state, the UE respond to a modification of measurement criteria and adjust its measurement and reporting mechanism accordingly.~~ To confirm that the UE terminates monitoring ~~and measurement~~ activities for the neighbour cells found in ~~SYSTEM INFORMATION BLOCK TYPE~~System Information Block type 11 ~~(~~or 12~~)~~ message~~s~~, after it has received a MEASUREMENT CONTROL message ~~which~~ that specifies the measurement type to be "intra-frequency measurement". To confirm that the UE reconfigures the monitoring and reporting activities based on the last MEASUREMENT CONTROL message received.

8.4.1.1.4 Method of test

Initial Condition

System Simulator: 2 cells – ~~Cell 1 is active and the downlink P-CPICH has a transmission level (RSCP) of -40 dBm, cell 2 is also active but with a P-CPICH transmission power 10dB below cell 1.~~ The initial configurations of the 2 cells in the SS should follow the values indicated in the column marked "T0" in table 8.4.1.1-1. The table is found in "Test Procedure" sub-clause.

UE: CS-registered idle mode (state 2) or PS-registered idle mode (state 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 8.4.1.1-1 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 are to be applied subsequently. The exact instants on which these values shall be applied are described in the texts in this sub-clause.

Table 8.4.1.1-1

Parameter	Unit	Cell 1		Cell 2	
		T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1	
$\hat{I}_{or}/I_{oc}$	dB	14.3	5.3	-11.3	-1.3
CPICH Ec/Io	dB	-11.9	-11.8	-14.9	-18.4
CPICH RSCP	dBm	-65.7	-74.4	-68.7	-81.3

~~**Table 8.4.1.1-1**~~

The UE is initially at idle mode and has selected cell 1 for camping. The ~~SYSTEM INFORMATION BLOCK TYPE~~System Information Block type 11 messages ~~is~~ are modified with respect to the default settings to prevent reporting of CFN-SFN difference and also to include cell 2 into the monitored neighbour cell list. The key measurement parameters are as follow: measurement type = "intra-frequency measurement", measurement quantity = "CPICH RSCP", report criteria = "periodic reporting criteria", reporting interval = "12 seconds".

SS prompts the operator to make an outgoing call of a supported traffic class. The UE shall transmit a RRC CONNECTION REQUEST message on the CCCH, SS replies with RRC CONNECTION SETUP message and allocates uplink and downlink DPCH physical resources to the UE. UE shall then transmit RRC CONNECTION SETUP COMPLETE message and move to CELL_DCH state. After approximately 12 seconds, the UE shall transmit a MEASUREMENT REPORT message with measurement readings from cell 2. SS waits for 25 seconds after the sending of RRC CONNECTION SETUP message to verify that 2 consecutive MEASUREMENT REPORT messages are received.

SS sends a MEASUREMENT CONTROL message on the downlink DCCH. In this message, SS assigns an intra-frequency measurement type with the measurement quantity based on cell 2's CPICH RSCP value. Parameters used in this message are: measurement identity = "2", report criteria = "event-trigger", event identity = "1f", reporting threshold = "-~~6~~75 dBm". After receiving this message, the UE shall delete the existing measurement and reporting contexts captured from System Information Block type 11 messages. SS checks to see that no MEASUREMENT REPORT messages are sent within the next 12 seconds (which is due to periodic reporting). SS reconfigures the downlink transmission power settings according to values in column "T1" in Table 8.4.1.1-1 ~~gradually reduces the transmission power of P-CPICH in cell 2 until its RSCP value reaches -70dBm~~. The UE shall transmit MEASUREMENT REPORT messages when it detects that the CPICH RSCP of cell 2 has reached the threshold value specified.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		~~SYSTEM INFORMATION BLOCK TYPE 11~~System Information Block type 11	The UE is idle mode and camped onto cell 1. ~~Cell 2 is also active but the P-CPICH has a RSCP 10dB below that of cell 1. SYSTEM INFORMATION TYPE 12~~The System Information Block type 11 messages to be transmitted ~~is~~are different from the default settings (see specific message contents)
2				SS prompts the operator to make an outgoing call.
3	→		RRC CONNECTION REQUEST	
4	←		RRC CONNECTION SETUP	SS allocates DPCH physical channels to UE
5	→		RRC CONNECTION COMPLETE	UE transmits this message to acknowledge the RRC CONNECTION SETUP message and moves to CELL_DCH state.
6	→		MEASUREMENT REPORT	SS waits for 25 seconds. It shall receive 2 consecutive MEASUREMENT REPORT messages
7	←		MEASUREMENT CONTROL	A new measurement identity is assigned, with the reporting quantity changed to cell 2's P-CPICH RSCP. See specific message content for the rest of the message.
8				SS waits for approximately 15 seconds and verifies that no further MEASUREMENT REPORT messages are detected on the uplink DCCH.

9			SS ~~gradually reduces the transmission power of cell 2 until its CPICH RSCP value drops to -70dBm.~~re-adjusts the downlink transmission power settings according to columns “T1” in Table 8.4.1.1-1.
10	→	MEASUREMENT REPORT	SS verifies that UE transmits 2 MEASUREMENT REPORT messages at 500 msec interval to report the P-CPICH RSCP value of cell 2.

Specific Message Contents

All messages indicated below shall use the same content as described in default message content, with the following exceptions:

~~SYSTEM INFORMATION BLOCK TYPE~~System Information Block type 11 (Step 1)

Information Element	Value/Remark
~~Reference to other system information blocks~~	~~Not Present~~
SIB12 indicator	FALSE
FACH measurement occasion info	Not Present
Measurement control system information	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity ~~number~~	1
- Intra-frequency cell info list	
- ~~Removed~~ CHOICE intra-frequency ~~info list~~cell removal	~~Not Present~~Remove no intra-frequency cells
- New intra-frequency info list	Set to id of cell 2
- Intra-frequency cell id	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 2
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Cell selection and Re-selection ~~info for SIB11/12~~	0dB
- $Qoffset_{s,n}$	0dBm
- Maximum allowed UL TX power	Not Present
- HCS neighbouring cell information	-115dB
- Qqualmin	-20dB
- Qrxlevmin	
- Intra-frequency measurement quantity	0
- Filter Coefficient	CPICH RSCP
- Measurement quantity	
- Intra-frequency measurement for RACH reporting	No report
- SFN-SFN observed time difference	No report
- Reporting quantity	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	~~FALSE~~
~~- CFN-SFN observed time difference~~	
- 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	~~FALSE~~
~~- CFN-SFN observed time difference~~	Not present
- Reporting quantities for detected cells	Periodic reporting criteria
- CHOICE report criteria	Infinity
- Amount of reporting	12 seconds
- Reporting interval	Not present
- Inter-frequency measurement system information	Not Present
- Inter-~~system~~ RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present

- UE internal measurement system information	

RRC CONNECTION REQUEST (Step 3)

Information Element	Value/Remarks
Establishment cause	Check to see if set to originating call of a supported traffic class
Measured results on RACH	Check to see if this IE is absent

RRC CONNECTION SETUP (Step 4)

Use the message sub-type in clause 9 of TS 34.108, which is marked as “Transition to CELL_DCH”.

MEASUREMENT REPORT (Step 6)

Information Element	Value/Remarks
Measurement identity ~~number~~	Check to see if set to 1
Measured Results	
- CHOICE measurement	Check to see if set to “Intra-frequency measured results list”
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
~~- CFN-SFN observed time difference~~	~~Check to see if this IE 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 value to see if within acceptable range
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Event Results	Check to see if this IE is absent

MEASUREMENT CONTROL (Step 7)

Information Element	Value/Remark

Measurement Identity ~~Number~~	2
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 ~~Removed~~ intra-frequency ~~info list~~cell removal	~~Not Present~~Remove no intra-frequency cells
- New intra-frequency info list	Set to id of cell 2
- Intra-frequency cell id	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 2
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Intra-frequency measurement quantity	0
- Filter Coefficient	CPICH RSCP
- Measurement quantity	
- Intra-frequency reporting quantity	Same as in default message content
- 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	~~FALSE~~
~~- CFN-SFN observed time difference~~	
- 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	~~FALSE~~
~~- CFN-SFN observed time difference~~	Not present
- Reporting quantities for detected cells	
- Reporting cell status	Report cells w~~W~~ithin active and/or monitored
- CHOICE reported~~ing~~ cell	~~cells~~ set on used frequency ~~and~~ or within active and/or monitored ~~cells~~ set on non-used frequency
- Maximum number of reported~~ing~~ cells ~~type2~~	2
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria
- Parameters required for each events	1f
- Intra-frequency event identity	Monitored set cells
- Triggering condition~~s~~ 1	Not Present
- Triggering condition 2	Not Present
- Reporting range	Not Present
- Cells forbidden to affect reporting range	Not Present
- W	1 dB
- Hysteresis	-~~6~~75 dBm
- Threshold used frequency	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	0 msec
- Time to trigger	2
- Amount of reporting	500 msec
- Reporting interval	Not Present
- Reporting cell status	Not Present
DPCH compressed mode status info	

MEASUREMENT REPORT (Step 10)

Information Element	Value/Remarks
Measurement identity ~~number~~	Check to see if set to 2
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	Check to see if it is absent
~~- CFN-SFN observed time difference~~	~~Check to see if this IE 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
Event Results	Check to see if this IE is absent

8.4.1.1.5 Test Requirement

After step 5 the UE shall start to transmit MEASUREMENT REPORT message. The measurement quantity "CPICH RSCP" of cell 2 shall be reported to the SS at 12 seconds interval.

After step 7 the UE shall not transmit any MEASUREMENT REPORT messages within 15 seconds after SS has transmitted the MEASUREMENT CONTROL message.

After step 9 the UE shall transmit 2 MEASUREMENT REPORT messages on the uplink DCCH, to report that the CPICH RSCP value for cell 2 has dropped below the ~~specified~~ threshold stated in the MEASUREMENT CONTROL message transmitted by the SS in step 7.

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 discontinue the monitoring of the list of neighbouring cells assigned in ~~the SYSTEM INFORMATION BLOCK TYPE~~System Information Block 11 or 12 messages ~~on BCCH~~. In CELL_DCH state, when the UE receives a MESUREMENT CONTROL message requesting for inter-frequency measurement 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 clause 8.4.1.8.2~~9~~, 8.6.7.9

8.4.1.2.3 Test Purpose

To confirm that the UE ~~terminates~~ stops ~~the~~ monitoring ~~activities of~~ the list of neighbouring cell assigned in the IE "inter-frequency cell info" in ~~SYSTEM INFORMATION BLOCK TYPE~~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 ~~an existing dormant~~ stored compressed mode pattern sequence be simultaneously activated. To confirm that the UE exclude 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 – The initial configurations of the 2 cells in the SS should follow the values indicated in table 8.4.1.2-1. The table is found in "Test Procedure" sub-clause. ~~System Simulator: 2 cells – Cell 1 is active and has a transmission level (CPICH RSCP) of -50 dBm for P-CPICH, cell 4 is also active but with a transmission power 20dB below cell 1.~~

UE:CS-registered idle mode (state 2) or PS-registered idle mode (state 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 8.4.1.2-1 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
$\hat{I}_{or}/I_{oc}$	dB	5.7	2.3
CPICH Ec/Io	dB	-12.4	-15.8
CPICH RSCP	dBm	-74.3	-77.7

The UE is initially at idle mode and has selected cell 1 for camping. The ~~SYSTEM BLOCK INFORMATION TYPE~~System Information Block type 11 messages ~~is~~ are modified with respect to the default settings to prevent reporting of CFN-SFN difference, and also to include cell 4 into the monitored neighbour cells list. ~~The key measurement parameters are as follow: measurement type = "inter-frequency measurement", measurement quantity = "CPICH RSCP".~~

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 CCCH, SS replies with RRC CONNECTION SETUP message and allocates uplink and downlink dedicated physical resources to the UE. The RRC CONNECTION SETUP message contains IE "DPCH compressed mode info", signifying the establishment of a transmission pattern gap sequence with TGPSI=1. UE shall send~~s~~ RRC CONNECTION SETUP COMPLETE on the uplink DCCH and then moves to CELL_DCH state. The UE shall not transmit any MEASUREMENT REPORT messages, which pertain to measurement readings from cells belonging to the monitored set.

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 designated 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 ~~2~~4. The "DPCH compressed status info" IE in this message activates the ~~compressed mode~~transmission gap pattern sequence with TGPSI = 1. The UE shall start~~s~~ inter-frequency measurement 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 ~~time~~ interval.

In the next sequence, SS sends another MEASUREMENT CONTROL message on the downlink DCCH. In this message, the IE "Reporting cell status" is not included. The UE shall send ~~a~~ MEASUREMENT REPORT message~~s~~ on the uplink DCCH, ~~excluding~~ with the IE "Cell measured results" excluded from these messages.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	~~SYSTEM INFORMATION BLOCK TYPE 11~~System Information Block type 11	The UE is idle mode and camped onto cell 1. ~~Cell 2 is also active but has transmission power 20dB below that of cell 1. SYSTEM INFORMATION BLOCK TYPE~~ System Information Block Type 11 to be transmitted is different from the default settings (see specific message contents)
2				SS prompts the operator to make an outgoing call.
3		→	RRC CONNECTION REQUEST	
4		←	RRC CONNECTION SETUP	SS allocates dedicated physical channels to UE, as well as specifying the ~~use~~ activation of compressed mode ~~format~~ behaviour with TGCPSI = 1.
5		→	RRC CONNECTION SETUP COMPLETE	UE transmits this message to acknowledge the RRC CONNECTION SETUP message and moves to CELL_DCH state.
6				~~SS raises the CPICH RSCP of cell 2 by 10dB.~~ SS checks to see that no MEASUREMENT REPORT messages are sent from UE to cell 1.
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 ~~2~~4 and performing periodic reporting for cell~~'~~ ~~2~~ 4 CPICH RSCP. "DPCH compressed mode status info" IE is set to simultaneously activate compressed mode pattern.
10		→	MEASUREMENT REPORT	UE shall report cell ~~2's~~ 4's CPICH RSCP reading periodically.
11		←	MEASUREMENT CONTROL	SS changes the reporting criteria of cell ~~2~~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 "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
~~Reference to other system information blocks~~	~~Not Present~~
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 measurement identity ~~number~~	1
- Inter-frequency cell info list	
- ~~Removed~~ CHOICE intraer-frequency ~~info list~~cell removal	~~Not Present~~No inter-frequency cells removed
- New inter-frequency info list	Set to id of cell 24
- Inter-frequency cell id	
- Frequency info	Set to the uplink UARFCN of cell 24
- UARFCN uplink (Nu)	Set to the downlink UARFCN of cell 24
- UARFCN downlink (Nd)	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 24
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Cell selection and re-selection info ~~for SIB 11/12~~	0 dB
- $Qoffset_{s,n}$	0 dBm
- Maximum allowed UL TX power	Not Present
- HCS neighbouring cell information	-20 dB, -115dBm
- Qqualmin, Qrxlevmin	
~~- Inter-frequency measurement quantity~~	~~Inter-frequency reporting criteria~~
~~CHOICE Reporting criteria~~	~~0~~
~~- Filter coefficient~~	~~CPICH RSCP~~
~~- Measurement quantity for frequency quality estimate~~	
~~- Inter-frequency measurement reporting criteria~~	
~~- Parameters required for each event~~	~~2c~~
~~- Inter-frequency event identity~~	~~Not Present~~
~~- Threshold used frequency~~	~~Not Present~~
~~- W used frequency~~	~~2.0dB~~
~~- Hysteresis~~	~~0 sec~~
~~- Time to trigger~~	~~Infinity~~
~~- Amount of reporting~~	~~0~~
~~- Reporting interval~~	~~Not Present~~
~~- Parameters required for each non used frequency~~	~~-65dBm~~
~~- Threshold non-used frequency~~	~~0~~
~~- W non-used frequency~~	Not Present
- Inter-~~system~~ RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present
- UE internal measurement system information	

RRC CONNECTION REQUEST (Step 3)

Information Element	Value/Remarks
Establishment cause	Check to see if set to originating call of a supported traffic class
Measured results on RACH	Check to see if this IE is absent

RRC CONNECTION SETUP (Step 4)

Use the message sub-type found in TS 34.108 clause 9 which is marked as “Transition to CELL_DCH”, with the following exceptions:

Information Element	Value/Remarks
Downlink information common for all radio links	
- Downlink DPCH info common for all RL	
- CHOICE Mode	FDD
- Downlink DPCH power control information	0 (Single)
- DPC mode	Refer to the parameter set in TS 34.108
- DL rate matching restriction information	Not Present
- Spreading factor	
- 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	255
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIR2After2	Not Present
- TX Diversity Mode	None
- SSDT information	Not Present
- S field	
- Code Word Set	
- Default DPCH Offset Value	0

PHYSICAL CHANNEL RECONFIGURATION (Step 7)

Information Element	Value/remark
Message Type	
Integrity check info	Not Present
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
~~DRX~~ RRC State indicator	~~No DRX~~CELL_DCH
UTRAN DRX cycle length coefficient	Not Present –use default
CN information info	Not Present
URA identity	Not Present
RB with PDCP information	Not Present
Frequency info	Not Present – use default
Maximum allowed UL TX power	33dBm
CHOICE *channel requirement*	Uplink DPCH info
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	
- CHOICE mode	FDD
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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	255
- Transmission gap pattern sequence configuration parameters	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- S field	
- Code Word Set	
- Default DPCH Offset Value	0
Downlink information per radio link list	Not Present

MEASUREMENT CONTROL (Step 9)

Information Element	Value/Remark
Measurement Identity ~~Number~~	1
Measurement Command	Setup
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE ~~Removed~~ inter-frequency ~~info list~~cell removal	~~Not Present~~No inter-frequency cells removed
- New inter-frequency info list	Set to id of cell ~~2~~4
- Inter-frequency cell id	
- Frequency info	UARFCN of the uplink frequency for cell ~~2~~4
- UARFCN uplink (Nu)	UARFCN of the downlink frequency for cell ~~2~~4
- UARFCN downlink (Nd)	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell ~~2~~4
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Inter-frequency measurement quantity	Inter-frequency reporting criteria
- CHOICE reporting criteria	0
- Filter Coefficient	CPICH RSCP
- Measurement quantity for frequency quality estimate	
- Inter-frequency reporting quantity	FALSE
- UTRA Carrier RSSI	TRUE
- Frequency quality estimate	
- 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
~~- CFN-SFN observed time difference~~	~~FALSE~~
- Reporting cell status	
- CHOICE reported~~ing~~ cell	Report cell ~~W~~within active and/or monitored ~~cells~~ set on used frequency ~~and~~ or within active and/or monitored ~~cells~~ set on non-used frequency
- Maximum number of reported~~ing~~ cells ~~type2~~	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	
- TGPSI	
- TGPS Status Flag	1
- TGCFN	Active 255

MEASUREMENT REPORT (Step 10)

Information Element	Value/Remarks
Measurement identity ~~number~~	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 ~~2~~4
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell ~~2~~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
~~- CFN-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 ~~2~~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

MEASUREMENT CONTROL (Step 11)

Information Element	Value/Remark
Measurement Identity ~~Number~~	1
Measurement Command	Modify
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- ~~Removed~~ CHOICE inter-frequency ~~info list~~cell removal	~~Not Present~~No inter-frequency cells removed
- New inter-frequency info list	Set to id of cell ~~2~~4
- Inter-frequency cell id	
- Frequency info	UARFCN of the uplink frequency for cell ~~2~~4
- UARFCN uplink (Nu)	UARFCN of the downink frequency for cell ~~2~~4
- UARFCN downlink (Nd)	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell ~~2~~4
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Inter-frequency measurement quantity	Inter-frequency reporting criteria
- CHOICE reporting criteria	0
- Filter Coefficient	CPICH RSCP
- Measurement quantity for frequency quality estimate	
- Inter-frequency reporting quantity	FALSE
- UTRA Carrier RSSI	TRUE
- Frequency quality estimate	
- 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
~~- CFN-SFN observed time difference~~	~~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	Event 2c
- Inter-frequency event identity	Not Present
- Threshold used frequency	Not Present
- W used frequency	0.5 dB
- Hysteresis	0 milliseconds
- Time to trigger	~~1~~
~~- Amount of reporting~~	~~0~~
~~- Reporting interval~~	Not Present
- Reporting cell status	
- Parameters required for each non-used frequency	-85 dBm
- Threshold non used frequency	0
- W non used frequency	Not Present
DPCH compressed mode status info	

MEASUREMENT REPORT (Step 12)

Information Element	Value/Remarks
Measurement identity ~~number~~	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 ~~2~~4
- UARFCN (downlink)	Check to see if set to the UARFCN of the downlink frequency for cell ~~2~~4
- UTRA carrier RSSI	Check to see if it is absent
- Inter-frequency cell measurement results	Check to see if it is absent
~~- Cell measured results~~	
Measured Results on RACH	Check to see if it is absent
Event Results	Check to see if it is absent

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 quantity of cell 4.

After step 9 the UE shall transmit MEASUREMENT REPORT messages on uplink DCCH, reporting cell ~~2~~4's CPICH RSCP value at periodic time interval of 16 seconds.

After step 11 the UE shall transmit only 1 MEASUREMENT REPORT message on the uplink DCCH. In this message, ~~no~~IE "inter-frequency ~~C~~cell measured results" ~~IEs~~ should be ~~found pre~~absent.

8.4.1.3 Measurement Control and Report: Intra-frequency measurement for transition from idle mode to CELL_FACH state

8.4.1.3.1 Definition

8.4.1.3.2 Conformance requirement

During a transition from idle mode to CELL_FACH state, the UE shall start to monitor neighbouring cells listed in the IE "Intra-frequency cell info" received in ~~SYSTEM INFORMATION BLOCK TYPE 11~~System Information Block type 11 or ~~TYPE~~ 12 messages. If an "intra-frequency measurement reporting criteria" is also specified in these messages, the UE shall store this information and apply the~~se~~ reporting rules when deciding to transmit MEASUREMENT REPORT messages ~~after~~ following a subsequent transition to CELL_DCH state. If reporting during RACH transmissions is dictated by the UTRAN, the UE shall append the ~~relevant~~ measurement information when sending messages on RACH ~~(e.g. RRC CONNECTION REQUEST and CELL UPDATE)~~.

Reference

3GPP TS 25.331, clause 8.4.1.9~~10~~

8.4.1.3.3 Test Purpose

To confirm that the UE begins to monitor the neighbouring cells ~~in the monitored~~ listed in IE "intra-frequency cell info" of System Information Block type 11 or 12 messages, after it has entered the CELL_FACH state. ~~The list of neighbouring cell can be known from SYSTEM INFORMATION BLOCK TYPE 11 or TYPE 12 messages.~~ If information regarding the intra-frequency measurement reporting criteria is also broadcasted, the UE shall ~~save~~ store this information and apply the reporting criteria after a subsequent transition to CELL_DCH state. If RACH measurement reporting is dictated in ~~SYSTEM INFORMATION BLOCK TYPE~~ System Information Block type 11 or ~~TYPE~~ 12 messages, the UE shall include these measurements when transmitting on the RACH channel.

8.4.1.3.4 Method of test

Initial Condition

System Simulator: 2 cells – both cell 1 and cell 2 are active. ~~Cell 2 is transmitting at 15 dB below cell 1.~~See Table 8.4.1.3-1 for the power settings.

UE: CS-registered idle mode (state 2) or PS-registered idle mode (state 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 8.4.1.3-1 illustrates the downlink power to be applied for the 2 cells in this test case.

Table 8.4.1.3-1

Parameter	Unit	Cell 1	Cell 2
UTRA RF Channel Number		Ch. 1	Ch. 2
$\hat{I}_{or}/I_{oc}$	dB	5.7	2.3
CPICH Ec/Io	dB	-12.4	-15.8
CPICH RSCP	dBm	-74.3	-77.7

The UE is initially at idle mode and has selected cell 1 for camping. The ~~SYSTEM BLOCK TYPE~~System Information Block type 11 message~~s~~ ~~is~~ are modified with respect to the default settings to prevent reporting of CFN-SFN difference and also to include cell 2 into the monitored neighbour cell list. The key measurement parameters are as follow: measurement type = "intra-frequency measurement", measurement quantity = "CPICH Ec/No", report criteria = "periodic reporting criteria", reporting interval = "12 seconds". In the ~~s~~System ~~i~~Information type 11 message~~s~~, reporting of CPICH Ec/No is also required for intra-frequency reporting when transmitting RACH messages to cell 1.

SS prompts the operator to make an outgoing call of 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. SS starts timer T305 and waits until timer T305 expires, the UE shall send a CELL UPDATE message which include~~s~~~~ing~~ the measurement reading of cell 2's CPICH Ec/No values. SS then reply with CELL UPDATE CONFIRM message on the downlink DCCH, without changing the physical channel resources.

In the next sequence, SS transmits PHYSICAL CHANNEL RECONFIGURATION message, and allocates DPCH channels to the UE. The UE shall transit to CELL_DCH state and then send a MEASUREMENT REPORT message, correctly stating the measurement identity. The measurement identity indicated shall match the value that was previously broadcasted on ~~SYSTEM INFORMATION BLOCK TYPE 11~~System Information Block type 11 messages when the UE was still in idle mode. The IE "Measured results" in the MEASUREMENT REPORT messages shall contain measured values of cell 2's CPICH Ec/No.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	~~SYSTEM INFORMATION BLOCK TYPE 2~~, ~~SYSTEM INFORMATION BLOCK TYPE 11~~System Information Block type 2, System Information Block type 11	The UE is idle mode and camped onto cell 1. ~~Cell 2 is also active but has transmission power 15dB below that of cell 1. SYSTEM INFORMATION TYPE 2 and 11~~ System Information Block type 2 and 11 to be transmitted are different from the default settings (see specific message contents)
2				SS prompts the test operator to make an outgoing call.
3		→	RRC CONNECTION REQUEST	The Ec/No value of P-CPICH of Cell 1 should be reported.
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				SS monitors the uplink DCCH to confirm that no MEASURENENT REPORT messages are detected. SS waits for 5 minutes (for the expiry of T305 timer)~~, so that UE will initiate a periodic cell updating procedure~~.
7		→	CELL UPDATE	This message shall contain measurement readings of CPICH Ec/No for cell 1.
8		←	CELL UPDATE CONFIRM	SS does not change the physical channel configurations~~allocation~~.
9		←	PHYSICAL CHANNEL RECONFIGURATION	SS assigns DPCH physical resources to the UE, but keeps the parameters for transport channels and RBs unchanged.
10		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall transit to CELL_DCH state after sending this message.
11		→	MEASUREMENT REPORT	UE shall begin to report cell 2's CPICH Ec/No value periodically at 12 seconds interval. The measurement identity shall match ~~that broadcasted~~ measurement contexts transmitted on BCCH in step 1

Specific Message Content

~~SYSTEM INFORMATION BLOCK TYPE~~System Information Block type 2 (Step 1)

Information Element	Value/Remarks
UE Timers and constants in connected mode - T305	5 minutes.

~~SYSTEM INFORMATION BLOCK TYPE~~ System Information Block type 11 (Step 1)

Information Element	Value/Remark
~~Reference to other system information blocks~~	
SIB12 indicator	FALSE
FACH measurement occasion info	
- FACH Measurement occasion cycle length coefficient	2
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators	Not Present
Measurement control system information	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity ~~number~~	5
- Intra-frequency cell info list	
- CHOICE ~~Removed~~ intra-frequency ~~info list~~cell removal	~~Not Present~~Remove no intra-frequency cells
- New intra-frequency info list	Set to id of cell 2
- Intra-frequency cell id	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 2
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Cell selection and Re-selection info ~~for SIB11/12~~	0 dB
- $Qoffset_{s,n}$	0 dBm
- Maximum allowed UL TX power	Not Present
- HCS neighbouring cell information	-20dB, -115dBm
- Qqualmin, Qrxlevmin	
- Intra-frequency Measurement quantity	0
- Filter Coefficient	CPICH Ec/No
- Measurement quantity	
- Intra-frequency measurement for RACH reporting	No report
- SFN-SFN observed time difference	CPICH Ec/No
- Reporting quantity	Current cell
- 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	~~FALSE~~
~~- CFN-SFN observed time difference~~	
- 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	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	~~FALSE~~
~~- CFN-SFN observed time difference~~	Not present
- Reporting quantities for detected set cells	
- Measurement Reporting Mode	Acknowledged mode RLC
- Measurement Reporting Transfer Mode	Periodic Reporting
- Periodic Reporting/Event Trigger Reporting	

Mode	Periodical reporting criteria
- CHOICE report criteria	Infinity
- Amount of reporting	12 seconds
- Reporting interval	
- Reporting Cell Status	Report cells ~~W~~within active and/or monitored
- CHOICE reported~~ing~~ cell	~~cells~~ set on used frequency ~~and~~ or within active and/or monitored ~~cells~~ set on non-used frequency
- Maximum number of reported~~ing~~ cells ~~type2~~	2
- Inter-frequency measurement system information	Not Present
- Traffic volume measurement system information	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	
- Measured result for current cell	
- CHOICE measurement quantity	Check to see if value is present
- CPICH Ec/No	Check to see if this IE is absent
- Measured results for monitored cells	

RRC CONNECTION SETUP (Step 4)

Use the same message sub-type found in Annex A, which is entitled “Transition to CELL_FACH”.

CELL UPDATE (Step 7)

Information Element	Value/Remarks
U-RNTI	Check to see if set to same U-RNTI value assigned in RRC CONNECTION SETUP message.
Integrity check info	Not checked
AM_RLC error indicator (for C-plane)	Check to see if set to ‘FALSE’
AM_RLC error indicator (for U-plane)	Check to see if set to ‘FALSE’
START List	Checked to see if the ‘CN domain identity’ and ‘START’ IEs are present for all CN domains supported by the UE
Cell update cause	Check to see if set to ‘Periodic cell updating’
Protocol error indicator	Check to see if set to ‘FALSE’
Measured results on RACH	
- Measurement result for current cell	
- CHOICE measurement quantity	CPICH Ec/No
- CPICH Ec/No	Checked to see if set to within an acceptable range.
- Measurement results for monitored cells	Checked to see if this IE is not present.
Protocol error information	Check to see if set to ‘FALSE’

PHYSICAL CHANNEL RECONFIGURATION (Step 9)

Use the same message sub-type found in Annex A, which is entitled “Packet to CELL_DCH from CELL_FACH”.

MEASUREMENT REPORT (Step 11)

Information Element	Value/Remarks
Measurement identity ~~number~~	Check to see if set to 5
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measured results	
- 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
~~- CFN-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 within acceptable range
- CPICH RSCP	Check to see if this IE is absent
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Event Results	Check to see if this IE is absent

8.4.1.3.5 Test Requirement

After step 3 the UE shall send RRC CONNECTION REQUEST message ~~in response to the paging message sent by the SS~~, which includes measured value ~~reading~~ of ~~the~~ cell 1's CPICH Ec/No value.

After step 5 the UE shall not transmit any MEASUREMENT REPORT messages on the uplink DCCH.

After step 6 the UE shall initiate cell update procedure by transmitting CELL UPDATE message. In this message, the cause shall be set to "periodic cell updating". It shall include ~~measurement~~ measured ~~readings~~ value for cell 1's CPICH Ec/No measurement quantity.

After step 10 the UE shall move to CELL_DCH state and transmit MEASUREMENT REPORT messages at 12 seconds interval. In these messages, neighbouring cell 2's CPICH Ec/No value shall be reported. The IE "measurement identity" in this message shall match the IE "Intra-frequency measurement identity" found in ~~SYSTEM INFORMATION BLCOK TYPE~~System Information Block type 11 messages transmitted in step 1.

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 list of "inter-frequency" neighbouring cells assigned in the ~~SYSTEM INFORMATION BLOCK TYPE~~System Information Block type 11 or 12 messages on transmitted on the BCCH~~/FACH~~.

Reference

3GPP TS 25.331, clause 8.4.1.9.2~~10~~

8.4.1.4.3 Test Purpose

To confirm that the UE begins to monitor the list of neighbouring cell assigned in the IE "inter-frequency cell info" in ~~SYSTEM INFORMATION BLOCK TYPE~~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.

8.4.1.4.3 Method of test

Initial Condition

System Simulator: 2 cells – The initial configurations of the 2 cells in the SS should follow the values indicated in the columns marked "T0" in table 8.4.1.4-1. The table is found in "Test Procedure" sub-clause.~~System Simulator: 2 cells – Cell 1 is active and has a downlink transmission level for CPICH RSCP at -40 dBm, cell 4 is also active but with a transmission power 10dB below cell 1.~~

UE: CS-registered idle mode (state 2) or PS-registered idle mode (state 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 8.4.1.4-1 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 sub-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	
$\hat{I}_{or}/I_{oc}$	dB	9.7	0.5	0.5	9.7
CPICH Ec/Io	dB	-10.4	-12.8	-12.8	-10.4
CPICH RSCP	dBm	-70.3	-79.5	-79.5	-70.3

The UE is initially at idle mode and has selected cell 1 for camping. The ~~SYSTEM BLOCK TYPE~~System Information Block type 12 message~~s~~ ~~is~~ are modified with respect to the default settings to prevent reporting of CFN-SFN difference and also to include cell ~~4~~2 into the monitored neighbour cell list for inter-frequency measurement type. The key measurement parameters are as follow: measurement type = "inter-frequency measurement", measurement quantity = "CPICH Ec/No".

SS prompts the operator to make an outgoing call of a supported traffic class. The UE shall transmit a RRC CONNECTION REQUEST message on the CCCH, SS replies with RRC CONNECTION SETUP message and allocates PRACH channel ~~i~~on the uplink and S-CCPCH channel on the downlink to the UE. UE then moves to CELL_FACH state. The UE shall not transmit any MEASUREMENT REPORT messages, which pertain to measurement readings from inter-frequency cells belonging to the monitored set. ~~SS decreases the transmission power of CPICH in cell 1 by 10dB. At the same time, it raises the corresponding downlink transmission power of cell 4 by 10dB.~~ 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 on the downlink DCCH.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1	←		~~SYSTEM INFORMATION BLOCK TYPE 11~~System Information Block type 11	The UE is idle mode and camped onto cell 1. ~~Cell 4 is also active but has transmission power 10dB below that of cell 1. SYSTEM INFORMATION TYPE 11~~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 PRACH and S-CCPCH resources to UE
5	→		RRC CONNECTION COMPLETE	UE transmits this message to acknowledge the SETUP message and moves to CELL_FACH state.
6				SS checks to see that no MEASUREMENT REPORT messages are sent from UE to cell 1.
7				SS ~~decreases the transmission power of cell 1 by 10dB and increases cell 4's downlink power by 10dB.~~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.

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~~System Information Block type 11 (Step 1)

Information Element	Value/Remark
SIB12 Indicator	FALSE
~~Reference to other system information blocks~~	~~Not Present~~
FACH measurement occasion info	
- ~~k_UTRA~~FACH Measurement occasion cycle length coefficient	2
- Inter-frequency FDD measurement indicator	TRUE
- Inter-frequency TDD measurement indicator	FALSE
- Inter-RAT measurement indicators~~Other RAT present in inter-system cell info~~	Not Present
Measurement control system information	Not Present
- Intra-frequency measurement system information	
- Inter-frequency measurement system information	1
- Inter-frequency measurement identity~~ number~~	
- Inter-frequency cell info list	~~Not Present~~No inter-frequency cells removed
- CHOICE ~~Removed~~ interra~~-~~frequency ~~info list~~cell removal	Set to id of cell 4
- New inter-frequency info list	
- Inter-frequency cell id	Set to uplink UARFCN of cell 4
- Frequency info	Set to the downlink UARFCN of cell 4
- UARFCN uplink (Nu)	
- UARFCN downlink (Nd)	0 dB
- Cell info	0 chips
- Cell individual offset	
- Reference time difference to cell	Set to same code as used for cell 4
- Primary CPICH Info	Not Present
- Primary Scrambling Code	FALSE
- Primary CPICH TX power	FALSE
- Read SFN Indicator	
- TX Diversity Indicator	
- Cell selection and re-selection info~~ for SIB 11/12~~	0 dB 0 dBm
- $Qoffset_{s,n}$	Not Present
- Maximum allowed UL TX power	-20dB, -115dBm
- HCS neighbouring cell information	
- Qqualmin, Qrxlevmin	~~Inter-frequency reporting criteria~~
~~- Inter-frequency measurement quantity~~	~~0~~
~~CHOICE Reporting criteria~~	~~CPICH Ec/No~~
~~- Filter coefficient~~	
~~- Measurement quantity for frequency quality estimate~~	
~~- Inter-frequency measurement reporting criteria~~	~~2c~~
~~- Parameters required for each event~~	~~Not Present~~
~~- Inter-frequency event identity~~	
~~- Threshold used frequency~~	~~2.0dB~~
~~- W used frequency~~	~~0 sec~~
~~- Hysteresis~~	~~Infinity~~
~~- Time to trigger~~	~~0~~
~~- Amount of reporting~~	
~~- Reporting interval~~	
~~- Parameters required for each non-used frequency~~	~~-55dBm~~ ~~0~~
~~- Threshold non-used frequency~~	Not Present
~~- W non-used frequency~~	Not Present
- Inter-~~system~~ RAT measurement system information	Not Present
- Traffic volume measurement system information	
- UE internal measurement system information	

RRC CONNECTION REQUEST (Step 3)

Information Element	Value/Remarks
Establishment cause	Check to see if set to originating call of the compatible traffic class supported by the UE
Measured results on RACH	Check to see if this IE is absent

RRC CONNECTION SETUP (Step 4)

Use the message sub-type in default message content defined in Annex A, which is marked as "Transition to CELL_FACH".

CELL UPDATE (Step 8)

Information Element	Value/Remarks
U-RNTI	Check to see if same to value as in RRC CONNECTION SETUP message
Integrity check info	Check to see if it is absent
AM_RLC error indication (for C-plane)	Check to see if it is set to FALSE
AM_RLC error indication (for U-plane)	Check to see if it is set to FALSE
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
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.

8.4.1.4.5 Test Requirement

After step 5 the UE shall not transmit any MEASUREMENT REPORT messages pertaining to the measurement of CPICH Ec/No quantity 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~~2~~.

8.4.1.5 Measurement Control and Report: Intra-frequency measurement for transition from CELL_DCH to CELL_FACH state

8.4.1.5.1 Definition

8.4.1.5.2 Conformance requirement

After entering CELL_FACH state from CELL_DCH state, the UE shall ~~terminate~~ stop intra-frequency type measurement reporting ~~originating from~~assigned in a previous MEASUREMENT CONTROL message. After transition to CELL_FACH state, the UE shall start to monitor neighbouring cells listed in the "intra-frequency cell info" received in ~~SYSTEM INFORMATION TYPE~~System Information Block type 11 or 12. The UE shall apply the reporting criteria specified in ~~s~~System ~~i~~Information Block type 11 or 12 messages, after a subsequent return to CELL_DCH state. If requested to perform measurement reporting on RACH channels, the UE shall append the measured results when transmitting uplink RACH messages.

Reference

3GPP TS 25.331, clause 8.4.1.~~7~~6.1

8.4.1.5.3 Test Purpose

To confirm that the UE ~~ceases~~ stops to perform intra-frequency measurement reporting specified in a previously received MEASUREMENT CONTROL message, when it moves from CELL_DCH state to CELL_FACH state. To confirm that the UE read the ~~s~~System ~~i~~Information Block type 11 or 12 messages when in CELL_FACH state and starts to monitor the neighbouring cells as indicated in these ~~system information~~ messages. To confirm that the UE performs

measurements on uplink RACH channel and appends the measured results in RACH messages, when requested in the system information messages.

8.4.1.5.4 Method of test

Initial Condition

System Simulator: 3 cells – ~~Cell 1 and cell 2 are active, but the transmitter of cell 3 is switched off. Cell 1 is transmitting its CPICH (RSCP) at 20 dB above cell 2.~~ The initial configurations of the 3 cells in the SS should follow the values indicated in the column marked "T0" in table 8.4.1.14-1. The table is found in "Test Procedure" sub-clause.

UE: CS-registered idle mode (state 2) or PS-registered idle mode (state 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 8.4.1.5-1 illustrates the downlink power to be applied for the 3 cells at various time instants of the test execution. Column marked "T0" denotes the initial conditions, while columns marked "T1 are to be applied subsequently. The exact instants on which these values shall be applied are described in the texts in this sub-clause.

Table 8.4.1.5-1

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T0	T1	T0	T1	T0	T1
UTRA RF Channel Number		Ch. 1		Ch. 1		Ch. 1	
$\hat{I}_{or}/I_{oc}$	dB	5.3	5.3	0.5	0.5	Cell 3 is switched off	3.3
CPICH Ec/Io	dB	-12.1	-13.5	-16.9	-18.3		-15.5
CPICH RSCP	dBm	-74.7	-74.7	-79.5	-79.5		-76.7

The UE is initially in idle mode and has selected cell 1 as the current cell. The ~~SYSTEM~~System ~~INFORMATION~~ Information ~~BLOCK~~ Block ~~TYPE~~ type 11 message is modified from its default message contents, in order to prevent the UE's reporting of CFN-SFN difference. No measurement requirements are specified for the UE in any of the ~~s~~System ~~i~~Information ~~b~~Block ~~(~~type 11 ~~and~~ or 12~~)~~ messages.

SS then prompts the test operator to initiate an outgoing call of a supported traffic class. When UE transmits a RRC CONNECTION REQUEST message on RACH, SS replies with RRC CONNECTION SETUP message. Uplink and downlink DPCH physical channels are allocated. Upon receiving RRC CONNECTION SETUP message, the UE shall transmit RRC CONNECTION SETUP COMPLETE message on DCCH and then moves to CELL_DCH state. SS then sends a MEASUREMENT CONTROL message to UE. In this message, the SS requests the establishment of an intra-frequency measurement task for the measurement ~~based on an estimation~~ of cell 2's CPICH Ec/No. At the same time, reporting of cell 2's CPICH Ec/No is commanded with the reporting criteria set to "periodic reporting" and reporting interval set to 16 seconds. The UE shall start transmitting MEASUREMENT REPORT messages at 16 seconds interval corresponding to the requested reporting event.

SS transmits PHYSICAL CHANNEL RECONFIGURATION message, triggering a switch of transport channels from DCH (UL)/DCH (DL) to RACH (UL)/FACH (DL). After receiving this message, the UE shall reconfigure itself and repl~~ies~~y with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on RACH. SS acknowledges this message and the UE shall move to CELL_FACH state and read the S~~s~~ystem ~~i~~Information Block messages. SS then monitors the uplink channels to verify that no MEASUREMENT REPORT messages are received.

SS reconfigures itself according to the settings in columns marked "T1" in table 8.4.1.5-1. It then transmits ~~In SYSTEM~~ System ~~INFORMATION~~ Information ~~BLOCK~~ Block ~~TYPE~~ type 12 messages in cell 1, ~~SS~~ which indicates to include~~s~~ cell 3 into the neighbour cells monitoring list. IEs "Intra-frequency reporting quantity for RACH Reporting" and IE "Maximum number of Reported cells on RACH" are also specified in ~~this~~ these messages. An event-triggered (event type 1a) reporting criterion is specified for intra-frequency measurements. ~~Cell 3 is turned on and its transmission strength is set to exceed the lower bound of the reporting range specified.~~ SS then pages for the UE using PAGING TYPE 1 message. The UE shall respond with a CELL UPDATE message, which comprises measurement readings of CPICH Ec/No ~~measurements~~ for cell 1 and cell 3. Upon the receipt of CELL UPDATE message, SS replies with CELL UPDATE CONFIRM message on the downlink DCCH. This message does not change

the physical resources nor allocate any new RNTI identities. ~~The UE shall remain in CELL_FACH state.~~ SS transmits PHYSICAL CHANNEL RECONFIGURATION message again, ~~this time specifying~~allocating dedicated physical resources for both uplink and downlink directions to the UE. The UE shall then send PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and return to CELL_DCH state. SS listens to the uplink DCCH for MEASUREMENT REPORT messages. SS verifies that all messages received pertain to the periodic measured value of cell 2's CPICH Ec/No value. UE shall not send any reports containing the measured values of cell 3.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	~~SYSTEM INFORMATION BLOCK TYPE~~System Information Block type 11	UE is initially in idle mode in cell 1, and test operator is asked to make an outgoing call.
2		→	RRC CONNECTION REQUEST	
3		←	RRC CONNECTION SETUP	Uplink and downlink DPCH resources are allocated.
4		→	RRC CONNECTION SETUP COMPLETE	UE shall move to CELL_DCH state.
5		←	MEASUREMENT CONTROL	SS requests for measurement and reporting of cell 2's CPICH Ec/No value.
6		→	MEASUREMENT REPORT	UE shall send periodic report at 16 seconds interval. SS waits for 2 consecutive reports ~~before proceeding to step 7~~.
7		←	PHYSICAL CHANNEL RECONFIGURATION	SS switches the physical resources to common physical channels.
8		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall reconfigure its uplink and downlink channels before transiting to CELL_FACH state.
9		←	~~SYSTEM INFORMATION BLOCK TYPE~~System Information Block type 12	SS reconfigures itself according to the settings stated in column "T1" of table 8.4.1.5-1. SIB type 12 indicates UE ~~SS~~ includes cell 3 into the monitored neighbour cell list. SS waits for 1 minute~~s~~ and verifies that no MEASURE~~-~~MENT REPORT messages are ~~received~~detected on the uplink. ~~Cell 3 is switched on, and SS adjusts the transmission power for CPICH such that its Ec/No falls into the report range specified.~~
10		←	PAGING TYPE 1	SS pages for UE using the assigned U-RNTI identity.
11		→	CELL UPDATE	UE shall transmit this message with measured results on RACH channels for cell 1 and cell 3 ~~appended~~ present in this message.
12		←	CELL UPDATE CONFIRM	No change~~s~~ in physical resource allocation and RNTI identities.
13		←	PHYSICAL CHANNEL RECONFIGURATION	Allocates dedicated physical channels.
14		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall transit to CELL_DCH state.
15		←	MEASUREMENT REPORT	UE shall continue to report cell 2's CPICH Ec/No value on a periodic basis.

Specific Message Content

~~SYSTEM INFORMATION BLOCK TYPE~~System Information Block type 11 (Step 1)

Information Element	Value/Remark
~~Reference to other system information blocks~~	~~Not Present~~
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	Not Present
- Inter-~~system~~ RAT measurement system information	Not Present Not Present
- Traffic volume measurement system information	Not Present
- UE internal measurement system information	

RRC CONNECTION SETUP (Step 3)

Use the same message sub-type found in Annex A, which is entitled “Transition to CELL_DCH”.

MEASUREMENT CONTROL (Step 5)

Information Element	Value/Remark
Measurement Identity ~~Number~~	5
Measurement Command	Setup
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- ~~Removed~~ CHOICE intra-frequency ~~info list~~cell removal	~~Not Present~~Remove no intra-frequency cells
- New intra-frequency info list	Set to id of cell 2
- Intra-frequency cell id	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 2
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Intra-frequency measurement quantity	0
- Filter Coefficient	CPICH Ec/No
- Measurement quantity	
- 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	TRUE
- Cell identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	~~FALSE~~
~~- CFN-SFN observed time difference~~	
- 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	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	~~FALSE~~
~~- CFN-SFN observed time difference~~	Not present
- Reporting quantities for detected cells	
- Reporting cell status	Report cells ~~W~~within active and/or monitored
- CHOICE reported~~ing~~ cell	~~cells~~ set on used frequency ~~and~~ or within active and/or monitored ~~cells~~ set on non-used frequency
- Maximum number of reported~~ing~~ cells ~~type2~~	2
- Measurement validity	Not present
- CHOICE report criteria	Periodical reporting criteria
- Amount of reporting	Infinity
- Reporting interval	16 seconds
DPCH compressed mode status info	Not Present

MEASUREMENT REPORT (Step 6)

Information Element	Value/Remarks
Measurement identity ~~number~~	Check to see if set to 5
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measured results	
- 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
~~- CFN-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 present
- CPICH RSCP	Check to see if this IE is absent
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Event results	Check to see if this IE is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 7)

Use the same message sub-type found in Annex A, which is entitled "(Packet to CELL_FACH from CELL_DCH in PS)"

~~SYSTEM INFORMATION BLOCK TYPE~~ System Information Block type 12 (Step 9)

Information Element	Value/Remark
~~Reference to other system information blocks~~	~~Not Present~~
FACH measurement occasion info	Not Present
Measurement control system information	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity ~~number~~	6
- Intra-frequency cell info list	
- ~~Removed~~ CHOICE intra-frequency cell removal~~info list~~	~~Not Present~~Remove no intra-frequency cells
- New intra-frequency info list	Set to id of cell 3
- Intra-frequency cell id	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 3
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Cell selection and Re-selection info ~~for SIB11/12~~	0dB
- $Qoffset_{s,n}$	0dBm
- Maximum allowed UL TX power	Not Present
- HCS neighbouring cell information	-20dB, -115dBm
- Qqualmin, Qrxlevmin	
- Intra-frequency measurement quantity	0
- Filter Coefficient	CPICH Ec/No
- Measurement quantity	
- Intra-frequency measurement for RACH reporting	No report
- SFN-SFN observed time difference	CPICH Ec/No
- Reporting quantity	Current cell + best neighbour
- 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	TRUE
- Cell identity reporting indicator	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	~~FALSE~~
~~- CFN-SFN observed time difference~~	
- 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	TRUE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	~~FALSE~~
~~- CFN-SFN observed time difference~~	Not present
- Reporting quantities for detected cells	Intra-frequency measurement reporting criteria
- CHOICE report criteria	Only 1 reporting event is defined 1a
- Parameter required for each event	Not Present
- Intra-frequency event identity	Monitored set cells
- Triggering condition 1	~~10.0~~3.0 dB
- Triggering condition 2	Not present
- Reporting range	0.0
- Cells forbidden to affect reporting	FDD
- CHOICE Mode	

- Primary CPICH info	Set to scrambling code for cell 3
- Primary scrambling code	1.0 dB
- W	Not Present
- Hysteresis	7
- Threshold used frequency	Not Present
- Reporting deactivation threshold	0
- Replacement activation threshold	Infinity
- Time to trigger	8 seconds
- Amount of reporting	Not present
- Reporting Interval	
- Inter-frequency measurement system information	Not present
- Inter-~~system~~ RAT measurement system information	Not present
- Traffic volume measurement system information	Not present
- UE internal measurement system information	

PAGING TYPE 1 (Step 10)

Information Element	Value/Remarks
Page Record List	
- Page Record	
- CHOICE Paging originator	UTRAN Originator
- U-RNTI	Set to same U-RNTI value as assigned in the RRC CONNECTION SETUP message
BCCH modification info	Not Present

CELL UPDATE (Step 11)

Information Element	Value/Remarks
U-RNTI	Check to see if same to value as in PAGING TYPE 1 message
Integrity check info	Check to see if it is absent
AM_RLC error indication (for C-plane)	Check to see if it is set to FALSE
AM_RLC error indication (for U-plane)	Check to see if it is set to FALSE
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
Cell update cause	Check to see if it is set to "Paging Response"
Protocol error info	Check to see if it is absent or set to FALSE
Measured results on RACH	
- Measurement result for current cell	
- CHOICE measurement quantity	Check to see if set to CPICH Ec/No
- CPICH Ec/No	Check to see if it is within acceptable range
- Measurement results for monitored cells	
- SFN-SFN observed time difference	Not Checked
- Primary CPICH info	
- Primary scrambling code	Check to see if the same as cell 3's code.
- CHOICE measurement quantity	Check to see if set to CPICH Ec/No
- CPICH Ec/No	Check to see if it is within acceptable range
Protocol error information	Check to see if it is absent

PHYSICAL CHANNEL RECONFIGURATION (Step 13)

Use the same message sub-type found in Annex A, which is entitled "(Packet to CELL_DCH from CELL_FACH in PS)"

MEASUREMENT REPORT (Step 15)

~~The contents of this message should be the same as in step 6.~~

Measurement identity	Check to see if set to 6
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measured 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 present
- CPICH RSCP	Check to see if this IE is absent
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Event results	Check to see if this IE is absent

8.4.1.5.5 Test Requirement

After step 5, the UE shall start to transmit MEASUREMENT REPORT messages at 16 seconds interval. The message shall contain the measured result of cell 2's CPICH Ec/No value.

After step 8, the UE shall not send any MEASUREMENT REPORT messages ~~which~~ containing reporting quantities requested in MEASUREMENT CONTROL messages in step 5.

After step 10, the UE shall respond to the paging and transmit a CELL UPDATE message. In this message, the measured values CPICH Ec/No for cell 1 and cell 3 shall be included.

After step 14, the UE shall ~~revert to the original~~follow measurement reporting mechanism specified in System Information Block type 12 messages sent in step 9. ~~and~~ It shall send MEASUREMENT REPORT messages containing estimates for cell 2's CPICH Ec/No value. The UE shall not transmit any MEASUREMENT REPORT messages, which ~~indicate~~ report measurement quantities of cell 3.

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 ~~terminate~~ stop all measurement reporting activities related to inter-frequency measurements assigned in a MEASUREMENT CONTROL message. After reaching CELL_FACH state, the UE shall begin to monitor neighbouring cells listed in the IE "inter-frequency cell info" ~~of~~ specified in the ~~s~~System ~~i~~Information Block type 11 or 12 messages.

Reference

3GPP TS 25.331, clause 8.4.1.~~7~~6.2

8.4.1.6.3 Test Purpose

To verify that UE ceases to transmit MEASUREMENT REPORT messages to report inter-frequency type measurements when moving from CELL_DCH state to CELL_FACH~~.~~, This requirement shall be observed even if ~~it~~ the UE has detected that inter-frequency type measurement reporting criteria have been satisfied in CELL_FACH state. To verify that the UE extracts information for inter-frequency measurement from ~~s~~System ~~i~~Information Block type 11 or 12 messages after reaching CELL_FACH state.

8.4.1.6.4 Method of test

Initial Condition

System Simulator: 2 cells – The initial configurations of the 2 cells in the SS should follow the values indicated in the columns marked "T0" in table 8.4.1.6-1. The table is found in "Test Procedure" sub-clause.

~~SS: 2 cells – Both cell 1 and cell 4 are active. The applicable radio conditions for cell 1 and cell 4 are as follow:~~

	~~Cell 1~~	~~Cell 4~~
~~UARFCN (N_u and N_d)~~	~~Channel 1~~	~~Channel 2~~
~~CPICH RSCP~~	~~-75 dBm~~	~~-85 dBm~~
~~$Q_{rxlevmin}$~~	~~-90 dBm~~	~~-90 dBm~~
~~S~~	~~15~~	~~5~~

UE: CS-registered idle mode (state 2) or PS-registered idle mode (state 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 8.4.1.6-1 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 sub-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	
$\hat{I}_{or}/I_{oc}$	dB	9.5	-1.5	-1.5	9.5
CPICH Ec/Io	dB	-10.5	-13.8	-13.8	-10.5
CPICH RSCP	dBm	-70.5	-81.5	-81.5	-70.5

The UE is initially in idle mode, after camping on cell 1. SS prompts the test operator to initial an outgoing call for one of the supported traffic classes. The ~~SYSTEM~~ System ~~INFORMATION~~ Information Block ~~TYPE~~ type 11 message is modified so that no measurement tasks are required ~~to be performed by~~of the UE. The UE shall ~~respond to the paging by~~ send~~ing~~ a RRC CONNECTION REQUEST message on the uplink CCCH ~~carried by RACH~~. Upon receiving this message, SS allocates dedicated DPCH physical channels to the UE by transmitting RRC CONNECTION SETUP message. The UE shall reply by transmitting a RRC CONNECTION SETUP COMPLETE message. SS then checks the IE "Measurement Capability" of this message and verifies that the UE is capable of performing inter-frequency measurements under FDD mode. After ~~the~~ confirmation of the UE inter-frequency measurement capability, SS transmits PHYSICAL CHANNEL RECONFIGURATION message. In this message, ~~information related to the radio bearers and uplink/downlink radio resources remain unchanged as compared to the equivalent IEs found in RRC CONNECTION SETUP message. The only difference concerns~~ 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 then sends a MEASUREMENT CONTROL message to the UE, specifying that cell 4 be the measurement object for inter-frequency type measurement. The periodic reporting criterion is selected for this measurement. SS waits for 8 seconds to allow the periodic timer to expire. The UE shall send a MEASUREMENT REPORT message containing measured result of cell 4's measurement reporting quantity (CPICH Ec/No). SS transmits PHYSICAL CHANNEL RECONFIGURATION message again, requesting the UE to switch from uplink and downlink DPCH to 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 neighbouring cell list in the "inter-frequency cell info" IE. SS waits for ~~another~~ 8 seconds to detect any possible uplink MEASUREMENT REPORT messages as a result of inter-frequency measurements. SS then ~~increases the transmission power of cell 4 by 20 dB~~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 cause as "cell re-selection". SS replies with CELL UPDATE CONFIRM message on the downlink DCCH to complete the cell update procedure.

Expected Sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	System Information Block type 11	UE is initially in idle mode and camped onto cell 1. ~~SYSTEM INFORMATION BLOCK TYPE~~System Information Block type 11 is ~~redefined,~~modified with respect to the default settings, in order to ~~disabling~~ disable all measurement and reporting activities.
2				SS prompts the test operator to trigger an outgoing call for a supported traffic class
3		→	RRC CONNECTION REQUEST	
4		←	RRC CONNECTION SETUP	Uplink and downlink DPCH resources are allocated.
5		→	RRC CONNECTION SETUP COMPLETE	UE shall indicate that it's capable of performing inter-frequency measurement for FDD mode.
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 Ec/No of cell 4 shall be monitored and reported. SS waits for 8 seconds.
9		→	MEASUREMENT REPORT	UE shall transmit this message to report cell 4's CPICH Ec/No value.
10		←	PHYSICAL CHANNEL RECONFIGURATION	SS changes the physical channel allocation to common channel configuration.
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 neighbouring cells list for inter-frequency measurement
13~~2~~				SS waits for 8 seconds to verify that no MEASUREMENT REPORT messages are detected.
~~13~~				~~SS changes SYSTEM INFORMATION BLOCK TYPE 12 message to request cell 4 to be included into neighbour cell list for inter-frequency measurements.~~
14				SS changes the power settings for cell 1 and cell 4 according to columns marked "T1" of Table 8.4.1.6-1~~increases the transmission power of cell 4 by 20 dB~~, and then waits for [x] seconds to allow the UE to re-select to a new cell.
15		→	CELL UPDATE	UE shall ~~detect~~ determine that cell 4 has become the best cell and then perform cell re-selection procedure.
16		←	CELL UPDATE CONFIRM	

Notes:

The value [x] seconds is TBD, after the cell re-selection duration is determined from TS 25.304.

Specific Message Content

~~SYSTEM~~ System ~~INFORMATION~~ Information ~~BLOCK~~ Block ~~TYPE~~ Type 11~~2~~ (Step 1)

Information Element	Value/Remark
References to other system information blocks	Not Present
FACH measurement occasion info	
- ~~k_UTRA~~FACH Measurement occasion cycle length coefficient	2
- Inter-frequency FDD measurement indicator	FALSE
- Inter-frequency TDD measurement indicator	FALSE
- ~~Other RAT present in inter-system cell info~~Inter-RAT measurement indicators	Not Present
Measurement control system information	Not Present
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	Not Present
- Inter-~~system~~ RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present
- UE Internal measurement system information	

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”

RRC CONNECTION SETUP COMPLETE (Step 5)

Information Element	Value/Remarks
START List	
- CN Domain Identity	Check to see if it is present for all supported CN domains
- START	Check to see if it is present for all supported CN domains
UE Radio access capability	
- ICS Version	Checked to see if set to 'R99'
- PDCP capability	Not checked.
- RLC capability	Not checked.
- Transport channel capability	Not checked.
- RF capability	Not checked.
- Physical channel capability	Not checked.
- UE multi-mode/multi-RAT capability	Not checked.
- Security capability	Not checked.
- LCS capability	Not checked.
- Measurement capability	
- FDD measurements DL	Checked to see if set to 'TRUE'
- TDD measurements DL	Not checked.
- GSM measurements DL	Not checked.
- GSM 900 DL	Not checked.
- DCS 1800 DL	Not checked.
- GSM 1900 DL	Not checked.
- Multi-carrier measurement DL	Not checked.
- FDD measurements UL	Checked to see if set to 'TRUE'
- TDD measurements UL	Not checked.
- GSM measurements UL	Not checked.
- GSM 900 UL	Not checked.
- DCS 1800 UL	Not checked.
- GSM 1900 UL	Not checked.
- Multi-carrier measurement UL	Not checked.
UE system specific capability	Not checked.

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	
- CHOICE Mode	FDD
- Downlink DPCH power control information	
- DPC mode	0 (Single)
- 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	255
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRAfter2	Not Present
- TX Diversity Mode	None
- SSDT information	Not Present
- S field	
- Code Word Set	
- Default DPCH Offset Value	0

MEASUREMENT CONTROL (Step 8)

Information Element	Value/Remark
Measurement Identity ~~Number~~	15
Measurement Command	Setup
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- ~~Removed~~ CHOICE inter-frequency cell removal~~info list~~	~~Not Present~~No inter-frequency cells removed
- New inter-frequency info list	Set to id of cell 4
- Inter-frequency cell id	
- Frequency info	UARFCN of the uplink frequency for cell 4
- UARFCN uplink (Nu)	UARFCN of the downlink frequency for cell 4
- UARFCN downlink (Nd)	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 4
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Inter-frequency measurement quantity	Inter-frequency reporting criteria
- CHOICE reporting criteria	0
- Filter Coefficient	CPICH Ec/No
- Measurement quantity for frequency quality estimate	
- Inter-frequency reporting quantity	FALSE
- UTRA Carrier RSSI	TRUE
- Frequency quality estimate	
- 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	TRUE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
~~- CFN-SFN observed time difference~~	~~FALSE~~
- Reporting cell status	~~Not present~~
- CHOICE reported~~ing~~ cell	
- Maximum number of reported~~ing~~ cells ~~type2~~	Report cells ~~W~~within active and/or monitored ~~cells~~ set on used frequency ~~and~~or within active and/or monitored ~~cells~~ set on non-used frequency
- Measurement validity	2
- Inter-frequency set update	Not present
- CHOICE report criteria	Not Present
- Amount of reporting	Periodic reporting criteria
- Reporting interval	Infinity
DPCH compressed mode status info	8 seconds
	Not Present

MEASUREMENT REPORT (Step 9)

Information Element	Value/Remarks
Measurement identity ~~number~~	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
~~- CFN-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 present
- 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

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)".2

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	0
- 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 – use default of 0 dB
- Reference time difference to cell	Not Present
- CHOICE Mode	FDD
- Primary CPICH info	
- Primary scrambling code	Set to the scrambling code of cell 4
- Primary CPICH Tx power	Not Present
- Read SFN indicator	FALSE
- 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

CELL UPDATE (Step 15)

Information Element	Value/Remarks
U-RNTI	Check to see if same to value as in RRC CONNECTION SETUP message
Integrity check info	Check to see if it is absent
AM_RLC error indication (for C-plane)	Check to see if it is set to FALSE
AM_RLC error indication (for U-plane)	Check to see if it is set to FALSE
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
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.

8.4.1.6.5 Test Requirement

After step 4 the UE shall transmit RRC CONNECTION SETUP COMPLETE message with the IE "Measurement capability", indicating that both uplink and downlink inter-frequency measurements for FDD mode are supported.

After step 8 the UE shall transmit MEASUREMENT REPORT message to report cell 4's CPICH Ec/No value.

After step 11 the UE shall stop sending MEASUREMENT REPORT messages, which contain inter-frequency measured results for cell 4's CPICH Ec/No value.

After step 14 the UE shall transmit CELL UPDATE message to inform that a cell reselection to cell 4 has occurred.

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

When transiting from CELL_FACH state to CELL_DCH state, the UE shall resume intra-frequency measurement if it has previously stored such a measurement context in CELL_DCH state~~.~~ and ~~If~~ if this~~e~~ measurement context ~~indicates reporting in~~ is indicated to be resume in CELL_DCH state~~,~~. ~~t~~The UE shall also re-start the associated reporting activities for the resumed intra-frequency measurement. If the UE has performed a cell reselection whilst out of CELL_DCH state, the UE shall not re-start intra-frequency measurement previously designated to be resumed in CELL_DCH state.

~~–~~In the case when the UE is not assigned any measurement tasks, it shall continue to monitor the list of intra-frequency neighbouring cells stated in ~~s~~System ~~i~~Information Block type 11 or 12 messages. It shall transmit MEASUREMENT REPORT messages when the reporting criteria (if specified in ~~s~~System I~~i~~nformation Block type 11 or 12 messages) are met. When in CELL_DCH state, the UE shall override existing measurement and reporting contexts ~~extracted~~ obtained from listening to ~~s~~System ~~i~~Information Block type 11 or 12 messages, if a MEASUREMENT CONTROL message is received. The UE shall then apply the new measurement and reporting parameters received in the MEASUREMENT CONTROL message.~~accordingly. If the UE has performed a cell reselection whilst out of CELL_DCH state, the UE shall not re-start intra-frequency measurement previously designated to be resumed in CELL_DCH state.~~

Reference

3GPP TS 25.331, clause 8.4.1.~~8~~7.1

8.4.1.7.3 Test Purpose

To confirm that UE resumes intra-frequency measurements and the associated reporting when it enters CELL_DCH state from CELL_FACH state, and that ~~if~~ such ~~a~~ measurement contexts (and optionally, the reporting context) have~~s~~ been stored for resumption in~~before entering~~ CELL_DCH state. To confirm that the UE continues to monitor the intra-frequency neighbour cells i~~ntra-frequency measurement~~ liste~~d~~ ~~found~~ in the ~~s~~System ~~i~~Information Block type 11 or 12 messages, if no previously assigned measurements ~~is~~ are present. To confirm that the UE transmits MEASUREMENT REPORT messages if reporting conditions stated in ~~s~~System ~~i~~Information Block type 11 or 12 messages have been satisfied. To confirm that a MEASUREMENT CONTROL message received in CELL_DCH state ~~results in the overriding of current~~ overrides the measurement and associated reporting contexts maintained ~~by~~ 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 – The initial configurations of the 3 cells in the SS should follow the values indicated in the column marked "T0" in table 8.4.1.7-1. The table is found in "Test Procedure" sub-clause.

~~System Simulator: 3 cells – All 3 are all active. The transmission power (RSCP) for CPICH of the 3 cells are as follow: cell 1 (40dBm), cell 2 (55dBm) and cell 3 (70dBm).~~

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.

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 sub-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	
$\hat{I}_{or}/I_{oc}$	dB	7.9	-5.0	7.3	7.3	5.7	5.7
CPICH Ec/Io	dB	-14.2	-25.2	-14.8	-12.9	-16.4	-14.5
CPICH RSCP	dBm	-72.1	-85.0	-72.7	-72.7	-74.3	-74.3

The UE is brought to CELL_FACH state in cell 1, after it has successfully executed procedure P4 or P6 (depending on the CN domain supported by the UE) as specified in clause 7.4 of TS 34.108. ~~The SYSTEM INFORMATION BLOCK TYPE~~ System Information Block type 12 message is changed with respect to the default message contents, specifying that cell 2 is to be included in the neighbouring cell list for intra-frequency measurement. Event 1e is selected in IE "~~Intra-frequency measurement r~~Reporting ~~criteria~~information for state CELL_DCH", and "Intra-frequency measurement quantity" is set to CPICH Ec/No.

SS send a PHYSICAL CHANNEL RECONFIGURATION message to UE, allocating dedicated physical channels on both uplink and downlink directions. Upon receiving such a message, the UE shall return PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and then move to CELL_DCH state. The UE shall send MEASUREMENT REPORT messages to indicate that the measured result of cell 2's CPICH Ec/No value, as the measurement quantity has exceeded the threshold value in ~~s~~System ~~i~~Information Block type 12 messages. After receiving the~~is~~ MEASUREMENT REPORT messages, SS transmits a MEASUREMENT CONTROL message in which it specifies that only intra-frequency measurement and periodic reporting for cell 3 's CPICH Ec/No shall be performed. ~~The reporting criteria are the same as in SYSTEM INFORMATION BLOCK TYPE 12 message, except that the reporting threshold is lowered.~~ 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 Ec/No ~~is~~ are included in these messages. ~~and no IEs shall be present, which pertain to measurement quantity in cell 2. After receiving the MEASUREMENT REPORT message reporting readings for cell 3, SS transmits another MEASUREMENT CONTROL message. 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 = 'resume', UE state for reporting = 'CELL_DCH'. SS verifies that the UE continue to send MEASUREMENT REPORT messages at 16 seconds interval, and that the contents of these messages are similar to those received prior to the transmission of the second downlink MEASUREMENT CONTROL messages.~~

Next, SS sends PHYSICAL CHANNEL RECONFIGURATION message to UE. In this message, the physical channel resources are switched to common physical channels – PRACH for the uplink and S-CCPCH for the downlink. The UE shall reply with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE and transits to CELL_FACH. 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 160 seconds, verifies that no MEASUREMENT REPORT messages are detected on the uplink DCCH, before sending another PHYSICAL CHANNEL RECONFIGURATION message, ~~comprising~~ allocating DPCH physical channels to the UE. UE shall then return to CELL_DCH state, start to monitor the neighbour cell specified by the SS in the ~~second~~ latest MEASUREMENT CONTROL message while the UE was previously in CELL_~~D~~FACH state. The UE shall 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 to stop performing measurements and generation of reports for cell 2 CPICH RSCP. Thereafter, SS ~~then~~ verifies that no MEASUREMENT REPORT messages are detected. 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 ~~7~~10 (see specific message content).

In the next sequence, SS dispatches a PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH. In this message, common physical channel resources are assigned to the UE. The UE shall respond with a

PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and then transit to CELL_FACH state. SS monitor the uplink DCCH once more to verify that no MEASUREMENT REPORT messages are detected. ~~Following this step, SS increases the P-CPICH RSCP of cell 3 to -45dBm and then stops the transmission of all downlink physical channels of cell 1.~~SS modifies the contents of Master Information Block and System Information Block type 12 messages, 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 ~~timer T305~~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 on the DCCH to end the cell update procedure. Next, SS sends a PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH, assigning DPCH channel in both uplink and downlink directions. The UE shall respond with a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and then return to CELL_~~FA~~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~~System Information Block type 12	UE is initially in CELL_FACH in cell1, after having successfully executed procedure P4 or P6, depending on the supported CN domain. Refer to clause 7.4 of TS 34.108 for details. ~~SYSTEM INFORMATION TYPE BLOCK TYPE~~System Information Block type 12 message~~s~~ ~~is~~ are changed according to the descriptions in "Specific Message Contents" sub-clause.
2		←	PHYSICAL CHANNEL RECONFIGURATION	Allocates DPCH physical channels.
3		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_DCH state.
4		→	MEASUREMENT REPORT	Reports cell 2's ~~RSCP~~ CPICH Ec/No measurement value.
5		←	MEASUREMENT CONTROL	Specifies cell 3 as the measurement object for intra-frequency measurement. ~~The reporting criteria is the same as defined in SYSTEM INFORMATION BLOCK TYPE 12 message, with the exception that threshold for event 1e is lowered.~~
6		→	MEASUREMENT REPORT	UE shall report the estimated value for cell 3's CPICH ~~RSCP~~ Ec/No reading only.
~~7~~		~~←~~	~~MEASUREMENT CONTROL~~	~~SS instructs the UE to perform intra-frequency measurement and reporting for cell 2. These activities should be resumed if the UE subsequently transits to CELL_DCH state again.~~
~~8~~		~~→~~	~~MEASUREMENT REPORT~~	~~SS checks that the content of this message is the same as that received in step 6.~~
~~9~~7		←	PHYSICAL CHANNEL RECONFIGURATION	Allocates PRACH and S-CCPCH physical channels.
~~10~~8		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state.
~~11~~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 perform intra-frequency measurement and reporting for cell 2. These activities should be resumed if the UE subsequently transits to CELL_DCH state again.
11				SS once again waits for 16 seconds and verifies that no MEASUREMENT REPORT messages are sent by UE.
12		←	PHYSICAL CHANNEL RECONFIGURATION	~~SS waits for 10 seconds before sending this message.~~ DPCH physical channels are assigned to the UE in this message.

13	→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall return to CELL_DCH state.
14	→	MEASUREMENT REPORT	UE begins to report cell 2's measured results for CPICH RSCP again.
15	←	MEASUREMENT CONTROL	Terminate all the intra-frequency measurement activity related to cell 2. ~~SS checks that no more MEASUREMENT REPORT messages are sent by the UE.~~
16			SS waits for 16 seconds and verifies that UE stop transmitting MEASUREMENT REPORT messages.
17	←	MEASUREMENT CONTROL	This ~~M~~message is the same as in step ~~7~~10
18	←	PHYSICAL CHANNEL RECONFIGURATION	Allocates PRACH and S-CCPCH physical channels.
19	→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall move to CELL_FACH state.
20			SS checks that no MEASUREMENT REPORT messages are received.
21	←	Master Information Block System Information Block type 12	~~SS increases the transmission power of cell 3 (P-CPICH RSCP is raised to –45dBm) and switches off all downlink transmissions for cell 1.~~ System Information Block type 12 messages are modified to include cell 2 and cell 3 into neighbouring cells monitored list for intra-frequency type measurements. 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.
24	→	PHYSICAL CHANNEL RECONFIGURATION	DPCH physical channels are assigned to the UE in this message.
25	←	PHYSICAL CHANNEL 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~~ System Information Block type 12 (Step 1)

Information Element	Value/Remark
~~Reference to other system information blocks~~	~~Not Present~~
FACH measurement occasion info	Not Present
Measurement control system information	
- Intra-frequency measurement system information	
- Intra-frequency measurement identity ~~number~~	10
- Intra-frequency cell info list	

- CHOICE ~~Removed~~ intra-frequency ~~info list~~cell removal	~~Not Present~~Remove no intra-frequency cells
- New intra-frequency info list	Set to id of cell 2
- Intra-frequency cell id	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 2
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	Not Present – use default values
- Cell selection and Re-selection info ~~for SIB11/12~~	~~0dB~~
~~- Qoffset$_{s,n}$~~	~~0dBm~~
~~- Maximum allowed UL TX power~~	~~Not Present~~
~~- HCS neighbouring cell information~~	~~-20dB, -115dBm~~
~~- Qqualmin, Qrxlevmin~~	
- Intra-frequency measurement quantity	0
- Filter Coefficient	CPICH Ec/No
- 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	~~FALSE~~
~~- CFN-SFN observed time difference~~	
- 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~~TRUE
- CPICH Ec/No reporting indicator	~~TRUE~~FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	~~FALSE~~
~~- CFN-SFN observed time difference~~	Not present
- Reporting quantities for detected cells	Intra-frequency measurement reporting criteria
- CHOICE report criteria	
	1e
- Parameter required for each event	Not Present
- Intra-frequency event identity	Monitored set cells
- Triggering condition 1	Not present
- Triggering condition 2	Not present
- Reporting range	FDD
- Cells forbidden to affect reporting	
- CHOICE Mode	Set to the scrambling code of cell 2
- Primary CPICH Info	Not present
- Primary scrambling code	~~Not Present~~0 dB
- W	~~-60dBm~~18 dB
- Hysteresis	Not present
- Threshold used frequency	Not present
- Reporting deactivation threshold	0
- Replacement activation threshold	Infinity
- Time to trigger	16 seconds
- Amount of reporting	
- Reporting Interval	Report cells within monitored set cells on used frequency
- Reporting cell status	1
- CHOICE reported cells	

	Not Present
- Maximum number of reported cells	
- Inter-frequency measurement system information	Not Present
	Not Present
- Inter-~~system~~ RAT measurement system information	
	Not Present
- Traffic volume measurement system information	
- UE internal measurement system information	

PHYSICAL CHANNEL RECONFIGURATION (Step 2, Step 12 and Step 24)

Use the same message sub-type found in Annex A, which is entitled "Packet to CELL_DCH from CELL_FACH in PS"

MEASUREMENT REPORT (Step 4)

Information Element	Value/Remarks
Measurement identity ~~number~~	Check to see if set to 10
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measured 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
~~- CFN-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~~present
- CPICH RSCP	Check to see if this IE is ~~present~~absent
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measured event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 2

MEASUREMENT CONTROL (Step 5)

Information Element	Value/Remark

Measurement Identity ~~Number~~	11
Measurement Command	Setup
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Intra-frequency measurement
- Intra-frequency cell info list	
- ~~Removed~~ CHOICE intra-frequency cell removal~~info list~~	~~Not Present~~Remove no intra-frequency cells
- New intra-frequency info list	Set to id of cell 3
- Intra-frequency cell id	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 3
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	Not Present
- Cell selection and Re-selection info	
- Intra-frequency measurement quantity	0
- Filter Coefficient	CPICH ~~RSCP~~Ec/No
- Measurement quantity	
- 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	~~FALSE~~
- ~~CFN-SFN observed time difference~~	
- 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~~TRUE
-- CPICH Ec/No reporting indicator	~~TRUE~~FALSE
-- CPICH RSCP reporting indicator	FALSE
-- Pathloss reporting indicator	~~FALSE~~
- ~~CFN-SFN observed time difference~~	Not present
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not present
- Measurement validity	Intra-frequency measurement criteria
- CHOICE report criteria	
- Parameters required for each event	1e
- Intra-frequency event identity	Not Present
- Triggering condition 1	Monitored set cells
- Triggering condition 2	Not Present
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	FDD
- CHOICE Mode	
- Primary CPICH Info	Set to the same scrambling code for cell 3
- Primary Scrambling Code	Not Present
- W	~~Not Present~~0 dB
- Hysteresis	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	~~-90dBm~~ -19.5 dB
- Reporting Threshold	0
- Time to Trigger	Infinity
- Amount of reporting	16 seconds
- Reporting interval	
- Reporting cell status	Report cells within monitored set cells on used frequency
- CHOICE reported cells	1
- Maximum number of reported cells	Not Present
DPCH compressed mode status info	

MEASUREMENT REPORT (Step 6 ~~and step 8~~)

Information Element	Value/Remarks
Measurement identity ~~number~~	Check to see if set to 11
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measured 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
~~- CFN-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~~present
- CPICH RSCP	~~Check to see if this IE is present~~absent
- Pathloss	Check to see if this IE is absent
Measured Results on RACH	Check to see if this IE is absent
Event Results	
- CHOICE event result	Check to see if it's set to 'Intra-frequency measurement event results'
- Intra-frequency event identity	Check to see if this IE is set to '1e'
- Cell measured event results	
- Primary CPICH info	
- Primary scrambling code	Check to see if it's the same code for cell 3

PHYSICAL CHANNEL RECONFIGURATION (Step ~~9~~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 ~~7~~ 10 and 17)

Information Element	Value/Remark

Measurement Identity~~ Number~~	12
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 ~~R~~removal~~ed intra-frequency info list~~	Remove no intra-frequency cells~~Not Present~~
- New intra-frequency info list	Set to id of cell 2
- Intra-frequency cell id	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 2
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	Not Present
- Cell selection and Re-selection info	
- Intra-frequency measurement quantity	0
- Filter Coefficient	CPICH RSCP
- Measurement quantity	
- 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	~~FALSE~~
~~- CFN-SFN observed time difference~~	
- 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	~~FALSE~~
~~- CFN-SFN observed time difference~~	Not present
- Reporting quantities for detected cells	Not present
- Reporting cell status	~~Resume~~
- Measurement validity	CELL_DCH
- UE state	Intra-frequency measurement criteria
- CHOICE report criteria	
- Parameters required for each event	1e
- Intra-frequency event identity	Not Present
- Triggering condition 1	Monitored set cells
- Triggering condition 2	Not Present
- Reporting Range	Not Present
- Cells forbidden to affect Reporting range	
- Primary CPICH Info	Set to the same scrambling code for cell 2
- Primary Scrambling Code	Not Present
- W	~~Not Present~~0 dB
- Hysteresis	Not Present
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	~~-65~~80 dBm
- Reporting Threshold	0
- Time to Trigger	Infinity
- Amount of reporting	16 seconds
- Reporting interval	
- Reporting cell status	Report cells within monitored set cells on used frequency~~Within monitored cells on used frequency and within monitored cells on non-used frequency~~
- CHOICE reported~~ing~~ cell	
- Maximum number of reported cells~~Maximum number of reporting cells type2~~	~~2~~1
DPCH compressed mode status info	Not Present

~~PHYSICAL CHANNEL RECONFIGURATION (Step 12 and 24)~~

~~Same as in step 2~~

MEASUREMENT REPORT (Step 14)

Information Element	Value/Remarks
Measurement identity~~ number~~	Check to see if set to 12
Measured Results	
- CHOICE measurement	Check to see if set to "Intra-frequency measured results list"
- Intra-frequency measured 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
~~- CFN-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
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 measured 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~~ Number~~	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	13
- Intra-frequency measurement identity	Not Present
- 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
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- Read SFN Indicator	FALSE
- 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
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 3
- Primary CPICH TX power	Not Present
- Read SFN Indicator	FALSE
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not Present – use default values
- Intra-frequency measurement quantity	
- Filter Coefficient	0
- Measurement quantity	CPICH Ec/No
- Intra-frequency measurement for RACH reporting	Not Present
- Maximum number of reported cells on RACH	No report
- Reporting information for state CELL_DCH	
- 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 0000 0001'
- S-RNTI	Check to see if set to '0000 0000 0000 0000 0000 0001'
Integrity check info	Not checked
START List	Checked to see if the 'CN domain identity' and 'START' IEs are present for all CN domains supported by the UE
AM_RLC error indicator (for C-plane)	Check to see if set to 'FALSE'
AM_RLC error indicator (for U-plane)	Check to see if set to 'FALSE'
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.

8.4.1.7.5 Test Requirement

After step 3 the UE shall report cell 2's CPICH ~~RSCP~~ Ec/No value by transmitting ~~a~~ MEASUREMENT REPORT message~~s~~.

After step 5 the UE shall delete all measurement and reporting contexts obtained from listening to ~~s~~System ~~i~~Information messages. ~~However, i~~It shall transmit ~~a~~ MEASUREMENT REPORT message~~s~~ containing measured results of cell 3's CPICH RSCP value only, in accordance to the contents of MEASUREMENT CONTROL message transmitted by SS in step 5.

~~After step 7 the UE shall continue to transmit MEASUREMENT REPORT messages, which contain identical contents to that sent in step 6.~~

After step 9 and step 11 the UE shall ~~stop~~ 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 ~~7~~10. The UE shall transmit MEASUREMENT REPORT message~~s~~, containing measured results of cell 2's CPICH RSCP value.

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

After step 21 the UE shall re-select to cell ~~3~~2 and initiate a cell update procedure. SS shall receive a CELL UPDATE message on the uplink CCCH of cell ~~3~~2, with the "cell update cause" IE stated as "cell re-selection".

After step 25 the UE shall not ~~start to perform~~resume measurements and any associated reporting activities for cell 2'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 inter-frequency neighbour cells indicated in ~~s~~System ~~i~~Information Block type 11 or 12 messages. If the UE has a previously stored inter-frequency measurement context marked as 'resume' and for which the IE "UE state for reporting" has been assigned to "CELL_DCH", it shall reinstate the suspended measurement and associated reporting activities after it has re-entered CELL_DCH state. The UE shall be able to start~~/~~ or terminate 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.~~8~~7.2~~, 8.5.7.6.13~~

8.4.1.8.3 Test Purpose

To confirm that the UE erases all inter-frequency measurement contexts ~~used~~ received from System Information Block type 11 or 12 while in CELL_FACH state, when it moves to CELL_DCH. To confirm that the UE resumes inter-frequency measurements and reporting~~, which was~~ stored previously ~~stored~~ in the UE, after it moves to CELL_DCH 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

~~SS: 3 cells – All 3 cells are active and the applicable radio conditions are stated in the table below:~~

System Simulator: 3 cells – The initial configurations of the 3 cells in the SS should follow the values indicated in table 8.4.1.8-1. The table is found in "Test Procedure" sub-clause.

	~~Cell 1~~	~~Cell 4~~	~~Cell 5~~
~~UARFCN (N_u and N_d)~~	~~Channel 1~~	~~Channel 2~~	~~Channel 2~~
~~CPICH RSCP~~	~~-60 dBm~~	~~-65 dBm~~	~~-75 dBm~~
~~$Q_{rxlevmin}$~~	~~-90 dBm~~	~~-90 dBm~~	~~-90 dBm~~
~~S~~	~~30~~	~~25~~	~~15~~

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
$\hat{I}_{or}/I_{oc}$	dB	9.7	7.3	5.7
CPICH Ec/Io	dB	-10.4	-12.7	-14.3
CPICH RSCP	dBm	-70.3	-72.7	-74.3

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 execute an inter-frequency measurement for cell 5. The parameters of the reporting criteria are as follow: event-triggered with event identity ='2c', reporting quantity = "CPICH RSCP", threshold for non-used frequency = '-850 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 ~~set to 'resume'~~ and "UE state ~~for reporting~~" 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 modifies the content of SYSTEM INFORMATION BLOCK TYPE 12 message, which indicates that cell 4 shall be included in the list of neighbouring cells to be monitored for inter-frequency measurements.~~ Following this action, SS sends a PHYSICAL CHANNEL RECONFIGURATION message on the downlink DCCH and commands the UE to change its physical channel to PRACH and S-CCPCH. SS modifies the content of System Information Block type 12 messages, such that cell 4 is included in the list of neighbouring cells to be monitored for inter-frequency measurements. Once again, SS verifies that the UE does not transmit MEASUREMENT REPORT messages in the uplink direction.

SS sends PHYSICAL CHANNEL RECONFIGURATION message to allocate dedicated physical channels to the UE. ~~Simultaneously~~In this message, SS ~~uses this message to~~ commands the UE to start applying compressed mode mechanism for DPCH. The UE shall reply with PHYSICAL CHANNEL RECONFIGURATION COMPLETE message and then move to CELL_DCH state. SS waits for 10 seconds. The UE shall transmit MEASUREMENT REPORT message, containing the selected frequency quality estimate (in this case CPICH Ec/No) of cell 5. SS verifies that this message does not contain measured results for cell 4. After sending this message, the UE shall not transmit any more MEASUREMENT REPORT messages.

SS modifies the reporting criteria by transmitting a MEASUREMENT CONTROL message on the downlink DCCH using AM-RLC. In this message, SS commands the UE to perform inter-frequency measurement and reporting for cell 5 using periodic reporting mechanism. Upon receiving this message, the UE shall transmit MEASUREMENT REPORT message at 2 seconds interval. In the next sequence, 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, after executing procedure P11 or P13, depending on the supported CN domain. Refer to clause 7.4 of TS 34.108.
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~~				~~SS modifies SYSTEM INFORMATION BLOCK TYPE 12 to include cell 4 into the neighbour cell list for inter-frequency measurements.~~
~~4~~5		←	PHYSICAL CHANNEL RECONFIGURATION	SS allocates PRACH and S-CCPCH physical resources.
~~5~~6		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE shall moves to CELL_FACH state.
6		←	System Information Block type 12	SS modifies SIB 12 in order to include cell 4 into the neighbour cell list for inter-frequency measurements.
7				SS confirms that there are no transmissions of MEASUREMENT REPORT message in the uplink direction.
8		←	PHYSICAL CHANNEL RECONFIGURATION	SS allocates DPCH physical channels and specifies compressed mode parameters
9		→	PHYSICAL CHANNEL RECONFIGURATION COMPLETE	UE moves to CELL_DCH state.
10		→	MEASUREMENT REPORT	UE shall resume inter-frequency measurement task for cell 5 and transmit this message to report the measured CPICH Ec/No value
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 ~~waits for 5 seconds and~~ verifies that no MEASUREMENT REPORT messages are received.
15		←	MEASUREMENT CONTROL	SS activates the pattern sequence stored by the UE.
16		→	MEASUREMENT REPORT	SS checks that MEASURE-MENT REPORT messages are received at 2 seconds interval.

Specific Message Content

SYSTEM INFORMATION BLOCK TYPE 12 (Step 1)

Information Element	Value/Remark
References to other system information blocks	Not Present
FACH measurement occasion info	
- k_UTRA	2
- Other RAT present in inter-system cell info	Not Present
Measurement control system information	
- Intra-frequency measurement system information	Not Present
- Inter-frequency measurement system information	
- Inter-frequency measurement identity number	15
- Inter-frequency cell info list	
- Removed inter-frequency info list	Not Present
- 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
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 4
- Primary CPICH TX power	Not Present
- Read SFN Indicator	FALSE
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info for SIB11/12	
- $Qoffset_{s,n}$	0dB
- Maximum allowed UL TX power	0dBm
- HCS neighbouring cell information	Not Present
- Qqualmin, Qrxlevmin	-20dB, -90dBm
- 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 measurement reporting criteria	
- Parameters required for each event	
- Inter-frequency event identity	2c
- Threshold used frequency	Not Present
- W used frequency	Not Present
- Hysteresis	1.0dB
- Time to trigger	10 sec
- Amount of reporting	1
- Reporting interval	0
- Parameters required for each non-used frequency	
- Threshold non-used frequency	-80dBm
- W non-used frequency	0.0
- Inter-system measurement system information	Not Present
- Traffic volume measurement system information	Not Present
- UE internal measurement system information	Not Present

MEASUREMENT CONTROL (Step 2)

Information Element	Value/Remark
Measurement Identity ~~Number~~	14
Measurement Command	Setup
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE ~~Removed~~ inter-frequency ~~info list~~cell removal	~~Not Present~~No inter-frequency cells removed
- New inter-frequency info list	~~Set to id of cell 5~~
- Inter-frequency cell id	Set to id of cell 5
- Frequency info	UARFCN of the uplink frequency for cell 5
- UARFCN uplink (Nu)	UARFCN of the downlink frequency for cell 5
- UARFCN downlink (Nd)	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 5
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Inter-frequency measurement quantity	Inter-frequency reporting criteria
- CHOICE reporting criteria	0
- Filter Coefficient	CPICH Ec/No
- Measurement quantity for frequency quality estimate	
- Inter-frequency reporting quantity	FALSE
- UTRA Carrier RSSI	TRUE
- Frequency quality estimate	
- 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
~~- CFN-SFN observed time difference~~	~~FALSE~~
- Reporting cell status	Not present
- Measurement validity	
~~- Resume/Release~~	~~Resume~~
- UE State	CELL_DCH
- Inter-frequency set update	Not Present
- CHOICE report criteria	Inter-frequency measurement reporting criteria
- Parameters required for each event	2c
- Inter-frequency event identity	Not Present
- Threshold used frequency	Not Present
- W used frequency	1.0 dB
- Hysteresis	10 seconds
- Time to trigger	~~1~~
~~- Amount of reporting~~	~~0~~
~~- Reporting Interval~~	Not Present
- Reporting cell status	
- Parameters required for each non-used frequency	-85~~0~~ dBm
- Threshold non used frequency	0.0
- W non-used frequency	Not Present
DPCH compressed mode status info	

PHYSICAL CHANNEL RECONFIGURATION (Step 4~~5~~)

Use the same message sub-type found in Annex A titled “(Packet to CELL_FACH from CELL_DCH in PS)”.

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
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 4
- Primary CPICH TX power	Not Present
- Read SFN Indicator	FALSE
- TX Diversity Indicator	FALSE
- Cell selection and Re-selection info	Not Present – use default values
- Inter-RAT measurement system information	Not Present
- Traffic volume measurement system information	Not Present
- 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	
- CHOICE Mode	FDD
- Downlink DPCH power control information	
- DPC mode	0 (Single)
- 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	255
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRAfter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRAfter2	Not Present
- TX Diversity Mode	None
- SSDT information	Not Present
~~- S field~~	
~~- Code Word Set~~	
- Default DPCH Offset Value	0

MEASUREMENT REPORT (Step 10)

Information Element	Value/Remarks
Measurement identity ~~number~~	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
~~- CFN-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 present
- 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	
- 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 ~~Number~~	14
Measurement Command	Modify
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- CHOICE ~~Removed~~ inter-frequency ~~info list~~cell removal	~~Not Present~~No inter-frequency cells removed
- New inter-frequency info list	Set to id of cell 5
- Inter-frequency cell id	
- Frequency info	UARFCN of the uplink frequency for cell 5
- UARFCN uplink (Nu)	UARFCN of the downlink frequency for cell 5
- UARFCN downlink (Nd)	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 5
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Inter-frequency measurement quantity	Inter-frequency reporting criteria
- CHOICE reporting criteria	1
- Filter Coefficient	CPICH Ec/No
- Measurement quantity for frequency quality estimate	
- Inter-frequency reporting quantity	FALSE
- UTRA Carrier RSSI	TRUE
- Frequency quality estimate	
- 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
~~- CFN-SFN observed time difference~~	~~FALSE~~
- Reporting cell status	~~Not present~~
- CHOICE reported~~ing~~ cell	
- Maximum number of reported~~ing~~ cells ~~type2~~	Report cells ~~W~~within active and/or monitored ~~cells~~ set on used frequency ~~and~~ or within active and/or monitored ~~cells~~ set on non-used frequency
- Measurement validity	2
- Inter-frequency set update	Not Present
- CHOICE report criteria	Not Present
- Amount of reporting	Periodic reporting criteria
- Reporting interval	Infinity
DPCH compressed mode status info	2000 milliseconds
	Not Present

MEASUREMENT REPORT (Step 12, 16)

Information Element	Value/Remarks
Measurement identity ~~number~~	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 set to the id of cell 5
- 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 present
- CPICH RSCP	Check to see if it is absent
- 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	255
- Transmission gap pattern sequence configuration parameters	Not Present

MEASUREMENT CONTROL (Step 15)

Information Element	Value/Remark
Measurement Identity ~~Number~~	Any number except 14
Measurement Command	~~Release~~Modify
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Not Present
DPCH compressed mode status info	
- Transmission gap pattern sequence	
- TGPSI	1
- TGPS Flag	Active
- TGCFN	255

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 measured results for cell 5's CPICH Ec/No value. The UE shall not transmit any messages pertaining to cell 4's measurements.

After step 11 the UE shall send MEASUREMENT REPORT messages, which comprises cell 5's CPICH Ec/No measured value 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 ~~6~~9.

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 indicates the UE to perform a measurement that is not supported in the UE, the UE shall keep the measurement configuration. Then the UE shall transmit a MEASUREMENT CONTROL FAILURE message on the DCCH using AM RLC within 8 frames (excluding the effect of TTI mis-alignment).

Reference

3GPP TS 25.331 clause 8.4.1

8.4.1.9.3 Test purpose

To confirm that the UE transmits a MEASUREMENT CONTROL FAILURE message, with the value "unsupported measurement" specified in IE "failure cause" when the SS commanded the UE to perform an unsupported measurement by sending a MEASUREMENT CONTROL message.

8.4.1.9.4 Method of test

Initial Condition

System Simulator: 1cell

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.

[Editor's note: It is assumed in this test that the UE under test does not possess any inter-~~system~~ RAT measurement capability. The mandatory type(s) of measurement capability that should be implemented by the UE is to be discussed]

Test Procedure

The UE is in the CELL_DCH state. The SS transmits a MEASUREMEN CONTROL message which includes parameters (e.g. Measurement identity number: 2, measurement command: Setup, measurement type: inter-~~system~~ RAT measurements, measurement reporting mode: unacknowledged and periodical reporting, measurement object: inter-~~system~~ RAT cell information, measurement quantity: Signal strength, reporting quantity: RSSI on BCCH carrier). As the UE under test does not support inter-~~system~~ RAT measurement, it shall transmit a MEASUREMENT CONTROL FAILURE message on the uplink DCCH using AM RLC.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				The UE is in the CELL_DCH state.
2	←		MEASUREMENT CONTROL	Including the parameters (e.g. Measurement identity number: 2, measurement command: Setup, measurement type: inter-~~system~~ RAT measurements, measurement reporting mode: unacknowledged and periodical reporting, measurement object: inter-~~system~~ RAT cell information, measurement quantity: Signal strength, reporting -quantity: RSSI on BCCH carrier).
3	→		MEASUREMENT CONTROL FAILURE	Which is set to “unsupported measurement” in IE “failure cause”. SS calculates the time interval between the transmissions of MEASUREMENT CONTROL message on the downlink DCCH to the uplink reception of MEASUREMENT CONTROL FAILURE on the uplink DCCH. SS verifies that the calculated time interval is within (8 frames + TTI)

Specific Message Content

MEASUREMENT CONTROL (Step 2)

Information Element	Value/Remark
RRC transaction identifier	Select an arbitrary an integer between 0 and 3
Measurement Identity ~~Number~~	2
Measurement Command	Setup
Measurement Reporting Mode	Unacknowledged mode
Additional measurements list	Not Present
CHOICE measurement type	Inter-~~system~~ RAT measurement
- Inter-~~system~~ RAT cell info list	
- CHOICE ~~Removed~~ inter-~~system~~ RAT cell~~s~~ removal	~~Not Present~~Remove no inter-RAT cells ~~1~~
- New inter-~~system~~ RAT cells	1
- Inter-~~system~~ RAT cell id	GSM
- CHOICE *Radio Access Technology*	Not Present
- Cell selection and re-selection info	~~Not Present~~
~~- Qoffset$_{s,n}$~~	~~-20dB, -90dBm~~
~~- HCS Neighbouring Cell Information~~	~~Set to the maximum allowed by UE RF power class~~
~~- Qqualmin, Qrxlevmin~~	Set to the BSIC code of cell 2
~~- Maximum allowed UL TX power~~	Set to the ARFCN assigned to cell 2
- BSIC	Not Present
- BSIC ARFCN	
- Output power	~~Inter-frequency reporting criteria~~GSM
- Inter-~~system~~ RAT measurement quantity	GSM Carrier RSSI
- CHOICE system~~*reporting criteria*~~	0
- Measurement quantity	~~CPICH Ec/No~~Not required
- Filter Coefficient	
- ~~Measurement quantity for frequency quality estimate~~BSIC verification required	FALSE
- Inter-~~system~~ RAT reporting quantity	GSM
- UTRAN estimate quantity	FALSE
- CHOICE system	FALSE
- Pathloss	TRUE
- Observed time difference to GSM cell	Not Present
- GSM Carrier RSSI	No reporting
- Reporting cell status	~~TRUE~~
- CHOICE report criteria	~~FALSE~~
~~- UTRA Carrier RSSI~~	
~~- Frequency quality estimate~~	~~FALSE~~
~~- Non frequency related cell reporting quantities~~	~~FALSE~~
~~- SFN-SFN observed time difference~~	~~FALSE~~
~~- CPICH Ec/N0~~	
~~- CPICH RSCP~~	~~FALSE~~
	~~FALSE~~
~~- Pathloss~~	~~Not Present~~
~~- CFN-SFN observed time difference~~	
~~- Reporting Cell Status~~	~~Within monitored cells on used frequency and within monitored cells on non-used frequency~~
~~- CHOICE reporting cell~~	~~2~~
~~- Maximum number of reporting cells type2~~	~~Periodical reporting criteria~~
~~- CHOICE Report Criteria~~	~~Infinity~~
~~- Amount of reporting~~	~~32 seconds~~
~~- Reporting Interval~~	Not Present
DPCH compressed mode status info	

MEASUREMENT CONTROL FAILURE (Step 3)

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 2.
Failure cause	~~To c~~Check if it is set to "Unsupported measurement"

8.4.1.9.54 Test requirement

After step 2 the UE shall identify the unsupported measurement element in the MEASUREMENT CONTROL message and transmit a MEASUREMENT CONTROL FAILURE. In this message, the value "unsupported measurement" shall be specified in IE "failure cause". SS shall be able to receive the MEASUREMENT CONTROL FAILURE message on the uplink DCCH, within a time interval of (8 frames + Transmission Time Interval) from the sending of the last transport block that contains the downlink MEASUREMENT CONTROL message.

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 a MEASUREMENT CONTROL message containing an unexpected conditional IE, it shall reply with a MEASUREMENT CONTROL FAILURE message stating the appropriate protocol error information. The UE shall transmit the MEASUREMENT CONTROL FAILURE message at the latest of 8 frames (excluding the effect of TTI mis-alignment), after SS has sent the last transport block containing the downlink MEASUREMENT CONTROL message. It shall maintain the monitoring and measurement reporting mechanism as in before the MEASUREMENT CONTROL message has been received.

Reference

3GPP TS 25.331 clause 8.4.1.9

8.4.1.10.3 Test Purpose

To confirm that the UE does not change its current monitoring and measurement settings after it has received an illegal MEASUREMENT CONTROL message, which contains an unexpected IE error. To confirm that the UE resume its normal measurement reporting operations after transmitting MEASUREMENT CONTROL FAILURE message to the SS.

8.4.1.10.4 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 transmitting report messages for the reporting quantity "UE Transmitted Power". SS then waits for the MEASUREMENT RERORT message with the allocated measurement identity to arrive. Then it transmits the MEASUREMENT CONTROL message again. In this message, SS requests that the reporting activities for "UE Transmitted Power" be stopped. At the end of this message, SS appends an unknown information element. When the

UE receives this message, it shall reply with MEASURMENT CONTROL FAILURE message as it has detected a protocol error. It shall not cease to report its own 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 transmit power".
3	→		MEASUREMENT REPORT	UE shall send this message periodically at 32 seconds interval
4	←		MEASURMENT CONTROL	SS sends a MEASUREMENT CONTROL message to request that UE stop the reporting activity.
5	→		MEASUREMENT CONTROL FAILURE	UE shall maintain its current measurement context and send this message. SS calculates the time interval between the transmissions of MEASUREMENT CONTROL message in step 4 to the uplink reception of MEASUREMENT CONTROL FAILURE message. SS verifies that the calculated time interval is within (8 frames + TTI)
6	→		MEASUREMENT REPORT	32 seconds after step 3, UE shall continue to transmit this message to the SS.

Specific Message Content

MEASUREMENT CONTROL (Step 2)

Information Element	Value/Remark
Measurement Identity ~~Number~~	3
Measurement Command	Setup
Measurement Reporting Mode	Not Present
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)

Information Element	Value/Remarks
Measurement identity ~~number~~	Check to see if set to 3
Measured Results	
CHOICE measurement	Check to see if set to "UE internal measurement"
- 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
Event Results	Check to see if this IE is absent

MEASUREMENT CONTROL (Step 4)

Information Element	Value/Remark
RRC transaction identifier	Selects an arbitrary integer between 0 and 3
Measurement Identity ~~Number~~	3
Measurement Command	Stop
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Contains an arbitrary value
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 "protocol error"
Protocol error information	Check to see if set to "Message extension not comprehended"

MEASUREMENT REPORT (Step 6)

Same as in the requirement for step 3

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 "message extension not comprehended". SS shall be able to receive the MEASUREMENT CONTROL FAILURE message on the uplink DCCH, within a time interval of (8 frames + Transmission Time Interval) from the sending of the last transport block that contains the downlink MEASUREMENT CONTROL message in step 4. ~~It~~ The UE shall continue to send MEASUREMENT REPORT with the correct identity number and measurement result entries at approximately 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 (when transmission gap pattern sequences create transmission gaps in the same frame), it shall delete the transmission

gap pattern sequence configuration associated with highest value of TGPSI. The UE shall also terminate any inter-frequency measurements corresponding to the deleted transmission gap pattern sequence. Finally, 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, clause 8.6.6.15~~4~~

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 ~~the~~ it receive~~s~~d 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 – both cell 1 and cell 4 are active. See Table 8.4.1.11-1 for the power settings.~~The downlink power level of cell 4 is 10dB below cell 1.~~

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
$\hat{I}_{or}/I_{oc}$	dB	5.7	2.3
CPICH Ec/Io	dB	-11.0	-12.0
CPICH RSCP	dBm	-74.3	-77.7

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 ~~2~~4's CPICH Ec/No value. Simultaneously, the stored transmission gap pattern sequence configuration associated with TGPSI=1 is indicated to be activated in this message. Upon the reception of this message, the UE shall transmit MEASUREMENT REPORT messages periodically at 16 seconds interval to report cell ~~2~~4's measurement results. 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 cell ~~2~~4's CPICH RSCP 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 RADIO BEARER RECONFIGURATION message and commands the activation of transmission gap pattern sequence with TGPSI=2. This is expected to result in the detection of a runtime error due to overlapping compressed mode configuration. 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-frequency measurement tasks associated with TGPSI=2. However, the UE shall continue to send MEASUREMENT REPORT messages to report cell ~~2~~4's CPICH Ec/No value, which is measured during the transmission gap created by compressed mode configuration corresponding to TGPSI=1.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is initially in CELL_DCH state.
2	←		MEASUREMENT CONTROL	Start inter-frequency measurements for cell ~~2~~4's CPICH Ec/No using transmission gap pattern sequence with TGPSI=1.
3	→		MEASUREMENT REPORT	UE reports cell ~~2~~4's CPICH Ec/No readings periodically.
4	←		MEASUREMENT CONTROL	Assign inter-frequency measurements for cell ~~2~~4's CPICH RSCP. This measurement task is associated with transmission gap pattern sequence with TGPSI=2, which has not been activated yet.
5	←		RADIO BEARER RECONFIGURATION	SS specifies the parameters for transmission gap pattern sequence with TGPSI=2 and activate it simultaneously
6				UE shall delete transmission gap pattern sequence configuration associated with TGPSI=2.
7	→		PHYSICAL CHANNEL RECONFIGURATION FAILURE	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 ~~Number~~	1
Measurement Command	Setup
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- ~~Removed~~ CHOICE inter-frequency ~~info list~~cell removal	~~Not Present~~No inter-frequency cells removed
- New inter-frequency info list	Set to id of cell 4
- Inter-frequency cell id	
- Frequency info	UARFCN of the uplink frequency for cell 4
- UARFCN uplink (Nu)	UARFCN of the downink frequency for cell 4
- UARFCN downlink (Nd)	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 4
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Inter-frequency measurement quantity	Inter-frequency reporting criteria
- CHOICE reporting criteria	0
- Filter Coefficient	CPICH Ec/No
- Measurement quantity for frequency quality estimate	
- Inter-frequency reporting quantity	FALSE
- UTRA Carrier RSSI	TRUE
- Frequency quality estimate	
- 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	TRUE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
~~- CFN-SFN observed time difference~~	~~FALSE~~
- Reporting cell status	
- CHOICE reported~~ing~~ cell	Report cells ~~W~~within active and/or monitored ~~cells~~ set on used frequency ~~and~~or within active and/or monitored ~~cells~~ set on non-used frequency
- Maximum number of reported~~ing~~ cells ~~type2~~	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	
- TGPSI	1
- TGPS Status Flag	Active
- TGCFN	255

MEASUREMENT REPORT (Step 3 and 8)

Information Element	Value/Remarks
Integrity check info	If integrity protection is activated, this IE shall be present and SS checks that the MAC-I value matches with the calculated X-MAC value. Else, this IE shall be absent.

Measurement identity ~~number~~	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
~~- CFN-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 present
- 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 ~~Number~~	2
Measurement Command	Setup
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- ~~Removed~~ CHOICE inter-frequency cell removal~~info list~~	~~Not Present~~No inter-frequency cells removed
- New inter-frequency info list	Set to id of cell 4
- Inter-frequency cell id	
- Frequency info	UARFCN of the uplink frequency for cell 4
- UARFCN uplink (Nu)	UARFCN of the downink frequency for cell 4
- UARFCN downlink (Nd)	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 4
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Inter-frequency measurement quantity	Inter-frequency reporting criteria
- CHOICE reporting criteria	0
- Filter Coefficient	CPICH RSCP
- Measurement quantity for frequency quality estimate	
- Inter-frequency reporting quantity	FALSE
- UTRA Carrier RSSI	TRUE
- Frequency quality estimate	
- 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	~~TRUE~~FALSE
- CPICH RSCP reporting indicator	~~FALSE~~TRUE
- Pathloss reporting indicator	FALSE
~~- CFN-SFN observed time difference~~	~~FALSE~~
- Reporting cell status	
- CHOICE reported~~ing~~ cell	Report cells ~~W~~within active and/or monitored ~~cells~~ set on used frequency ~~and~~ or within active and/or monitored ~~cells~~ set on non-used frequency
- Maximum number of reported~~ing~~ cells ~~type2~~	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	
- TGPSI	
- TGPS Status Flag	2
- TGCFN	Inactive 255

RADIO BEARER RECONFIGURATION

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” found in Annex A with the following exceptions:

Information Element	Value/remark
- DPCH compressed mode info	
- TGPSI	2
- TGPS Status Flag	Active
- TGCFN	255
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present

PHYSICAL CHANNEL RECONFIGURATION FAILURE

Information Element	Value/remark
Integrity check info	If integrity protection is activated, this IE shall be present and SS checks that the MAC-I value matches with the calculated X-MAC value. Else, this IE shall be absent.
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-frequency 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 CPICH Ec/No readings for cell 4~~2~~. However, no MEASUREMENT REPORT messages containing the CPICH RSCP readings for cell 4~~2~~ shall be sent by the UE.

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 (when transmission gap pattern sequences create transmission gaps in the same frame), it shall delete the transmission gap pattern sequence configuration associated with highest value of TGPSI. The UE shall also terminate any inter-frequency measurements corresponding to the deleted transmission gap pattern sequence. Finally, 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, clause 8.6.6.1~~4~~5

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 ~~the~~ it receive~~s~~d 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 inter-frequency measurements corresponding to the deleted transmission gap pattern sequence

8.4.1.12.4 Method of test

Initial Condition

System Simulator: 2 cells – both cell 1 and cell 4 are active. See Table 8.4.1.11-1 in clause 8.4.1.11.4 for the power settings.~~The downlink power level of cell 4 is 10dB below cell 1.~~

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 should 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 ~~2~~4’s CPICH Ec/No value. Simultaneously, the stored transmission gap pattern sequence configuration associated with TGPSI=1 is indicated to be activated in this message. Upon the reception of this message, the UE shall transmit MEASUREMENT REPORT messages periodically at 16 seconds interval to report cell ~~2~~4’s measurement results. 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 cell ~~2~~4’s CPICH RSCP 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 TRANSPORT CHANNEL RECONFIGURATION message and commands the activation of transmission gap pattern sequence with TGPSI=2. This is expected to result in the detection of a runtime error due to overlapping compressed mode configuration. 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-frequency measurement tasks associated with TGPSI=2. However, the UE shall continue to send MEASUREMENT REPORT messages to report cell ~~2~~4’s CPICH Ec/No value, which is measured during the transmission gap created by compressed mode configuration corresponding to TGPSI=1.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is initially in CELL_DCH state.
2		←	MEASUREMENT CONTROL	Start inter-frequency measurements for cell ~~2~~4's CPICH Ec/No using transmission gap pattern sequence with TGPSI=1.
3		→	MEASUREMENT REPORT	UE reports cell ~~2~~4's CPICH Ec/No readings periodically.
4		←	MEASUREMENT CONTROL	Assign inter-frequency measurements for cell ~~2~~4's CPICH RSCP. This measurement task is associated with transmission gap pattern sequence with TGPSI=2, which has not been activated yet.
5		←	TRANSPORT CHANNEL RECONFIGURATION	SS specifies the parameters for transmission gap pattern sequence with TGPSI=2 and activate it simultaneously
6				UE shall delete transmission gap pattern sequence configuration associated with TGPSI=2.
7		→	PHYSICAL CHANNEL RECONFIGURATION FAILURE	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 ~~Number~~	1
Measurement Command	Setup
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- ~~Removed~~ CHOICE inter-frequency cell removal~~info list~~	~~Not Present~~No inter-frequency cells removed
- New inter-frequency info list	Set to id of cell 4
- Inter-frequency cell id	
- Frequency info	UARFCN of the uplink frequency for cell 4
- UARFCN uplink (Nu)	UARFCN of the downink frequency for cell 4
- UARFCN downlink (Nd)	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 4
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Inter-frequency measurement quantity	Inter-frequency reporting criteria
- CHOICE reporting criteria	0
- Filter Coefficient	CPICH Ec/No
- Measurement quantity for frequency quality estimate	
- Inter-frequency reporting quantity	FALSE
- UTRA Carrier RSSI	TRUE
- Frequency quality estimate	
- 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	TRUE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
~~- CFN-SFN observed time difference~~	~~FALSE~~
- Reporting cell status	
- CHOICE reported~~ing~~ cell	Report cells ~~W~~within active and/or monitored set~~cells~~ on used frequency ~~and~~or within active and/or monitored ~~cells~~ set on non-used frequency
- Maximum number of reported~~ing~~ cells ~~type2~~	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	
- TGPSI	1
- TGPS Status Flag	Active
- TGCFN	255

MEASUREMENT REPORT (Step 3 and 8)

Information Element	Value/Remarks
Integrity check info	If integrity protection is activated, this IE shall be present and SS checks that the MAC-I value matches with the calculated X-MAC value. Else, this IE shall be absent.
Measurement identity ~~number~~	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
~~- CFN-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 present
- 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 ~~Number~~	2
Measurement Command	Setup
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- ~~Removed~~ CHOICE inter-frequency ~~info list~~cell removal	~~Not Present~~No inter-frequency cells removed
- New inter-frequency info list	Set to id of cell 4
- Inter-frequency cell id	
- Frequency info	UARFCN of the uplink frequency for cell 4
- UARFCN uplink (Nu)	UARFCN of the downink frequency for cell 4
- UARFCN downlink (Nd)	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 4
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Inter-frequency measurement quantity	Inter-frequency reporting criteria
- CHOICE reporting criteria	0
- Filter Coefficient	CPICH RSCP
- Measurement quantity for frequency quality estimate	
- Inter-frequency reporting quantity	FALSE
- UTRA Carrier RSSI	TRUE
- Frequency quality estimate	
- 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	~~TRUE~~FALSE
- CPICH RSCP reporting indicator	~~FALSE~~TRUE
- Pathloss reporting indicator	FALSE
~~- CFN-SFN observed time difference~~	~~FALSE~~
- Reporting cell status	
- CHOICE reported~~ing~~ cell	Report cells ~~W~~within active and/or monitored ~~cells~~ set on used frequency ~~and~~or within active and/or monitored ~~cells~~ set on non-used frequency
- Maximum number of reported~~ing~~ cells ~~type2~~	
- Measurement validity	2
- Inter-frequency set update	Not present
- CHOICE report criteria	Not present
- Amount of reporting	Periodic reporting criteria
- Reporting interval	Infinity
DPCH compressed mode status info	16 seconds
- TGPSI	
- TGPS Status Flag	2
- TGCFN	Inactive 255

TRANSPORT CHANNEL RECONFIGURATION

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” found in Annex A with the following exceptions:

Information Element	Value/remark
- DPCH compressed mode info	
- TGPSI	2
- TGPS Status Flag	Active
- TGCFN	255
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present

PHYSICAL CHANNEL RECONFIGURATION FAILURE

Information Element	Value/remark
Integrity check info	If integrity protection is activated, this IE shall be present and SS checks that the MAC-I value matches with the calculated X-MAC value. Else, this IE shall be absent.
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-frequency 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 CPICH Ec/No readings for cell ~~2~~4. However, no MEASUREMENT REPORT messages containing the CPICH RSCP readings for cell ~~2~~4 shall be sent by the UE.

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 (when transmission gap pattern sequences create transmission gaps in the same frame), it shall delete the transmission gap pattern sequence configuration associated with highest value of TGPSI. The UE shall also terminate

any inter-frequency measurements corresponding to the deleted transmission gap pattern sequence. Finally, 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, 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 ~~the~~ it receive~~s~~d 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 – both cell 1 and cell 4 are active. See Table 8.4.1.11-1 in clause 8.4.1.11.4 for the power settings.~~The downlink power level of cell 4 is 10dB below cell 1.~~

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 should 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 ~~2~~4’s CPICH Ec/No value. Simultaneously, the stored transmission gap pattern sequence configuration associated with TGPSI=1 is indicated to be activated in this message. Upon the reception of this message, the UE shall transmit MEASUREMENT REPORT messages periodically at 16 seconds interval to report cell ~~2~~4’s measurement results. 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 cell ~~2~~4’s CPICH RSCP 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. This is expected to result in the detection of a runtime error due to overlapping compressed mode configuration. 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-frequency measurement tasks associated with TGPSI=2. However, the UE shall continue to send MEASUREMENT REPORT messages to report cell ~~2~~4’s CPICH Ec/No value, which is measured during the transmission gap created by compressed mode configuration corresponding to TGPSI=1.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1				UE is initially in CELL_DCH state.
2		←	MEASUREMENT CONTROL	Start inter-frequency measurements for cell ~~2~~4's CPICH Ec/No using transmission gap pattern sequence with TGPSI=1.
3		→	MEASUREMENT REPORT	UE reports cell ~~2~~4's CPICH Ec/No readings periodically.
4		←	MEASUREMENT CONTROL	Assign inter-frequency measurements for cell ~~2~~4's CPICH RSCP. This measurement task is associated with transmission gap pattern sequence with TGPSI=2, which has not been activated yet.
5		←	PHYSICAL CHANNEL RECONFIGURATION	SS specifies the parameters for transmission gap pattern sequence with TGPSI=2 and activate it simultaneously
6				UE shall delete transmission gap pattern sequence configuration associated with TGPSI=2.
7		→	PHYSICAL CHANNEL RECONFIGURATION FAILURE	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 ~~Number~~	1
Measurement Command	Setup
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- ~~Removed~~ CHOICE inter-frequency ~~info list~~cell removal	~~Not Present~~No inter-frequency cells removed
- New inter-frequency info list	Set to id of cell 4
- Inter-frequency cell id	
- Frequency info	UARFCN of the uplink frequency for cell 4
- UARFCN uplink (Nu)	UARFCN of the downink frequency for cell 4
- UARFCN downlink (Nd)	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 4
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Inter-frequency measurement quantity	Inter-frequency reporting criteria
- CHOICE reporting criteria	0
- Filter Coefficient	CPICH Ec/No
- Measurement quantity for frequency quality estimate	
- Inter-frequency reporting quantity	FALSE
- UTRA Carrier RSSI	TRUE
- Frequency quality estimate	
- 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	TRUE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
~~- CFN-SFN observed time difference~~	~~FALSE~~
- Reporting cell status	
- CHOICE reported~~ing~~ cell	Report cells ~~W~~within active and/or monitored set~~cells~~ on used frequency ~~and~~or within active and/or monitored set~~cells~~ on non-used frequency
- Maximum number of reported~~ing~~ cells ~~type2~~	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	
- TGPSI	1
- TGPS Status Flag	Active
- TGCFN	255

MEASUREMENT REPORT (Step 3 and 8)

Information Element	Value/Remarks
Integrity check info	If integrity protection is activated, this IE shall be present and SS checks that the MAC-I value matches with the calculated X-MAC value. Else, this IE shall be absent.
Measurement identity ~~number~~	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
~~- CFN-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 present
- 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 ~~Number~~	2
Measurement Command	Setup
Measurement Reporting Mode	Not Present
Additional measurements list	Not Present
CHOICE measurement type	Inter-frequency measurement
- Inter-frequency cell info list	
- ~~Removed~~ CHOICE inter-frequency cell removal~~info list~~	~~Not Present~~No inter-frequency cells removed
- New inter-frequency info list	Set to id of cell 4
- Inter-frequency cell id	
- Frequency info	UARFCN of the uplink frequency for cell 4
- UARFCN uplink (Nu)	UARFCN of the downink frequency for cell 4
- UARFCN downlink (Nd)	
- Cell info	0 dB
- Cell individual offset	0 chips
- Reference time difference to cell	
- Primary CPICH Info	Set to same code as used for cell 4
- Primary Scrambling Code	Not Present
- Primary CPICH TX power	FALSE
- Read SFN Indicator	FALSE
- TX Diversity Indicator	
- Inter-frequency measurement quantity	Inter-frequency reporting criteria
- CHOICE reporting criteria	0
- Filter Coefficient	CPICH RSCP
- Measurement quantity for frequency quality estimate	
- Inter-frequency reporting quantity	FALSE
- UTRA Carrier RSSI	TRUE
- Frequency quality estimate	
- 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	~~TRUE~~FALSE
- CPICH RSCP reporting indicator	~~FALSE~~TRUE
- Pathloss reporting indicator	FALSE
~~- CFN-SFN observed time difference~~	~~FALSE~~
- Reporting cell status	
- CHOICE reported~~ing~~ cell	Report cells ~~W~~within active and/or monitored set~~cells~~ on used frequency ~~and~~or within active and/or monitored cells on non-used frequency
- Maximum number of reported~~ing~~ cells ~~type2~~	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	
- TGPSI	2
- TGPS Status Flag	Inactive
- TGCFN	255

PHYSICAL CHANNEL RECONFIGURATION

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
- DPCH compressed mode info	
- TGPSI	2
- TGPS Status Flag	Active
- TGCFN	255
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present

PHYSICAL CHANNEL RECONFIGURATION FAILURE

Information Element	Value/remark
Integrity check info	If integrity protection is activated, this IE shall be present and SS checks that the MAC-I value matches with the calculated X-MAC value. Else, this IE shall be absent.
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-frequency 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 CPICH Ec/No readings for cell ~~2~~4. However, no MEASUREMENT REPORT messages containing the CPICH RSCP readings for cell ~~2~~4 shall be sent by the UE.

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 request from the UTRAN if two conditions are satisfied –

(a) the primary CPICH concerned is included in the active set, and (b) all cells in the active set are defined as primary CPICH 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 to the SS, if a primary CPICH currently measured by the UE enters the reporting range (event 1A). The reporting range was specified in a MEASUREMENT CONTROL message received earlier. To confirm that the UE ignores SS's request to forbid the updating of reporting range, when (a) the primary CPICH concerned is one of the cells currently in active set and (b) all cells in the active sets are marked as primary CPICH forbidden to affect the reporting range.

8.4.1.14.4 Method of test

Initial Condition

System Simulator: 3 cells – The initial configurations of the 3 cells in the SS should follow the values indicated in the column marked "T0" in table 8.4.1.14-1. The table is found in "Test Procedure" sub-clause.

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

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", "T2", "T3" and "T4" are to be applied subsequently. The exact instants on which these values shall be applied are described in the text in this sub-clause.

Table 8.4.1.14-1

Para-meter	Unit	Cell 1					Cell 2					Cell 3				
		T0	T1	T2	T3	T4	T0	T1	T2	T3	T4	T0	T1	T2	T3	T4
UTRA RF Channel Number		Ch. 1					Ch. 1					Ch. 1				
$\hat{I}_{or}/I_{oc}$	dB	9.5	9.5	9.5	9.5	9.5	4.0	4.0	4.0	14.5	14.5	Cell 3 is switched off	8.0	1.5	1.5	8.0
CPICH Ec/Io	dB	-11.4	-13.2	-11.9	-16.5	-17.0	-16.9	-18.7	-17.4	-11.5	-12.0		-14.7	-19.9	-24.5	-18.5
CPICH RSCP	dBm	-70.5	-70.5	-70.5	-70.5	-70.5	-76.0	-76.0	-76.0	-66.5	-66.5		-72.0	-78.5	-78.5	-72.0

The UE is initially in CELL_DCH state of cell 1. 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.

SS configures itself according to the values in columns "T1" shown above. SS then sends a MEASUREMENT CONTROL message to the UE, commanding the start of intra-frequency measurement for all 3 cells. The intra-frequency measurement report criteria is set to event-triggered using event 1A. The reporting range is set to 5 dB in the MEASUREMENT CONTROL message. The UE shall send a MEASUREMENT REPORT on the uplink DCCH, which contains the CPICH RSCP reading for cell 3.

SS executes the active set update procedure again, but requesting that cell 3 be added to the active set this time. The UE shall respond with ACTIVE SET UPDATE message on the uplink DCCH and then includes cell 3 into its current active

set. Following this, SS configures itself according to the values in columns "T2" shown above. The UE should detect that CPICH RSCP of cell 3 has dropped out of the reporting range.

Next, SS configures itself according to the values in columns "T3" shown above. SS then sends a MEASUREMENT CONTROL message to command that all cells in the active set are forbidden to update the reporting range for event 1A.

Finally, SS configures itself according to the values in columns "T4" shown above. The UE shall proceed to update the reporting range as cell 2 has become the strongest cell. Although the CPICH RSCP value of cell 3 has been restored, this value still falls outside the new reporting range. Therefore, the UE shall not transmit a MEASUREMENT REPORT message on the uplink to report the triggering of event 1A.

Expected sequence

Step	Direction		Message	Comment
	UE	SS		
1		←	System Information Block type 11	UE is initially in CELL_DCH state in cell 1. SIB 11 is modified to include both cell 2 and 5 into the monitored cell list.
2		←	ACTIVE SET UPDATE	SS asks UE to add cell 2 into the active set
3		→	ACTIVE SET UPDATE COMPLETE	
4				SS configures itself according to the settings stated in column "T1" of Table 8.4.1.14-1.
5		←	MEASUREMENT CONTROL	SS commands the start of measurement tasks for CPICH RSCP of cell 1, cell 2 and cell 3. All 3 cells are added under IE "Intra-frequency cell info list". The reporting criteria is set to event-triggered using event type 1A, with reporting range = 5 dB.
6		→	MEASUREMENT REPORT	UE shall report that cell 3 has entered the reporting range for event 1A.
7		←	ACTIVE SET UPDATE	SS asks UE to add cell 3 into the active set
8		→	ACTIVE SET UPDATE COMPLETE	
9				SS configures itself according to the settings stated in column "T2" of Table 8.4.1.14-1.
10				SS configures itself according to the settings stated in column "T3" of Table 8.4.1.14-1.
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 "T4" of Table 8.4.1.14-1.
13				UE shall ignore the restrictions imposed by the messages received in step 11. It shall update the reporting range. SS verifies that no MEASUREMENT REPORT messages are received in the uplink direction

Specific Message Contents

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	
- 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
- CHOICE 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	Not Present
- 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 and Step 8)

Information Element	Value/remark
RRC transaction identifier	Check to see if it is set to 0

MEASUREMENT CONTROL (Step 5)

The contents of MEASUREMENT CONTROL message for this test step is identical to the same message found in Annex A with the following exceptions:

Information Element	Value/Remark
RRC transaction identifier	1
Measurement Identity	1
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
- New intra-frequency info list	*3 cells are specified – cell 1, cell 2 and cell 3*
- Intra-frequency cell id	0
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 1
- Primary CPICH TX power	Not Present
- Read SFN Indicator	FALSE
- TX Diversity Indicator	FALSE
- Intra-frequency cell id	1
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 2
- Primary CPICH TX power	Not Present
- Read SFN Indicator	FALSE
- TX Diversity Indicator	FALSE
- Intra-frequency cell id	2
- Cell info	
- Cell individual offset	0 dB
- Reference time difference to cell	0 chips
- Primary CPICH Info	
- Primary Scrambling Code	Set to same code as used for cell 3
- Primary CPICH TX power	Not Present
- Read SFN Indicator	FALSE
- 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	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
- Reporting quantities for monitored set cells	
- SFN-SFN observed time difference reporting indicator	No report
- Cell synchronisation information reporting indicator	FALSE
- Cell identity reporting indicator	FALSE
- CPICH Ec/No reporting indicator	FALSE
- CPICH RSCP reporting indicator	FALSE
- Pathloss reporting indicator	FALSE
- Reporting quantities for detected cells	Not present
- Reporting cell status	Not present
- Measurement validity	Not present
- CHOICE report criteria	Intra-frequency measurement reporting criteria *Only 1 event is specified*
- Parameters required for each events	1a
- Intra-frequency event identity	Not Present
- Triggering conditions 1	Active set cells
- Triggering conditions 2	5.0 dB

- Reporting range	Not Present
- Cells forbidden to affect reporting range	0
- W	0 dB
- Hysteresis	Not Present
- Threshold used frequency	3
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	0 msec
- Time to trigger	1
- Amount of reporting	0
- Reporting interval	Not Present
- Reporting cell status	Not Present
DPCH compressed mode status info	

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 measured 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
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

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	
- 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
- CHOICE 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	Not Present
- 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	Not Present
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 *Only 1 event is specified*
- Parameters required for each events	1a
- Intra-frequency event identity	Not Present
- Triggering conditions 1	Active set cells
- Triggering conditions 2	5.0 dB
- Reporting range	*3 cells – cell 1, cell 2 and cell 3*
- Cells forbidden to affect reporting range	FDD
- CHOICE Mode	
- Primary CPICH info	Set to the same code as in cell 1
- Primary scrambling code	FDD
- CHOICE Mode	
- Primary CPICH info	Set to the same code as in cell 2
- Primary scrambling code	FDD
- CHOICE Mode	
- Primary CPICH info	Set to the same code as in cell 3
- Primary scrambling code	0
- W	0 dB
- Hysteresis	Not Present
- Threshold used frequency	3
- Reporting deactivation threshold	Not Present
- Replacement activation threshold	0 msec
- Time to trigger	1
- Amount of reporting	0
- Reporting interval	Not Present
- Reporting cell status	Not Present
DPCH compressed mode status info	

8.4.1.14.5 Test requirement

After step 2, the UE shall transmit ACTIVE SET UPDATE COMPLETE message on the uplink DCCH to acknowledge the successful addition of cell 2 into the active set. The UE shall be able to communicate with cell 2 in both the uplink and downlink directions after this step.

After step 5, the UE shall send a MEASUREMENT REPORT message on the uplink DCCH. The message shall contain the measurement reading for cell 3's CPICH RSCP.

After step 7, the UE shall transmit ACTIVE SET UPDATE COMPLETE message on the uplink DCCH to acknowledge the successful addition of cell 3 into the active set. The UE shall be able to communicate with cell ~~2~~3 in both the uplink and downlink directions after this step.

After step 12, the UE shall ignore the previous restriction imposed for the updating of reporting range. It shall determine that cell 3's RSCP value is not within the updated reporting range. SS verifies that the UE does not send a MEASUREMENT REPORT message on the uplink DCCH to report cell 3's RSCP value.

Annex A:
Default RRC Message Contents

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 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	(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI	Not Present
CN information info	Not Present
RB with PDCP information list	Not Present
Maximum allowed UL TX power	33dBm
Radio link addition information	(This IE is repeated for addition RL number.)
- Primary CPICH info	
- Primary scrambling code	The value is for additional cell
- 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
- 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
- TFCI combining indicator	TRUE
- SCCPCH Information for FACH	
- Secondary CCPCH info	
- Selection Indicator	Not Present
- Primary CPICH usage for channel estimation	Primary CPICH may be used
- Secondary CPICH info	Not Present
- Secondary scrambling code	1
- SSDT Indicator	FALSE
- 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)
- Pilot symbol existence	FALSE
- TFCI existence	TRUE
- Fixed or Flexible Position	Flexible
- Timing offset	0
- TFCS	(This IE is repeated for TFC number for PCH and FACH.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set.
- Power offset information	Not Present
- FACH/PCH information	
- TFS	(PCH)
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- TFS	(FACH)
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- References to system information blocks	Not Present
~~- Scheduling information~~	
Radio link removal information	(This IE is repeated for removal RL number.)
- Primary CPICH info	
- Primary scrambling code	The value is for removal cell
TX Diversity Mode	None
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
RB with PDCP information list	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	Value will be checked

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 (for c-plane)	~~Not c~~Checked to see if it is set to 'FALSE'
AM_RLC error indication (for u-plane)	~~Not c~~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'
~~Protocol error indicator~~	~~Not checked~~
Measured results on RACH	Not checked
~~Protocol error information~~	~~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
~~DRX~~ RRC State indicator	~~NoDRX~~CELL_FACH
UTRAN DRX cycle length coefficient	Not Present
RLC reset indicator (for C-plane)	FALSE
RLC reset indicator (for U-plane)	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
RB with PDCP information list	Not Present
UL Transport channel information common for all transport channels	Not Present
Deleted TrCH information list	Not Present
- Deleted UL TrCH information	
Added or Reconfigured TrCH information list	Not Present
- Added or Reconfigured UL TrCH information	
CHOICE Mode	Not Present
DL Transport channel information common for all transport channels	Not Present
Deleted TrCH information list	Not Present
- Deleted DL TrCH information	
Added or Reconfigured TrCH information list	Not Present
- Added or Reconfigured DL TrCH information	
Frequency info	Not Present
Maximum allowed UL TX power	33dBm
CHOICE channel requirement	Not Present
~~–~~CHOICE mode	FDD
- Downlink PDSCH information	Not Present
Downlink information common for ~~one~~ 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.
- ~~m~~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 ~~Number~~	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	
- CHOICE Measurement type	
- 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
- Primary CPICH info	
- Primary scrambling code	150
- Primary CPICH Tx power	Not Present
- Read SFN number	FALSE
- 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
~~- CFN-SFN observed time difference~~	~~FALSE~~
- Reporting quantities for monitored cells	
- SFN-SFN observed time difference reporting indicator	No report
- Cell Identity reporting indicator	TRUE
- CPICH Ec/N0 reporting indicator	FALSE
- CPICH RSCP reporting indicator	TRUE
- Pathloss reporting indicator	FALSE
~~- CFN-CFN observed time difference~~	~~FALSE~~
- Reporting quantities for detected set cells	Not Present
- Reporting cell status	
- CHOICE report~~ed~~ed~~ing~~ cell	~~Within~~ Report cell within active set and/or monitored cells on used frequency ~~and within monitored cells on non-used frequency~~
- Maximum number of report~~ed~~ed~~ing~~ cells ~~type 2~~	2
- Measurement validity	Not Present
- ~~Periodical~~ CHOICE report~~ing~~ criteria	Periodic reporting criteria
- Amount of reporting	Infinity
- Reporting interval	64 sec
- Inter-~~system~~ RAT measurement	Not Present
- ~~LCS~~ UP measurement	Not Present
- Traffic Volume measurement	Not Present
- Quality measurement	Not Present

- UE internal measurement	Not Present
CHOICE Measurement type	Intra-frequency measurement
- Intra-frequency cell info list	Not Present
- Intra-frequency measurement quantity	Not Present
- Intra-frequency cell reporting quantity	Not Present
- Report cell status	Not Present
- Measurement validity	Not Present
- CHOICE report criteria	No reporting
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 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 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 number	1
Measured Results	
- Intra-frequency measured results	
- Cell measured results	
- Cell Identity	0000 0000 0000 0000 0000 0000 0010B
- SFN-SFN observed time difference	Not checked
- ~~CFN-SFN observed time difference~~Cell synchronisation information	Not checked
- Primary CPICH info	
- Primary scrambling code	150
- CPICH Ec/N0	Not checked
- CPICH RSCP	The presence should be checked
- Pathloss	Not checked
~~CN domain identity~~	~~Not checked~~
~~NAS message~~	~~Not checked~~
Measured results on RACH	Not checked
Additional measured results	Not checked
Event results	Not checked

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	Low Priority Signalling~~SMS~~
- CN domain identity	CS domain
- CHOICE UE identity	
- IMSI (GSM-MAP)	Set to the same octet~~d~~ 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	Low Priority Signalling~~SMS~~
- CN domain identity	PS domain
- CHOICE UE identity	
- IMSI (GSM-MAP)	Set to the same octet~~d~~ 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 r~~R~~ecord t~~T~~ype 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 (The others of speech in CS)

Information Element	Value/remark
Message Type	
RRC transaction identfier	Arbitrarily selects an integer between 0 and 3
Integrity check info	The presence of this IE is dependent on IXIT statements in TS 34.1 present 23-2. 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 ~~DRX~~ indicator	~~NoDRX~~CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
RB with PDCP information	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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	
- TGPSI	1
- TPGS status Flag	inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35

- TGPL2	35
- RPP	Mode 1
- ITPITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of PHYSICAL CHANNEL RECONFIGURATION message: AM or UM (Speech in CS)

Information Element	Value/remark
Message Type	
RRC transaction identfier	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 ~~DRX~~ indicator	~~NoDRX~~CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
RB with PDCP information	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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	FALSE
- Number of bits for Pilot bits(SF=128,256)	Not Present
- DPCH compressed mode info	
- TGPSI	1
TGPS Status Flag	inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35

- RPP	Mode 1
- ITP	
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of PHYSICAL CHANNEL RECONFIGURATION message: AM or UM (Packet to CELL_DCH from CELL_DCH in PS)

Information Element	Value/remark
Message Type	
RRC transaction identfier	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 ~~DRX~~ indicator	~~NoDRX~~CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
RB with PDCP information	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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	
- TGPSI	1
- TGPS Status Flag	Inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35

- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of PHYSICAL CHANNEL RECONFIGURATION message: AM or UM (Packet to CELL_DCH from CELL_FACH in PS)

Information Element	Value/remark
Message Type	
RRC transaction identfier	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 ~~DRX~~ indicator	~~NoDRX~~CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
RB with PDCP information	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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	
- TGPSI	1
- TGPS Status Flag	Inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35

- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of PHYSICAL CHANNEL RECONFIGURATION message: AM or UM (Packet to CELL_FACH from CELL_DCH in PS)

Information Element	Value/remark
Message Type	
RRC transaction identfier	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 ~~DRX~~ indicator	~~NoDRX~~CELL_FACH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
RB with PDCP information	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH power control info	Not Present
CHOICE channel requirement	~~PRACH info (for RACH)~~Not Present
~~- CHOICE mode~~	~~FDD~~
~~- Available Signature~~	~~'0000 0000 1111 1111'B~~
~~- Available SF~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Available Sub Channel number~~	~~'1111 1111 1111'B~~
CHOICE Mode	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	Not Present
Downlink information for each radio link~~s~~ list	Not Present
~~- 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~~	~~Not Present~~
~~- Secondary CCPCH info~~	
~~- Primary CPICH usage for channel estimation~~	~~Primary CPICH may be used~~
~~- Secondary CPICH info~~	~~Not Present~~
~~- Secondary scrambling code~~	~~1~~
~~- SSDT Indicator~~	~~FALSE~~
~~- 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)~~
~~- Pilot symbol existence~~	~~FALSE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing offset~~	~~0~~
~~- TFCS~~	~~Not Present~~
~~- FACH/PCH information~~	~~Not Present~~
~~- References to system information blocks~~	~~Not Present~~
~~- Scheduling information~~	

Contents of PHYSICAL CHANNEL RECONFIGURATION message: AM or UM (Packet to CELL_FACH from CELL_FACH in PS)

Information Element	Value/remark
Message Type	
RRC transaction identfier	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	0000 0000 0000 0010B
RRC State ~~DRX~~ indicator	~~NoDRX~~CELL_FACH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
RB with PDCP information	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH power control info	Not Present
CHOICE channel requirement	~~PRACH info (for RACH)~~Not Present
~~- CHOICE mode~~	~~FDD~~
~~- Available Signature~~	~~'0000 0000 1111 1111'B~~
~~- Available SF~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Available Sub Channel number~~	~~'1111 1111 1111'B~~
CHOICE Mode	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	Not Present
Downlink information for each radio link~~s~~ list	Not Present
~~- Primary CPICH info~~	
~~- Primary scrambling code~~	~~150~~
~~- PDSCH with SHO DCH info~~	~~Not Present~~
~~- PDSCH code mapping~~	~~Not Present~~
~~- Downlink DPCH info for each RL~~	~~Not Present~~
~~- Secondary CCPCH info~~	
~~- Selection Indicator~~	~~Not Present~~
~~- Primary CPICH usage for channel estimation~~	~~Primary CPICH may be used~~
~~- Secondary CPICH info~~	~~Not Present~~
~~- Secondary scrambling code~~	~~1~~
~~- SSDT Indicator~~	~~FALSE~~
~~- 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)~~
~~- Pilot symbol existence~~	~~FALSE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing offset~~	~~0~~
~~- TFCS~~	~~Not Present~~
~~- FACH/PCH information~~	~~Not Present~~
~~- References to system information blocks~~	~~Not Present~~
~~- Scheduling information~~	

Contents of PHYSICAL CHANNEL RECONFIGURATION COMPLETE message: AM

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
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.
CHOICE mode	FDD
Radio bearer uplink ciphering activation time info	Not checked
RB with PDCP information list	Not checked
~~Other information element~~	~~Not checked~~

Contents of RADIO BEARER SETUP 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	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 ~~A~~activation time for DPCH	(256+CFN-(CFN MOD 8 + 8))MOD 256
- Radio bearer downlink ciphering activation time info	Not Present
~~- Radio bearer identity~~	
~~- RLC sequence number~~	
Activation time	(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI	Not Present
New C-RNTI	Not Present
RRC State ~~DRX~~ indicator	~~NoDRX~~CELL_DCH
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	
- 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~~5~~
- 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~~2~~
- Logical channel identity	7~~1~~
- CHOICE RLC size list	All
- MAC logical channel priority	1
- Downlink RLC logical channel info	
~~- Logical channel max loss~~	~~0~~
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	6~~2~~
- Logical channel identity	7~~1~~
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	51
- Logical channel identity	1
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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	51
- Logical channel identity	2
- CHOICE RLC size list	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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	51
- Logical channel identity	3
- CHOICE RLC size list	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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	51
- Logical channel identity	4
- CHOICE RLC size list	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10
- Logical channel identity	4
RB with PDCP information list	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Added or Reconfigured UL TrCH information	
- Transport channel identity	1~~2~~
- 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 6.10 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
~~- RLC size~~	~~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	If TrCH reconfiguration is executed then this is needed(e.g The rate of SRB for DCCH is changed.).
- Transport channel identity	5~~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 6.10 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
~~- RLC size~~	~~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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present

Added or Reconfigured DL TrCH information	
- Transport channel identity	62
- CHOICE DL parameters	SameAsUL
UL TrCH identity	12
- DCH quality target	
- BLER Quality value	-6.30.00
- Transparent mode signalling info	Not Present
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.).
- Transport channel identity	101
- CHOICE DL parameters	Independent
- UL TrCH identity	51
- 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 6.10 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
~~- RLC size~~	~~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
- DCH quality target	
- BLER Quality value	-6.30.00
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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	
- TGPSI	1
- TGPS Status Flag	inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement

- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of RADIO BEARER SETUP message: AM or UM (Packet to CELL_DCH from CELL_DCH in PS)

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	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 ~~A~~activation time for DPCH	Not Present
- Radio bearer downlink ciphering activation time info	
- Radio bearer identity	10~~5~~
- RLC sequence number	Current RLC SN + 2
Activation time	(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI	Not Present
New C-RNTI	Not Present
RRC State ~~DRX~~ indicator	~~NoDRX~~CELL_DCH
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	
- 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~~5~~
- 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 PU poll	TRUE
- Last retransmission PU 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 PU 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	12
- Logical channel identity	71
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	62
- Logical channel identity	71
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
- Transport channel identity	1
- UL Logical channel identity	51
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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	51
- Logical channel identity	2
- MAC logical channel priority	1
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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	51
- Logical channel identity	3
- CHOICE RLC size list	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	4
- CHOICE RLC size list	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10
- Logical channel identity	4
RB with PDCP information list	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Added or Reconfigured UL TrCH information	
- Transport channel identity	1~~2~~
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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
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.).
- Transport channel identity	5~~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 6.10 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
~~- RLC size~~	~~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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	

- CHOICE CTFC Size	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	6~~2~~
- 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 6.10 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
~~- RLC size~~	~~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
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
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.).
- Transport channel identity	1~~0~~
- TFS	
- CHOICE Transport channel type	Dedicated transport channels
~~- CHOICE DL parameters~~	~~Independent~~
- Dynamic Transport format information	(This IE is repeated for TFI number)
- 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
~~- RLC size~~	~~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
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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)	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of RADIO BEARER SETUP message: AM or UM (Packet to CELL_DCH from CELL_FACH in PS)

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	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 ~~A~~activation time for DPCH	Not Present
- Radio bearer downlink ciphering activation time info	
- Radio bearer identity	20~~5~~
- RLC sequence number	Current RLC SN + 2
Activation time	(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI	Not Present
New C-RNTI	Not Present
RRC State ~~DRX~~ indicator	~~NoDRX~~CELL_DCH
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	
- 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~~5~~
- 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 PU poll	TRUE
- Last retransmission PU 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 PU 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	12
- Logical channel identity	71
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	62
- Logical channel identity	71
RB information to be affected	(UM DCCH for RRC)
- RB identity	1
- RB mapping info	
- RLC logical channel mapping indicator	Not Present
- Information for each multiplexing option	
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	51
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- UL Transport channel identity	101
- 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	51
- Logical channel identity	2
- CHOICE RLC size list	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- UL Transport channel identity	101
- 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	51
- Logical channel identity	3
- CHOICE RLC size list	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	4
- CHOICE RLC size list	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10
- Logical channel identity	4
RB with PDCP information list	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Deleted UL TrCH information	
- Transport channel identity	15
Added or Reconfigured UL TrCH information	
- Transport channel identity	1~~2~~
- 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 6.10 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
~~- RLC size~~	~~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	
- Transport channel identity	5~~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 6.10 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
~~- RLC size~~	~~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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Deleted DL TrCH information	
- Transport channel identity	12
- Transport channel identity	13
- Transport channel identity	14
Added or Reconfigured DL TrCH information	
- Transport channel identity	6~~2~~
- 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 6.10 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
~~- RLC size~~	~~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
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	1~~0~~
- 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 6.10 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
~~- RLC size~~	~~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
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	

- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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)	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	
- 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	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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of RADIO BEARER SETUP message: AM or UM (Packet to CELL_FACH from CELL_DCH in PS)

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	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 ~~A~~activation time for DPCH	Not Present
- Radio bearer downlink ciphering activation time info	
- Radio bearer identity	20~~5~~
- RLC sequence number	Current RLC SN + 2
Activation time	(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI	Not Present
New C-RNTI	Not Present
RRC State ~~DRX~~ indicator	~~NoDRX~~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	
- 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~~5~~
- 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 PU poll	TRUE
- Last retransmission PU 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 PU 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~~6~~
- CHOICE RLC size list	All
- MAC logical channel priority	6
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- Logical channel identity	6~~1~~
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	RACH
- Logical channel identity	1
- CHOICE RLC size list	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- 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	(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	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- 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	(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	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- 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	(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	All
- MAC logical channel priority	5
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	

- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- Logical channel identity	4
RB information to be affected	(TM CCCH uplink for RRC)
- RB identity	0
- 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	5
~~- Logical channel max loss~~	~~0~~
- CHOICE RLC size list	All
- MAC logical channel priority	1
- Downlink RLC logical channel info	Not Present
RB information to be affected	(UM CCCH for RRC)
- RB identity	0
- RB mapping info	
- Information for each multiplexing option	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- Logical channel identity	6
- Downlink RLC logical channel info	Not Present
RB information to be affected	(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
- Logical channel identity	5
- Downlink RLC logical channel info	Not Present
RB information to be affected	(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	PCH
- Logical channel identity	1
- Downlink RLC logical channel info	Not Present
RB with PDCP information list	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	Not Present
Deleted UL TrCH information	
- Transport channel identity	1
- Transport channel identity	5
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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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

DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE DL parameters	Independent
- DL DCH TFCS	Not Present
Deleted DL TrCH information	
- Transport channel identity	6
- Transport channel identity	10
Added or Reconfigured DL TrCH information	
- Transport channel identity	12
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	13~~2~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	14~~3~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD

- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
~~Added or Reconfigured DL TrCH information~~	
~~- Transport channel identity~~	~~4~~
~~- CHOICE DL parameters~~	~~Independent~~
~~- TFS~~	
~~- Dynamic Transport format information~~	~~(This IE is repeated for TFI number)~~
~~- Number of Transport blocks~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- RLC size~~	~~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~~	~~Not Present~~
~~- Transparent mode signalling info~~	~~Not Present~~
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
CHOICE channel requirement	~~PRACH info (for RACH)~~Not Present
~~- CHOICE mode~~	~~FDD~~
~~- Available Signature~~	~~'0000 0000 1111 1111'B~~
~~- Available SF~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Available Sub Channel number~~	~~'1111 1111 1111'B~~
CHOICE Mode	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	Not Present
Downlink information for each radio links	Not Present
~~- 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~~	~~Not Present~~
~~- Secondary CCPCH info~~	
~~- Selection Indicator~~	~~Not Present~~
~~- Primary CPICH usage for channel estimation~~	~~Primary CPICH may be used~~
~~- Secondary CPICH info~~	~~Not Present~~
~~- Secondary scrambling code~~	
~~- channelisation code~~	
~~- Secondary scrambling code~~	~~1~~
~~- SSDT Indicator~~	~~FALSE~~
~~- 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)~~
~~- Pilot symbol existence~~	~~FALSE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing offset~~	~~0~~
~~- TFCS~~	~~Not Present~~
~~- FACH/PCH information~~	~~Not Present~~
~~- References to system information blocks~~	~~Not Present~~
~~- Scheduling information~~	

Contents of RADIO BEARER SETUP message: AM or UM (Packet to CELL_FACH from CELL_FACH in PS)

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	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 ~~A~~activation time for DPCH	Not Present
- Radio bearer downlink ciphering activation time info	
- Radio bearer identity	20~~5~~
- RLC sequence number	Current RLC SN
Activation time	(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI	Not Present
New C-RNTI	Not Present
RRC State ~~DRX~~ indicator	~~NoDRX~~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	(AM DTCH for PS domain)
- 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~~5~~
- 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 PU poll	TRUE
- Last retransmission PU poll	TRUE
- Poll_Windows	99
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	200
- Missing PU 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~~6~~
- CHOICE RLC size list	All
- MAC logical channel priority	6
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- Logical channel identity	6~~1~~
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	RACH
- Logical channel identity	1
- CHOICE RLC size list	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- 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	(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	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- 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	(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	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- 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	(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	All
- MAC logical channel priority	5
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1

- Downlink transport channel type	FACH
- Logical channel identity	4
RB information to be affected	(TM CCCH uplink for RRC)
- RB identity	0
- 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	5
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
RB information to be affected	(UM CCCH for downlink RRC)
- RB identity	0
- 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	6
RB information to be affected	(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	(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
RB with PDCP information list	Not Present
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 6.10 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE DL parameters	Independent
- DL DCH TFCS	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	~~1~~12
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- CHOICE Logical Channel List	ALL
~~- Transport block size~~	~~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	Not Present
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	13~~2~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	14~~3~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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

- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
~~Added or Reconfigured DL TrCH information~~	
~~- Transport channel identity~~	~~4~~
~~- CHOICE DL parameters~~	~~Independent~~
~~- 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 6.10 Parameter Set~~
~~- Number of TBs and TTI List~~	~~(This IE is repeated for TFI number.)~~
~~- Number of Transport blocks~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- CHOICE mode~~	~~FDD~~
~~- 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~~
~~- DCH quality target~~	~~Not Present~~
~~- Transparent mode signalling info~~	~~Not Present~~
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
CHOICE channel requirement	~~PRACH info (for RACH)~~Not Present
~~- CHOICE mode~~	~~FDD~~
~~- Available Signature~~	~~'0000 0000 1111 1111'B~~
~~- Available SF~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Available Sub Channel number~~	~~'1111 1111 1111'B~~
CHOICE Mode	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	Not Present
Downlink information for each radio links	Not Present
~~- 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~~	~~Not Present~~
~~- Secondary CCPCH info~~	
~~- Selection Indicator~~	~~Not Present~~
~~- Primary CPICH usage for channel estimation~~	~~Primary CPICH may be used~~
~~- Secondary CPICH info~~	~~Not Present~~
~~- Secondary scrambling code~~	
~~- channelisation code~~	
~~- Secondary scrambling code~~	~~1~~
~~- SSDT Indicator~~	~~FALSE~~
~~- 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)~~
~~- Pilot symbol existence~~	~~FALSE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing offset~~	~~0~~
~~- TFCS~~	~~Not Present~~
~~- FACH/PCH information~~	~~Not Present~~
~~- References to system information blocks~~	~~Not Present~~
~~- Scheduling information~~	

Contents of RADIO BEARER RECONFIGURATION 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 ~~DRX~~ indicator	~~NoDRX~~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 reconfigure list	Not Present
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~~1~~
- Logical channel identity	1
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	2
- CHOICE RLC size list	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	10
- Downlink transport channel type	DCH
- DL Transport channel identity	1
- 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~~1~~
- Logical channel identity	3
- CHOICE RLC size list	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~

- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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	51
- Logical channel identity	4
- CHOICE RLC size list	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10
- Logical channel identity	4
RB information to be affected	(TM DTCH)
- RB identity	105
- 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	12
- Logical channel identity	71
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	62
- Logical channel identity	71
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE TFCS representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factor	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Deleted UL TrCH information	Not Present
- Transport channel identity	
Added or Reconfigured UL TrCH information	
- Transport channel identity	51
- 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 6.10 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
~~- RLC size~~	~~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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Deleted DL TrCH information	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	10~~1~~
- CHOICE DL parameters	SameAsUL
- UL TrCH Identity	5~~1~~
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
-Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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	
- TGPSI	1
- TGPS Status Flag	Inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
Downlink information for each radio links	
- Primary CPICH info	100
- 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
- Secondary scrambling code	
- channelisation code	
- DL channelisation code	
- Secondary scrambling code	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of RADIO BEARER RECONFIGURATION 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 ~~DRX~~ indicator	~~NoDRX~~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 reconfigure list	Not Present
RB information to be affected	(UM DCCH for RRC)
~~- RB information to reconfigure~~	
- 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~~1~~
- Logical channel identity	1
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	2
- CHOICE RLC size list	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	3
- CHOICE RLC size list	All

- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	4
- CHOICE RLC size list	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10
- Logical channel identity	4
RB information to be affected	(DTCH TM)
- RB identity	10~~5~~
- 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~~2~~
- Logical channel identity	7~~1~~
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	6~~2~~
- Logical channel identity	7~~1~~
RB information to be affected	(DTCH TM)
- RB identity	11~~6~~
- 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~~3~~
- Logical channel identity	8~~1~~
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	7~~3~~
- Logical channel identity	8~~1~~
RB information to be affected	(This IE is needed for 12.2 kbps and 10.2 kbps)
- RB identity	12~~7~~
- 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~~4~~
- Logical channel identity	9~~1~~
- CHOICE RLC size list	All

- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	8~~4~~
- Logical channel identity	9~~1~~
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Deleted UL TrCH information	Not Present
- Transport channel identity	
Added or Reconfigured UL TrCH information	
- Transport channel identity	5~~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 6.10 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
~~- RLC size~~	~~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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Deleted DL TrCH information	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	10~~1~~
- CHOICE DL parameters	SameAsUL
- UL TrCH Identity	5~~1~~
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~

- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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	
- TGPSI	1
- TGPS Status Flag	Inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 - TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- S field	
- Code Word Set	
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of RADIO BEARER RECONFIGURATION message: AM or UM (Packet to CELL_DCH from CELL_DCH in PS)

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 ~~DRX~~ indicator	~~NoDRX~~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 reconfigure list	Not Present
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~~1~~
- Logical channel identity	1
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	2
- CHOICE RLC size list	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	3
- CHOICE RLC size list	All

- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	4
- CHOICE RLC size list	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10
- Logical channel identity	4
RB information to be affected	(AM DTCH)
- RB identity	20~~5~~
- 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~~2~~
- Logical channel identity	7~~1~~
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	6~~2~~
- Logical channel identity	7~~1~~
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Deleted UL TrCH information	
- Transport channel identity	Not Present
Added or Reconfigured UL TrCH information	
- Transport channel identity	5~~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 6.10 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
~~- RLC size~~	~~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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE TFCS representation	Additon
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Deleted DL TrCH information	
- Transport channel identity	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	10~~1~~
- 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 6.10 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
~~- RLC size~~	~~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
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
-Uplink DPCH power control info	
-DPCCH Power offset	-6dB
-PC Preamble	8slot
-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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bits	Not Present(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	Not Present
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of RADIO BEARER RECONFIGURATION message: AM or UM (Packet to CELL_DCH from CELL_FACH in PS)

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 ~~DRX~~ indicator	~~NoDRX~~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 reconfigure list	
- 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~~1~~
- Logical channel identity	1
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Uplink transport channel type	DCH
- UL Transport channel identity	1
- Logical channel identity	2
- CHOICE RLC size list	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10~~1~~
- 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~~1~~
- Logical channel identity	3
- CHOICE RLC size list	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	4
- CHOICE RLC size list	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10
- Logical channel identity	4
- RB information to reconfigure	(AM DTCH)
- RB identity	20~~5~~
- 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~~2~~
- Logical channel identity	7~~1~~
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	6~~2~~
- Logical channel identity	7~~1~~
- RB stop/continue	Not Present
RB information to be affected	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE TFCS representation	
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all

	combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Deleted UL TrCH information	
- Transport channel identity	15~~Not Present~~
Added or Reconfigured UL TrCH information	
- Transport channel identity	5~~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 6.10 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
~~- RLC size~~	~~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	
- Transport channel identity	1~~2~~
- 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 6.10 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
~~- RLC size~~	~~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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Deleted DL TrCH information	
- Transport channel identity	12~~3~~
~~Deleted DL TrCH information~~	
- Transport channel identity	13~~4~~
- Transport channel identity	14
Added or Reconfigured DL TrCH information	
- Transport channel identity	10~~1~~
- 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 6.10 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
~~- RLC size~~	~~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
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	6~~2~~
- 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 6.10 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
~~- RLC size~~	~~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
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
-Uplink DPCH power control info	
-DPCCH Power offset	-6dB
-PC Preamble	8slot
-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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bits	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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)	Reference to TS34.108 clause 6.10 Parameter Set

- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	Inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of RADIO BEARER RECONFIGURATION message: AM or UM (Packet to CELL_FACH from CELL_DCH in PS)

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 ~~DRX~~ indicator	~~NoDRX~~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	
- 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	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- 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	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- 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	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- 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	All
- MAC logical channel priority	5
~~- Logical channel max loss~~	~~0~~
- 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~~5~~
- 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~~6~~
- CHOICE RLC size list	All
- MAC logical channel priority	6
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- Logical channel identity	6~~1~~
- RB stop/continue	Not Present
- RB information to reconfigure	(TM CCCH uplink for RRC)
- RB identity	0
- 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	RACH
- Logical channel identity	5
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(UM CCCH downlink for RRC)
- RB identity	0

- PDCP info	Not Present
- CHOICE RLC info type	
- CHOICE Uplink RLC mode	Not Present
- CHOICE Downlink RLC mode	UM RLC
- 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	6
- RB stop/continue	Not Present
- RB information to reconfigure	(TM BCCH for RRC)
- RB identity	5~~6~~
- 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	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	Not Present
Deleted UL TrCH information	
- Transport channel identity	1~~Not Present~~
- Transport channel identity	5
Added or Reconfigured UL TrCH information	
- Transport channel identity	15~~1~~
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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

DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	Not Present
Deleted DL TrCH information	
- Transport channel identity	~~Not Present~~6
- Transport channel identity	10
Added or Reconfigured DL TrCH information	
- Transport channel identity	12~~1~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	13~~2~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	14~~3~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD

- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
~~Added or Reconfigured DL TrCH information~~	
~~- Transport channel identity~~	~~4~~
~~- CHOICE DL parameters~~	~~Independent~~
~~- TFS~~	
~~- Dynamic Transport format information~~	~~(This IE is repeated for TFI number)~~
~~- 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~~	~~Not Present~~
~~- Transparent mode signalling info~~	~~Not Present~~
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
CHOICE channel requirement	~~PRACH info (for RACH)~~Not Present
~~- CHOICE mode~~	~~FDD~~
~~- Available Signature~~	~~'0000 0000 1111 1111'B~~
~~- Available SF~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Available Sub Channel number~~	~~'1111 1111 1111'B~~
CHOICE Mode	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	Not Present
Downlink information for each radio links	Not Present
~~- 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~~	~~Not Present~~
~~- Secondary CCPCH info~~	
~~- Selection Indicator~~	~~Not Present~~
~~- Primary CPICH usage for channel estimation~~	~~Primary CPICH may be used~~
~~- Secondary CPICH info~~	~~Not Present~~
~~- Secondary scrambling code~~	~~1~~
~~- SSDT Indicator~~	~~FALSE~~
~~- 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)~~
~~- Pilot symbol existence~~	~~FALSE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing offset~~	~~0~~
~~- TFCS~~	~~Not Present~~
~~- FACH/PCH information~~	~~Not Present~~
~~- References to system information blocks~~	~~Not Present~~
~~- Scheduling information~~	

Contents of RADIO BEARER RECONFIGURATION message: AM or UM (Packet to CELL_FACH from CELL_FACH in PS)

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	0000 0000 0000 0010B
RRC State ~~DRX~~ indicator	~~NoDRX~~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	
- 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	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- Logical channel identity	1
- 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	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- 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	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- 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	All
- MAC logical channel priority	5
~~- Logical channel max loss~~	~~0~~
- 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~~5~~
- 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	6~~6~~
- CHOICE RLC size list	All
- MAC logical channel priority	6
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- Logical channel identity	6~~1~~
- RB stop/continue	Not Present
- RB information to reconfigure	(TM CCCH uplink for RRC)
- RB identity	0
- PDCP info	Not Present
- CHOICE RLC info	RLC info
- CHOICE Uplink RLC mode	TM RLC
- Transmission RLC Discard	Not Present
- Segmentation Indication	TRUE
- CHOICE Downlink RLC mode	Not Present
- Segmentation Indication	
- 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	5
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	Not Present
- RB stop/continue	Not Present
- RB information to reconfigure	(UM CCCH for RRC)
- RB identity	0
- PDCP info	Not Present

- CHOICE RLC info type	RLC info
- CHOICE Uplink RLC mode	Not Present
- CHOICE Downlink RLC mode	UM RLC
- 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	6
- RB stop/continue	Not Present
- RB information to reconfigure	(TM BCCH for RRC)
- RB identity	6
- 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	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	Not Present
Deleted UL TrCH information	
- Transport channel identity	Not Present
Added or Reconfigured UL TrCH information	
- Transport channel identity	15~~1~~
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
DRAC static information	Not Present
DL Transport channel information common for all	

transport channel	
- SCCPCH TFCS	(This IE is repeated for TFC number.)
- 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 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	Not Present
Deleted DL TrCH information	
- Transport channel identity	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	12~~1~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	13~~2~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	14~~3~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
~~Added or Reconfigured DL TrCH information~~	
~~- Transport channel identity~~	~~4~~
~~- CHOICE DL parameters~~	~~Independent~~
~~- TFS~~	
~~- Dynamic Transport format information~~	~~(This IE is repeated for TFI number)~~
~~- Number of Transport blocks~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- RLC size~~	~~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~~	~~Not Present~~
~~- Transparent mode signalling info~~	~~Not Present~~
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
CHOICE channel requirement	~~PRACH info (for RACH)~~Not Present
~~- CHOICE mode~~	~~FDD~~
~~- Available Signature~~	~~'0000 0000 1111 1111'B~~
~~- Available SF~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Available Sub Channel number~~	~~'1111 1111 1111'B~~
CHOICE Mode	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	Not Present
Downlink information for each radio links	Not Present
~~- Primary CPICH info~~	
~~- Primary scrambling code~~	~~150~~
~~- PDSCH with SHO DCH info~~	~~Not Present~~
~~- PDSCH code mapping~~	~~Not Present~~
~~- Downlink DPCH info for each RL~~	~~Not Present~~
~~- Secondary CCPCH info~~	
~~- Selection Indicator~~	~~Not Present~~
~~- Primary CPICH usage for channel estimation~~	~~Primary CPICH may be used~~
~~- Secondary CPICH info~~	~~Not Present~~
~~- Secondary scrambling code~~	~~1~~
~~- SSDT Indicator~~	~~FALSE~~
~~- 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)~~
~~- Pilot symbol existence~~	~~FALSE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing offset~~	~~0~~
~~- TFCS~~	~~Not Present~~
~~- FACH/PCH information~~	~~Not Present~~
~~- References to system information blocks~~	~~Not Present~~
~~- Scheduling information~~	

Contents of RADIO BEARER RECONFIGURATION COMPLETE message: AM

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
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.
~~Other information element~~CHOICE mode	~~Not checked~~FDD
Radio bearer uplink ciphering activation time info	Not checked
RB with PDCP information list	Not checked

Contents of RADIO BEARER RELEASE message: AM or UM (The others of speech in CS)

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.
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 ~~DRX~~ indicator	~~NoDRX~~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	~~5~~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~~1~~
- Logical channel identity	1
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10~~1~~
- 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~~1~~
- Logical channel identity	2
- CHOICE RLC size list	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	3
- CHOICE RLC size list	All
- MAC logical channel priority	3

~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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	
- RLC logical channel mapping indicator	Not Present
- Information for each multiplexing option	
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	5~~1~~
- Logical channel identity	4
- CHOICE RLC size list	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10~~1~~
- 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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factor	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Deleted UL TrCH Information	
- Transport channel identity	1~~2~~
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.).
- Transport channel identity	5~~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 6.10 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
~~- RLC size~~	~~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
CPCH set ID	Not Present
DRAC static information	Not Preaent
DL Transport channel information common for all transport channel	

- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Deleted DL TrCH Information	
- Transport channel identity	~~2~~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.).
- Transport channel identity	10~~1~~
- 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 6.10 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
~~- RLC size~~	~~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
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- DL rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or Flexible Position	N/A
- TFCI existence	FALSE
- Number of bits for Pilot bits(SF=128,256)	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	
- TGPSI	1

- TGPS Status Flag	inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

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 ~~DRX~~ indicator	~~NoDRX~~CELL_DCH
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	
- RB identity	~~5~~10
RB information to release	
- RB identity	11~~6~~
RB information to release	
- RB identity	12~~7~~
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~~1~~
- Logical channel identity	1
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	2
- CHOICE RLC size list	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	3
- CHOICE RLC size list	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	4
- CHOICE RLC size list	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10
- Logical channel identity	4
RB with PDCP information list	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factor	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Deleted UL TrCH Information	
- Transport channel identity	1~~2~~
Deleted UL TrCH Information	
- Transport channel identity	2~~3~~
Deleted UL TrCH Information	
- Transport channel identity	3~~4~~
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.).
- Transport channel identity	5~~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 6.10 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
~~- RLC size~~	~~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
CPCH set ID	Not Present
DRAC static information	Not Preaent
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Deleted DL TrCH Information	
- Transport channel identity	6~~2~~
Deleted DL TrCH Information	
- Transport channel identity	7~~3~~
Deleted DL TrCH Information	
- Transport channel identity	8~~4~~
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.).
- Transport channel identity	10
- CHOICE DL parameters	Independent
- UL TrCH Identity	5~~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 6.10 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
~~- Bit mode RLC size info~~	
~~- Transport block size~~	~~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
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- DL rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or Flexible Position	N/A
- TFCI existence	FALSE
- Number of bits for Pilot bits(SF=128,256)	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 - TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of RADIO BEARER RELEASE message: AM or UM (Packet to CELL_DCH from CELL_DCH in PS)

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 ~~DRX~~ indicator	~~NoDRX~~CELL_DCH
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	
- RB identity	20~~5~~
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~~1~~
- Logical channel identity	1
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10
- Logical channel identity	1
RB information to be affected	(AM DCCH for RRC)
- RB identity	2
- RB mapping info	
- RLC logical channel mapping indicator	Not Present
- Information for each multiplexing option	
- Number of uplink RLC logical channels	1
- Uplink transport channel type	DCH
- UL Transport channel identity	5~~1~~
- Logical channel identity	2
- CHOICE RLC size list	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~

- Logical channel identity	3
- CHOICE RLC size list	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	4
- CHOICE RLC size list	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10
- Logical channel identity	4
RB with PDCP information list	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Deleted UL TrCH Information	
- Transport channel identity	1~~2~~
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.).
- Transport channel identity	5~~1~~
- 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 6.10 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
~~- RLC size~~	~~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
CPCH set ID	Not Present
DRAC static information	Not Preaent
DL Transport channel information common for all transport channel	

- SCCPCH TFCS	Not Present
- CHOICE DL parameters	
- DL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Deleted DL TrCH Information	
- Transport channel identity	6~~2~~
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.).
- 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 6.10 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
~~- RLC size~~	~~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
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- DL rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or Flexible Position	N/A
- TFCI existence	FALSE
- Number of bits for Pilot bits(SF=128,256)	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	
- TGPSI	1

- TGPS Status Flag	inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of RADIO BEARER RELEASE message: AM or UM (Packet to CELL_DCH from CELL_FACH in PS)

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 ~~DRX~~ indicator	~~NoDRX~~CELL_DCH
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	
- RB identity	20~~5~~
RB information to release	
- RB identity	6
RB information to release	
- RB identity	7
RB information to release	
- RB identity	0
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~~1~~
- Logical channel identity	1
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10~~1~~
- 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~~1~~
- Logical channel identity	2
- CHOICE RLC size list	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL 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~~1~~
- Logical channel identity	3
- CHOICE RLC size list	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	100~~1~~
- 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~~1~~
- Logical channel identity	4
- CHOICE RLC size list	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	DCH
- DL Transport channel identity	10
- Logical channel identity	4
RB with PDCP information list	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Siz	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Deleted UL TrCH Information	15~~Not Present~~
Added or Reconfigured UL TrCH information	
- Transport channel identity	5~~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 6.10 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
~~- RLC size~~	~~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
CPCH set ID	Not Present
DRAC static information	Not Preaent
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Deleted DL TrCH Information	
- Transport channel identity	12
Deleted DL TrCH Information	
- Transport channel identity	13
Deleted DL TrCH Information	
- Transport channel identity	14
Added or Reconfigured DL TrCH information	
- Transport channel identity	101
- 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 6.10 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
~~- RLC size~~	~~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
- DCH quality target	
- BLER Quality value	-6.30~~.00~~
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- DL rate matching restriction information	Not Present
- Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
- Fixed or Flexible Position	N/A
- TFCI existence	FALSE
- Number of bits for Pilot bits(SF=128,256)	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of RADIO BEARER RELEASE message: AM or UM (Packet to CELL_FACH from CELL_DCH in PS)

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 ~~DRX~~ indicator	~~NoDRX~~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	
- RB identity	20~~5~~
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	RACH
- Logical channel identity	1
- CHOICE RLC size list	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- 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	(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	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- 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	(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	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- 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	(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	All
- MAC logical channel priority	5
~~- Logical channel max loss~~	~~0~~
- 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	(TM CCCH uplink for RRC)
- RB identity	0
- 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	5
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	Not Present
RB information to be affected	(UM CCCH downlink for RRC)
- RB identity	0
- 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	6
RB information to be affected	(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	(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
RB with PDCP information list	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	Not Present
Deleted UL TrCH Information	
- Transport channel identity	1~~2~~
Added or Reconfigured UL TrCH information	
- Transport channel identity	15~~1~~

- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
CPCH set ID	Not Present
DRAC static information	Not Preaent
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	Not Present
Deleted DL TrCH Information	6~~Not Present~~
Added or Reconfigured DL TrCH information	
- Transport channel identity	13~~1~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	13~~2~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
~~Added or Reconfigured DL TrCH information~~	
~~- Transport channel identity~~	14~~3~~
~~- CHOICE DL parameters~~	~~Independent~~
~~- TFS~~	
~~- Dynamic Transport format information~~	~~(This IE is repeated for TFI number)~~
~~- Number of Transport blocks~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- RLC size~~	~~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~~	~~Not Present~~
~~- Transparent mode signalling info~~	~~Not Present~~
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
CHOICE channel requirement	~~PRACH info (for RACH)~~Not Present
~~- CHOICE mode~~	~~FDD~~
~~- Available Signature~~	~~'0000 0000 1111 1111'B~~
~~- Available SF~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Available Sub Channel number~~	~~'1111 1111 1111'B~~
CHOICE Mode	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	Not Present
Downlink information for each radio links	Not Present
~~- 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~~	~~Not Present~~
~~- Secondary CCPCH info~~	
~~- Selection Indicator~~	~~Not Present~~
~~- Primary CPICH usage for channel estimation~~	~~Primary CPICH may be used~~
~~- Secondary CPICH info~~	~~Not Present~~
~~- Secondary scrambling code~~	
~~- channelisation code~~	
~~- Secondary scrambling code~~	~~1~~
~~- SSDT Indicator~~	~~FALSE~~
~~- 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)~~
~~- Pilot symbol existence~~	~~FALSE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing offset~~	~~0~~
~~- TFCS~~	~~Not Present~~
~~- FACH/PCH information~~	~~Not Present~~
~~- References to system information blocks~~	~~Not Present~~
~~- Scheduling information~~	

Contents of RADIO BEARER RELEASE message: AM or UM (Packet to CELL_FACH from CELL_FACH in PS)

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 ~~DRX~~ indicator	~~NoDRX~~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 be reconfigured list	Not Present
RB information to release	
- RB identity	20~~5~~
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	RACH
- Logical channel identity	1
- CHOICE RLC size list	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- 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	(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
- UL Transport channel identity	1
- Logical channel identity	2
- CHOICE RLC size list	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- 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	(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	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- 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	(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	All
- MAC logical channel priority	5
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- Logical channel identity	4
RB information to be affected	(TM CCCH uplink for RRC)
- RB identity	0
- 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	5
- CHOICE RLC size list	All
- MAC logical channel priority	1
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	Not Present
RB information to be affected	(UM CCCH downlink for RRC)
- RB identity	0
- 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	6
RB information to be affected	(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	(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
RB with PDCP information list	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	Not Present
Deleted UL TrCH Information	15~~Not Present~~
Added or Reconfigured UL TrCH information	
- Transport channel identity	15~~1~~
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
CPCH set ID	Not Present
DRAC static information	Not Preaent
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	Not Present
Deleted DL TrCH Information	
- Transport channel identity	12~~4~~
Added or Reconfigured DL TrCH information	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
CHOICE channel requirement	~~PRACH info (for RACH)~~Not Present
~~- CHOICE mode~~	~~FDD~~
~~- Available Signature~~	~~'0000 0000 1111 1111'B~~
~~- Available SF~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Available Sub Channel number~~	~~'1111 1111 1111'B~~
CHOICE Mode	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	Not Present
Downlink information for each radio links	Not Present
~~- Primary CPICH info~~	
~~- Primary scrambling code~~	Primary CPICH may be used~~100~~
~~- PDSCH with SHO DCH info~~	Not Present~~Not Present~~
~~- PDSCH code mapping~~	~~Not Present~~
~~- Downlink DPCH info for each RL~~	~~Not Present~~
~~- Secondary CCPCH info~~	
~~- Selection Indicator~~	~~Not Present~~
~~- Primary CPICH usage for channel estimation~~	~~Primary CPICH may be used~~
~~- Secondary CPICH info~~	~~Not Present~~
~~- Secondary scrambling code~~	
~~- channelisation code~~	
~~- Secondary scrambling code~~	~~1~~
~~- SSDT Indicator~~	~~FALSE~~
~~- 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)~~
~~- Pilot symbol existence~~	~~FALSE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing offset~~	~~0~~
~~- TFCS~~	~~Not Present~~

~~- FACH/PCH information~~ ~~- References to system information blocks~~ ~~- Scheduling information~~	~~Not Present~~ ~~Not Present~~

Contents of RRC CONNECTION RE-ESTABLISHMENT message: UM (The others of speech in CS)

Information Element	Value/remark
Message Type	
U-RNTI	Not Present
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
DRX indicator	NoDRX
UTRAN DRX cycle length coefficient	Not Present
CN information info	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	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- 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 PU poll	TRUE
- Last retransmission PU 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 PU indicator	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	2
- MAC logical channel priority	2
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- 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 PU poll	TRUE
- Last retransmission PU 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 PU indicator	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	3
- MAC logical channel priority	3
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- 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 PU poll	TRUE
- Last retransmission PU 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 PU indicator	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	4
- MAC logical channel priority	4
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	4
RAB information for setup	
- RAB info	
- RAB identity	0000 0001B
- CN domain identity	CS domain
- Re-establishment timer	
- T314	20 seconds
- RB information to setup	
- RB identity	5
- PDCP info	Not Present
- 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
- Transport channel identity	2
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	2
- Logical channel identity	1
RB information to release	Not Present
RB information to reconfigure	Not Present
RB information to be affected	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all

	combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Deleted UL TrCH information	Not Present
Added or Reconfigured UL TrCH information	
- Transport channel identity	1
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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
Added or Reconfigured UL TrCH information	
- Transport channel identity	2
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Deleted DL TrCH information	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	1
- CHOICE DL parameters	Independent
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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	0.00
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	2
- CHOICE DL parameters	Independent

- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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	0.00
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF-1(SF is reference to TS34.108 clause 6.10 Parameter Set)
- TFCI existence	TRUE
- Number of FBI bit	Not Present(0)
- Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set
Downlink PDSCH information	Not Present
CPCH SET info	Not Present

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
~~- SRNC identity~~	
~~- S-RNTI~~	
New C-RNTI	See the test content
~~DRX indicator~~	~~NoDRX~~
~~UTRAN DRX cycle length coefficient~~	~~Not Present~~
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
RB with PDCP information list	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.
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.
Uplink integrity protection activation info	Not checked
Radio bearer uplink ciphering activation time info	Not checked
RB with PDCP information list	Not checked

Contents of RRC CONNECTION RE-ESTABLISHMENT message: UM (Speech in CS)

Information Element	Value/remark
Message Type	
U-RNTI	Not Present
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 from this message
- Ciphering mode command	start
- Ciphering algorithm	Use one of the supported ciphering algorithms
- Activation time for DPCH	(256+CFN-(CFN MOD 8 + 8))MOD 256
- Radio bearer downlink ciphering activation time info	
- Radio bearer identity	0
- RLC sequence number	Current RLC SN + 2
- Radio bearer identity	1
- RLC sequence number	Current RLC SN+2
- Radio bearer identity	2
- RLC sequence number	Current RLC SN+2
- Radio bearer identity	3
- RLC sequence number	Current RLC SN+2
- Radio bearer identity	4
- RLC sequence number	Current RLC SN+2
Activation time	(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI	Not Present
New C-RNTI	Not Present
DRX indicator	noDRX
UTRAN DRX cycle length coefficient	Not Present
RLC reset indicator (for C-plane)	FALSE
RLC reset indicator (for U-plane)	FALSE
CN information info	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	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- 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 PU poll	TRUE
- Last retransmission PU 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 PU indicator	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	2
- MAC logical channel priority	2
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- 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 PU poll	TRUE
- Last retransmission PU poll	TRUE
- Poll_Windows	99
- CHOICE Downlink RLC mode	AM RLC
- In-sequence delivery	TRUE
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	200
- Missing PU indicator	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	3
- MAC logical channel priority	3
- Logical channel max loss	0

- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- 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 PU poll	TRUE
- Last retransmission PU 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 PU indicator	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	4
- MAC logical channel priority	4
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	4
RAB information for setup	
- RAB info	
- RAB identity	0000 0001B
- CN domain identity	CS domain
- Re-establishment timer	
- T314	20 seconds
- RB information to setup	
- RB identity	5
- PDCP info	Not Present
- 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
- Transport channel identity	2
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH

- Transport channel identity	2
- Logical channel identity	1
- RB information to setup	
- RB identity	6
- PDCP info	Not Present
- RLC info	Not Present
- 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
- Transport channel identity	3
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	3
- Logical channel identity	1
- RB information to setup	(This IE is needed for 12.2 kbps and 10.2 kbps)
- RB identity	7
- PDCP info	Not Present
- 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
- Transport channel identity	4
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	4
- Logical channel identity	1
RB information to release	Not Present
RB information to reconfigure	Not Present
RB information to be affected	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present

- Power offset Pp-m	0dB
Deleted UL TrCH information	Not Present
Added or Reconfigured UL TrCH information	
- Transport channel identity	1
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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
Added or Reconfigured UL TrCH information	
- Transport channel identity	2
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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
Added or Reconfigured UL TrCH information	
- Transport channel identity	3
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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
Added or Reconfigured UL TrCH information	(This IE is needed for 12.2 kbps and 10.2 kbps)
- Transport channel identity	4
- TFS	(This IE is repeated for TFI number)
- Dynamic Transport format information	
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Deleted DL TrCH information	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	1

- CHOICE DL parameters	SameAsUL
- UL TrCH Identity	1
- DCH quality target	
- BLER Quality value	0.00
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	2
- CHOICE DL parameters	SameAsUL
- UL TrCH Identity	2
- DCH quality target	
- BLER Quality value	0.00
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	3
- CHOICE DL parameters	SameAsUL
- UL TrCH Identity	3
- DCH quality target	
- BLER Quality value	0.00
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	(This IE is needed for 12.2 kbps and 10.2 kbps)
- Transport channel identity	4
- CHOICE DL parameters	SameAsUL
- UL TrCH Identity	4
- DCH quality target	
- BLER Quality value	0.00
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(0)
- Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set
Downlink PDSCH information	Not Present
CPCH SET info	Not Present
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
- Scheduling information	

Contents of RRC CONNECTION RE-ESTABLISHMENT message: UM (Packet to CELL_DCH from CELL_DCH in PS)

Information Element	Value/remark
Message Type	
U-RNTI	Not Present
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 from this message.
- Ciphering mode command	start
- Ciphering algorithm	Use one of the supported ciphering algorithms
- Activation time for DPCH	Not Present
- Radio bearer downlink ciphering activation time info	
- Radio bearer identity	0
- RLC sequence number	Current RLC SN + 2
- Radio bearer identity	1
- RLC sequence number	Current RLC SN+2
- Radio bearer identity	2
- RLC sequence number	Current RLC SN+2
- Radio bearer identity	3
- RLC sequence number	Current RLC SN+2
- Radio bearer identity	4
- RLC sequence number	Current RLC SN+2
Activation time	(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI	Not Present
New C-RNTI	Not Present
DRX indicator	noDRX
UTRAN DRX cycle length coefficient	Not Present
RLC reset indicator (for C-plane)	FALSE
RLC reset indicator (for U-plane)	FALSE
CN information info	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	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- 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 PU poll	TRUE
- Last retransmission PU 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 PU indicator	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	2
- MAC logical channel priority	2
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- 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 PU poll	TRUE
- Last retransmission PU 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 PU indicator	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	3

- MAC logical channel priority	3
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- 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 PU poll	TRUE
- Last retransmission PU 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 PU indicator	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	4
- MAC logical channel priority	4
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	4
RAB information for setup	
- RAB info	
- RAB identity	0000 0001B
- CN domain identity	PS domain
- Re-establishment timer	
- T314	20 seconds
- RB information to setup	
- RB identity	5
- PDCP info	Not Present
- 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 PU poll	TRUE
- Last retransmission PU 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 PU indicator	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	2
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	2
- Logical channel identity	1
RB information to release	Not Present
RB information to reconfigure	Not Present
RB information to be affected	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Deleted UL TrCH information	Not Present
Added or Reconfigured UL TrCH information	
- Transport channel identity	1
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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
Added or Reconfigured UL TrCH information	
- Transport channel identity	2
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Deleted DL TrCH information	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	1
- CHOICE DL parameters	Independent
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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	0.00
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	2
- CHOICE DL parameters	Independent
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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	0.00
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(0)

- Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set
Downlink PDSCH information	Not Present
CPCH SET info	Not Present
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
- Scheduling information	

Contents of RRC CONNECTION RE-ESTABLISHMENT message: UM (Packet to CELL_DCH from CELL_FACH in PS)

Information Element	Value/remark
Message Type	
U-RNTI	Not Present
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
- Activation time for DPCH	Not Present
- Radio bearer downlink ciphering activation time info	
- Radio bearer identity	0
- RLC sequence number	Current RLC SN + 2
- Radio bearer identity	1
- RLC sequence number	Current RLC SN+2
- Radio bearer identity	2
- RLC sequence number	Current RLC SN+2
- Radio bearer identity	3
- RLC sequence number	Current RLC SN+2
- Radio bearer identity	4
- RLC sequence number	Current RLC SN+2
Activation time	(256+CFN-(CFN MOD 8 + 8))MOD 256
New U-RNTI	Not Present
New C-RNTI	Not Present
DRX indicator	noDRX
UTRAN DRX cycle length coefficient	Not Present
RLC reset indicator (for C-plane)	FALSE
RLC reset indicator (for U-plane)	FALSE
CN information info	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	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- 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 PU poll	TRUE
- Last retransmission PU 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 PU indicator	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	2
- MAC logical channel priority	2
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- 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 PU poll	TRUE
- Last retransmission PU 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 PU indicator	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	3

- MAC logical channel priority	3
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- 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 PU poll	TRUE
- Last retransmission PU 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 PU indicator	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	4
- MAC logical channel priority	4
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	1
- Logical channel identity	4
RAB information for setup	
- RAB info	
- RAB identity	0000 0001B
- CN domain identity	PS domain
- Re-establishment timer	
- T314	20 seconds
- RB information to setup	
- RB identity	5
- PDCP info	Not Present
- 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 PU poll	TRUE
- Last retransmission PU poll	TRUE
- Poll_Windows	99
- CHOICE Downlink RLC mode	AMR RLC
- In-sequence delivery	TRUE
- Receiving window size	8
- Downlink RLC status info	
- Timer_status_prohibit	200
- Timer_EPC	200
- Missing PU indicator	TRUE
- RB mapping info	
- Information for each multiplexing option	
- Number of RLC logical channels	1
- Uplink transport channel type	DCH
- Transport channel identity	2
- Logical channel identity	1
- MAC logical channel priority	1
- Logical channel max loss	0
- Number of RLC logical channels	1
- Downlink transport channel type	DCH
- Transport channel identity	2
- Logical channel identity	1
RB information to release	Not Present
RB information to reconfigure	Not Present
RB information to be affected	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factor
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Deleted UL TrCH information	Not Present
Added or Reconfigured UL TrCH information	
- Transport channel identity	1
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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
Added or Reconfigured UL TrCH information	
- Transport channel identity	2
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Deleted DL TrCH information	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	1
- CHOICE DL parameters	Independent
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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	0.00
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	2
- CHOICE DL parameters	Independent
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
- RLC size	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	0.00
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
- Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(0)

- Puncturing Limit	Reference to TS34.108 clause 6.10 Parameter Set
Downlink PDSCH information	Not Present
CPCH SET info	Not Present
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
- Scheduling information	

Contents of RRC CONNECTION RE-ESTABLISHMENT COMPLETE 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.
Uplink integrity protection activation info	Not checked
START	Not checked
Radio bearer uplink ciphering activation time info	If ciphering is not activated in RRC CONNECTION RE-ESTABLISHMENT message, this IE must be absent. Else, SS checks this IE for the presence of activation times of all ciphered uplink RLC-UM and RLC-AM RBs
RB with PDCP information list	Not checked
- RB with PDCP information	

~~Contents of RRC CONNECTION RE-ESTABLISHMENT REQUEST message: TM~~

~~Information Element~~	~~Value/remark~~
~~Message Type~~	
~~U-RNTI~~	~~Value is checked to see if it is equal to the previously assigned U-RNTI~~
~~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 present~~
~~AM_RLC error indication (for C-plane)~~	~~Not checked~~
~~AM_RLC error indication (for U-plane)~~	~~Not checked~~
~~Protocol error indicator~~	~~Value is checked to see if it is set to FALSE~~
~~Measured results on RACH~~	~~Not checked~~
~~Protocol error information~~	~~Should be absent as "Protocol error indicator" = FALSE~~

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	
~~RRC transaction identifier~~	~~Arbitrarily select a integer between 0 and 3~~
Initial UE identity	Reference to TS34.108 clause 6.10 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 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
~~- 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	All
- MAC logical channel priority	2
~~- Logical channel max loss~~	~~0~~
- 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
~~- 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 PU poll	TRUE
- Last retransmission PU 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 PU 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	All
- MAC logical channel priority	3
~~- Logical channel max loss~~	~~0~~
- 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
~~- 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 PU poll	TRUE
- Last retransmission PU 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 PU 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	All
- MAC logical channel priority	4
~~- Logical channel max loss~~	~~0~~
- 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
~~- 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 PU poll	TRUE
- Last retransmission PU 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 PU 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	All
- MAC logical channel priority	5
~~- Logical channel max loss~~	~~0~~
- Downlink RLC logical channel info	
- Number of downlink RLC logical channels	1
- Downlink transport channel type	FACH
- Logical channel identity	4
~~Signalling RB information to setup~~	~~(TM CCCH for RRC)~~
~~- RB identity~~	~~0~~
~~- CHOICE RLC info type~~	
~~- RLC info~~	
~~- CHOICE Uplink RLC mode~~	~~TM RLC~~
~~- Transmission RLC Discard~~	~~Not Present~~
~~- Segmentation Indication~~	~~TRUE~~
~~- CHOICE Downlink RLC mode~~	~~Not Present~~
~~- Segmentation indication~~	~~TRUE~~
~~- RB mapping info~~	
~~- Information for each multiplexing option~~	
~~- Number of RLC logical channels~~	~~1~~
~~- Uplink transport channel type~~	~~RACH~~
~~- Logical channel identity~~	~~5~~
~~- MAC logical channel priority~~	~~1~~
~~- Logical channel max loss~~	~~0~~
~~Signalling RB information to setup~~	~~(UM CCCH for RRC)~~
~~- RB identity~~	~~0~~
~~- 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~~
~~- RB mapping info~~	
~~- Information for each multiplexing option~~	
~~- Number of RLC logical channels~~	~~1~~
~~- Downlink transport channel type~~	~~FACH~~
~~- Logical channel identity~~	~~6~~
~~Signalling RB information to setup~~	~~(TM BCCH for RRC)~~
~~- RB identity~~	~~6~~
~~- 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~~	
~~- Number of RLC logical channels~~	~~1~~
~~- Downlink transport channel type~~	~~FACH~~
~~- Logical channel identity~~	~~5~~

~~Signalling RB information to setup~~	~~(TM PCCH for RRC)~~
~~- RB identity~~	~~7~~
~~- 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~~	
~~- Number of RLC logical channels~~	~~1~~
~~- Downlink transport channel type~~	~~FACH~~
~~- Logical channel identity~~	~~1~~
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	Not Present
Added or Reconfigured UL TrCH information	
- Transport channel identity	15~~1~~
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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	
- SCCPCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	14~~1~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
CHOICE channel requirement	~~PRACH info (for RACH)~~Not Present
~~- CHOICE mode~~	~~FDD~~
~~- Available Signature~~	~~'0000 0000 1111 1111'B~~
~~- Available SF~~	~~Reference to TS34.108 clause 6.10 Parameter Set 0~~
~~- Scrambling code number~~	
~~- Puncturing Limit~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Available Sub Channel number~~	~~'1111 1111 1111'B~~
Downlink information common for all radio links	Not Present
Downlink information for each radio links	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 (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 ~~DRX~~ indicator	~~NoDRX~~CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
RB with PDCP info	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factors
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Added or Reconfigured UL TrCH information	
- Transport channel identity	5~~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 6.10 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
~~- RLC size~~	~~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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	

- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	10
- CHOICE DL parameters	SameAsUL
- UL TrCH Identity	5~~1~~
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
-Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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	
- TGPSI	1
- TGPS Status Flag	inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0

- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
~~- TFS~~	
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of TRANSPORT CHANNEL RECONFIGURATION 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 ~~DRX~~ indicator	~~NoDRX~~CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
RB with PDCP information	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factors
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Added or Reconfigured UL TrCH information	
- Transport channel identity	5~~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 6.10 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
~~- RLC size~~	~~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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	

- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	10
- CHOICE DL parameters	SameAsUL
- UL TrCH Identity	5~~1~~
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
-Uplink DPCH power control info	
- DPCCH power offset	-6dB
- PC Preamble	8slot
- 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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bit	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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	
- TGPSI	1
- TGPS Status Flag	inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0

- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of TRANSPORT CHANNEL RECONFIGURATION message: AM or UM (Packet to CELL_DCH from CELL_DCH in PS)

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 ~~DRX~~ indicator	~~NoDRX~~CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
RB with PDCP information	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factors
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Added or Reconfigured UL TrCH information	
- Transport channel identity	5~~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 6.10 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
~~- RLC size~~	~~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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	(This IE is repeated for TFC number.)

- Normal	
- TFCI Field 1 information	
- CHOICE TFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	10
- CHOICE DL parameters	Independent
- CHOICE Transport channel type	Dedicated transport channels
- TFS	
- Dynamic Transport format information	(This IE is repeated for TFI number)
- 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
~~- RLC size~~	~~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
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
-Uplink DPCH power control info	
-DPCCH Power offset	-6dB
-PC Preamble	8slot
-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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bits	Not Present(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	Not Present
- Downlink DPCH info common for all RL	
~~- CHOICE mode~~	
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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	
- TGPSI	1
- TGPS Status Flag	inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement

- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- S field	
- Code Word Set	
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of TRANSPORT CHANNEL RECONFIGURATION message: AM or UM (Packet to CELL_DCH from CELL_FACH in PS)

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 ~~DRX~~ indicator	~~NoDRX~~CELL_DCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
RB with PDCP information	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE Gain Factors	Signalled Gain Factors
- Gain factor •c	0
- Gain factor •d	0
- Reference TFC ID	Not Present
- Power offset Pp-m	0dB
Added or Reconfigured UL TrCH information	
- 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 6.10 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
~~- RLC size~~	~~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	
- Transport channel identity	5~~2~~
- 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 6.10 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
~~- RLC size~~	~~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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	Not Present
- CHOICE DL parameters	
- DL DCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	6~~1~~
- 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 6.10 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
~~- RLC size~~	~~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
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	10~~2~~
- 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 6.10 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
~~- RLC size~~	~~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
- DCH quality target	
- BLER Quality value	-6.3~~0.00~~
- Transparent mode signalling info	Not Present

Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
Uplink DPCH info	
-Uplink DPCH power control info	
-DPCCH Power offset	-6dB
-PC Preamble	8slot
-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	SF is reference to TS34.108 clause 6.10 Parameter Set
- TFCI existence	TRUE
- Number of FBI bits	Not Present(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	
~~- CHOICE mode~~	~~FDD~~
- Timing indicator	Maintain
- CFN-targetSFN frame offset	Not Present
- Downlink DPCH power control information	
- DPC mode	0 (single)
- 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)	Reference to TS34.108 clause 6.10 Parameter Set
- DPCH compressed mode info	
- TGPSI	1
- TGPS Status Flag	inactive
- TGCFN	(Current CFN + (256 – TTI/10msec)) mod 256
- Transmission gap pattern sequence configuration parameters	
- TGMP	FDD Measurement
- TGPRC	62
~~- TGCFN~~	~~(Current CFN + (256 – TTI/10msec)) mod 256~~
- TGSN	8
- TGL1	10
- TGL2	5
- TGD	15
- TGPL1	35
- TGPL2	35
- RPP	Mode 1
- ITP	Mode 1
- UL/DL Mode	DL
- Downlink compressed mode method	SF/2
- Uplink compressed mode method	Not Present
- Downlink frame type	A
- DeltaSIR1	2.0
- DeltaSIRafter1	1.0
- DeltaSIR2	Not Present
- DeltaSIRafter2	Not Present
- TX Diversity mode	None
- SSDT information	Not Present
- Default DPCH Offset Value	0
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	1
- 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
- Secondary CCPCH info	Not Present
- TFCS	Not Present
- FACH/PCH information	Not Present
- References to system information blocks	Not Present
~~- Scheduling information~~	

Contents of TRANSPORT CHANNEL RECONFIGURATION message: AM or UM (Packet to CELL_FACH from CELL_DCH in PS)

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 ~~DRX~~ indicator	~~NoDRX~~CELL_FACH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
RB with PDCP information	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	Not Present
Added or Reconfigured UL TrCH information	
- Transport channel identity	5~~1~~
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	Not Present
- CHOICE DL parameters	Independent
- DL DCH TFCS	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	10~~1~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
~~- BLER Quality value~~	
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	2
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
~~- BLER Quality value~~	
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	3
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
~~- BLER Quality value~~	
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	4
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD

- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
CHOICE channel requirement	~~PRACH info (for RACH)~~Not Present
~~- CHOICE mode~~	~~FDD~~
~~- Available Signature~~	~~'0000 0000 1111 1111'B~~
~~- Available SF~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Available Sub Channel number~~	~~'1111 1111 1111'B~~
CHOICE Mode	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	Not Present
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~~	~~Not Present~~
~~- Secondary CCPCH info~~	
~~- Selection Indicator~~	~~Not Present~~
~~- Primary CPICH usage for channel estimation~~	~~Primary CPICH may be used~~
~~- Secondary CPICH info~~	~~Not Present~~
~~- Secondary scrambling code~~	~~1~~
~~- SSDT Indicator~~	~~FALSE~~
~~- 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)~~
~~- Pilot symbol existence~~	~~FALSE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing offset~~	~~0~~
~~- TFCS~~	~~Not Present~~
~~- FACH/PCH information~~	~~Not Present~~
~~- References to system information blocks~~	~~Not Present~~
~~- Scheduling information~~	

Contents of TRANSPORT CHANNEL RECONFIGURATION message: AM or UM (Packet to CELL_FACH from CELL_FACH in PS)

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	0000 0000 0000 0010B
RRC State ~~DRX~~ indicator	~~NoDRX~~CELL_FACH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	Not Present
RB with PDCP information	Not Present
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 6.10 Parameter Set.)
- PRACH TFCS	Not Present
- CHOICE mode	FDD
- UL DCH TFCS	Not Present
Added or Reconfigured UL TrCH information	
- Transport channel identity	15~~1~~
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
DRAC static information	Not Present
DL Transport channel information common for all transport channel	
- SCCPCH TFCS	(This IE is repeated for TFC number.)
- Normal	
- TFCI Field 1 information	
- CHOICE CTFC representation	Addition
- TFCS addition information	
- CHOICE CTFC Size	Number of bits used must be enough to cover all combinations of CTFC from clause 6.10.
- CTFC information	Refer to TS34.108 clause 6.10 Parameter Set
- Power offset information	
- CHOICE DL parameters	Independent
- DL DCH TFCS	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	~~1~~12
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	13~~2~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
Added or Reconfigured DL TrCH information	
- Transport channel identity	14~~3~~
- CHOICE DL parameters	Independent
- 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 6.10 Parameter Set
- Number of TBs and TTI List	(This IE is repeated for TFI number.)
- Number of Transport blocks	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
- CHOICE mode	FDD
- 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
- DCH quality target	Not Present
- Transparent mode signalling info	Not Present
~~Added or Reconfigured DL TrCH information~~	
~~- Transport channel identity~~	~~4~~
~~- CHOICE DL parameters~~	~~Independent~~
~~- TFS~~	
~~- CHOICE Transport channel type~~	Common transport channels
~~- Dynamic Transport format information~~	(This IE is repeated for TFI number)
~~- Number of Transport blocks~~	Reference to TS34.108 clause 6.10 Parameter Set
~~- RLC size~~	~~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~~	~~Not Present~~
~~- Transparent mode signalling info~~	~~Not Present~~
Frequency info	
- UARFCN uplink(Nu)	Reference to TS34.108 clause 6.10 Parameter Set
- UARFCN downlink(Nd)	Reference to TS34.108 clause 6.10 Parameter Set
Maximum allowed UL TX power	33dBm
CHOICE channel requirement	~~PRACH info (for RACH)~~Not Present
~~- CHOICE mode~~	~~FDD~~
~~- Available Signature~~	~~'0000 0000 1111 1111'B~~
~~- Available SF~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Scrambling code number~~	~~0~~
~~- Puncturing Limit~~	~~Reference to TS34.108 clause 6.10 Parameter Set~~
~~- Available Sub Channel number~~	~~'1111 1111 1111'B~~
CHOICE Mode	FDD
- Downlink PDSCH information	Not Present
Downlink information common for all radio links	Not Present
Downlink information for each radio links	Not Present
~~- Primary CPICH info~~	
~~- Primary scrambling code~~	~~150~~
~~- PDSCH with SHO DCH info~~	~~Not Present~~
~~- PDSCH code mapping~~	~~Not Present~~
~~- Downlink DPCH info for each RL~~	~~Not Present~~
~~- Secondary CCPCH info~~	
~~- Selection Indicator~~	~~Not Present~~
~~- Primary CPICH usage for channel estimation~~	~~Primary CPICH may be used~~
~~- Secondary CPICH info~~	~~Not Present~~
~~- Secondary scrambling code~~	~~1~~
~~- SSDT Indicator~~	~~FALSE~~
~~- 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)~~
~~- Pilot symbol existence~~	~~FALSE~~
~~- TFCI existence~~	~~TRUE~~
~~- Fixed or Flexible Position~~	~~Flexible~~
~~- Timing offset~~	~~0~~
~~- TFCS~~	~~Not Present~~
~~- FACH/PCH information~~	~~Not Present~~
~~- References to system information blocks~~	~~Not Present~~
~~- Scheduling information~~	

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
~~Other information element~~	~~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 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
RB with PDCP information list	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.
DPCH TFCS in Uplink	
- Allowed Transport format combination ~~-~~index	0 (The TFC is constructed from ALL TF0)

Contents of UE CAPABILITY ENQUIRY message: ~~[TBD]~~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 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 ~~or UM~~

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	
- LCS Capability	
- Measurement capability	
UE system specific capability	Value will be checked. UE must include the classmark information for the supported ~~system~~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.
~~AM_RLC error indication~~	~~Not checked~~
URA update cause	See the test content
Protocol error indicator	~~Not c~~Checked to see if it is absent or set to 'FALSE'
Protocol error information	~~Not c~~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
~~DRX~~ RRC state indicator	~~No~~DRX~~~~URA_PCH
UTRAN DRX cycle length coefficient	Not Present
CN information info	Not Present
URA identity	See the test content
RB with PDCP information list	Not Present