Source: **T1**

Title: **CR's to TS 34.122 v3.10.0 and v4.6.0 for approval**

Agenda item: **5.1.3**

Document for: **Approval**

This document contains 19 CRs to TS 34.122 v3.10.0 and 24 CRs to TS 34.122 v4.6.0. These CRs have been agreed by T1 and are put forward to TSG T for approval.

CRs related to new RRM test cases R99:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version -New	Doc-2nd-Level	Work item
34.122	124	-	R99	RRC connection re-establishment test cases Rel99	F	3.10.0	3.11.0	T1-030135	
34.122	126	-	R99	Transport Format Combination Selection test case Rel99	F	3.10.0	3.11.0	T1-030137	
34.122	128	-	R99	Timing Advance test case Rel99	F	3.10.0	3.11.0	T1-030139	
34.122	130	-	R99	Event-triggered reporting in AWGN test case Rel99	F	3.10.0	3.11.0	T1-030141	
34.122	132	-	R99	Event 1H and 1I triggered reporting in AWGN propagation condition test case Rel99	F	3.10.0	3.11.0	T1-030143	
34.122	134	-	R99	on Correct reporting of neighbours in fading propagation condition test case Rel99	F	3.10.0	3.11.0	T1-030145	
34.122	136	-	R99	Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition test case Rel99	F	3.10.0	3.11.0	T1-030147	
34.122	138	-	R99	Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition test case Rel99	F	3.10.0	3.11.0	T1-030149	
34.122	142	-	R99	CPICH RSCP Measurement test case Rel99	F	3.10.0	3.11.0	T1-030153	
34.122	144	-	R99	Timeslot ISCP Measurement test case Rel99	F	3.10.0	3.11.0	T1-030155	
34.122	146	-	R99	UTRA carrier RSSI Measurement test case Rel99	F	3.10.0	3.11.0	T1-030157	
34.122	148	-	R99	SFN-SFN type 1 test case Rel99	F	3.10.0	3.11.0	T1-030159	
34.122	150	-	R99	SFN-CFN observed time difference measurement test case Rel99	F	3.10.0	3.11.0	T1-030161	
34.122	152	-	R99	TDD-GSM handover case Rel99	F	3.10.0	3.11.0	T1-030163	

CRs related to new RRM test cases Rel-4:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version -New	Doc-2nd-Level	Work item
34.122	125	-	Rel-4	RRC connection re-establishment test cases Rel4	A	4.6.0	4.7.0	T1-030136	TEI
34.122	127	-	Rel-4	Transport Format Combination Selection test case Rel4	A	4.6.0	4.7.0	T1-030138	TEI
34.122	129	-	Rel-4	Timing Advance test case Rel4	A	4.6.0	4.7.0	T1-030140	TEI
34.122	131	-	Rel-4	Event-triggered reporting in AWGN test case Rel4	A	4.6.0	4.7.0	T1-030142	TEI
34.122	133	-	Rel-4	Event 1H and 1I triggered reporting in AWGN propagation condition test case Rel4	A	4.6.0	4.7.0	T1-030144	TEI
34.122	135	-	Rel-4	Correct reporting of neighbours in fading propagation condition test case Rel4	A	4.6.0	4.7.0	T1-030146	TEI
34.122	137	-	Rel-4	Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition test case Rel4	A	4.6.0	4.7.0	T1-030148	TEI
34.122	139	-	Rel-4	Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition test case Rel4	A	4.6.0	4.7.0	T1-030150	TEI
34.122	143	-	Rel-4	CPICH RSCP Measurement test case Rel4	A	4.6.0	4.7.0	T1-030154	TEI
34.122	145	-	Rel-4	Timeslot ISCP Measurement test case Rel4	A	4.6.0	4.7.0	T1-030156	TEI
34.122	147	-	Rel-4	UTRA carrier RSSI Measurement test case Rel4	A	4.6.0	4.7.0	T1-030158	TEI
34.122	149	-	Rel-4	SFN-SFN type 1 test case Rel4	A	4.6.0	4.7.0	T1-030160	TEI
34.122	151	-	Rel-4	SFN-CFN observed time difference measurement test	A	4.6.0	4.7.0	T1-030162	TEI

				case Rel4					
34.122	153	-	Rel-4	TDD-GSM handover case Rel4	A	4.6.0	4.7.0	T1-030164	TEI

CRs related to maintenance of R99:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version -New	Doc-2nd-Level	Work item
34.122	140	-	R99	Corrections to TDD Cell Reselection and Handover Test Cases Rel99	F	3.10.0	3.11.0	T1-030151	
34.122	154	-	R99	Correction to Cell Re-selection in CELL_PCH and URA_PCH test cases Rel99	F	3.10.0	3.11.0	T1-030165	
34.122	156	-	R99	Reference and measurement performance sSub-sections updates in 34.122 Rel99	F	3.10.0	3.11.0	T1-030167	
34.122	158	-	R99	Corrections to P-CCPCH RSCP test case Rel99	F	3.10.0	3.11.0	T1-030169	
34.122	160	-	R99	Statistical testing of RRM delay performance in Annex F.6.2 Rel99	F	3.10.0	3.11.0	T1-030176	

CRs related to maintenance of Rel-4:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version -New	Doc-2nd-Level	Work item
34.122	141	-	Rel-4	Corrections to TDD Cell Reselection and Handover Test Cases Rel4	A	4.6.0	4.7.0	T1-030152	TEI
34.122	155	-	Rel-4	Correction to Cell Re-selection in CELL_PCH and URA_PCH test cases Rel4	A	4.6.0	4.7.0	T1-030166	TEI
34.122	157	-	Rel-4	Reference and measurement performance sub-sections updates in 34.122 Rel4	A	4.6.0	4.7.0	T1-030168	TEI
34.122	159	-	Rel-4	Corrections to P-CCPCH RSCP test case Rel4	A	4.6.0	4.7.0	T1-030170	TEI
34.122	161	-	Rel-4	Statistical testing of RRM delay performance in Annex F.6.2 Rel4	A	4.6.0	4.7.0	T1-030177	TEI

CRs related to Low Chip Rate TDD:

Spec	CR	Rev	Release	Subject	Cat	Version Current	Version -New	Doc-2nd-Level	Work item
34.122	162	-	Rel-4	Addition of LCR Event 1G test	F	4.6.0	4.7.0	T1-030181	LCRTDD
34.122	163	-	Rel-4	Addition of LCR events 1H and 1I	F	4.6.0	4.7.0	T1-030182	LCRTDD
34.122	164	-	Rel-4	Addition of LCR neighbour monitoring	F	4.6.0	4.7.0	T1-030183	LCRTDD
34.122	165	-	Rel-4	Updates to LCR TDD Hand-over inter and intra frequency test cases	F	4.6.0	4.7.0	T1-030184	LCRTDD
34.122	166	-	Rel-4	Updates to tables in the TDD RX performance test	F	4.6.0	4.7.0	T1-030185	LCRTDD

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030135

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **124** ⌘**rev** **-** ⌘ Current version: **3.10.0** ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	RRC connection re-establishment test cases
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘ **F**	***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	The test cases for RRC connection re-establishment in UTRA TDD are missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of RRC connection re-establishment test cases for UTRA TDD
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.4.1			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	-			

8.4.1 RRC ~~connection~~ re-establishment delay

8.4.1.1 RRC re-establishment delay ~~T~~to a known target cell

~~(FFS)~~

8.4.1.1.1 Definition and applicability

For UTRA TDD, the UE re-establishment delay $T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ is defined as the time between the moment when radio link failure is considered by the UE to when the UE starts sending the RRC CELL UPDATE message to the UTRAN on RACH.

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had a radio link connected to the cell during the last 5 seconds
- the cell has been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD UE.

8.4.1.1.2 Minimum requirement

The RRC re-establishment delay $T_{RE\text{-}ESTABLISH}$ to a known target cell shall be less than 2 s.

The rate of successful RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The RRC re-establishment delay in this test case can be expressed as,

$$T_{RE\text{-}ESTABLISH} = T_{RRC\text{-}RE\text{-}ESTABLISH} + T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}KNOWN},$$

where,

$T_{RRC\text{-}RE\text{-}ESTABLISH} = 160ms + (N_{313}-1)*10ms + T_{313}$

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}KNOWN} = 50ms + T_{SEARCH\text{-}KNOWN} + T_{SI} + T_{RA}$,

and,

N_{313} Equal to 20 and therefore resulting in 200 ms delay.

T_{313} Equal to 0 s.

$T_{SEARCH\text{-}KNOWN}$ Equal to 100 ms

T_{SI} Equal to 1280 ms, the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure performance value of system information blocks defined in TS 25.331 [9] for a UTRAN cell.

T_{RA} Equal to 40 ms, the additional delay caused by the random access procedure.

This gives a total of 1820ms, allow 2 s in the test case.

8.4.1.1.3 Test purpose

The test purpose is to verify that the RRC re-establishment delay to a known target cell is within the specified limits.

8.4.1.1.4 Method of test

8.4.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.1 and table 8.4.1.2 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE in order to camp on a cell shall be 1280 ms. DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with time durations of T1 and T2 respectively.

During T1, the DL DPCH in cell 1 shall be transmitted in timeslot 2 and the UL DPCH in cell 1 shall be transmitted in timeslot 10. At the beginning of time period T2, the DPCH shall be removed.

Cell 1 and cell shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.4.1.1: General test parameters for RRC re-establishment delay, known target cell case

Parameter		Unit	Value	Comment
DCH parameters			DL reference measurement channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	Cell 2 shall be included in the monitored set in Cell 1.
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
N313			20	
N315			1	
T313		Seconds	0	
T_{SI}		ms	1280	
Monitored cell list size			24 TDD neighbours on Channel 1	
Reporting frequency		Seconds	4	
T1			10	
T2			6	

Table 8.4.1.2: Cell specific parameters for RRC re-establishment delay test, known target cell case

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3	n.a.	n.a.	-3	-3	n.a.	n.a.
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH t_{offset}		0	0	0	0	15	15	15	15
PICH_Ec/Ior	dB	n.a.	n.a.	-3	-3	n.a.	n.a.	-3	-3
OCNS_Ec/Ior	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	3	-13	3	-13	5	5	5	5
I_{oc}	dBm/ 3.84 MHz	-70							
P-CCPCH_RSCP	dB	-70	-86	n.a.	n.a.	-68	-68	n.a.	n.a.
Propagation Condition		AWGN							

8.4.1.1.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.

[Editor's note: subclause 7.3.4 in TS 34.108 [3] (Message sequence chart for Handover Test procedure) is not yet specified.

4) The SS waits for random access requests from the UE on cell 2.

5) 10 s after step3 has completed, the parameters are changed to that as described for T2.

6) If the UE responds on cell 2 within 2.0 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.

7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.

8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to T1.

9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.

10) Repeat step 3-9 [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS 25.331 [9] for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 1920ms (Minimum requirement + 100ms), allow 2 s in the test case.

8.4.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1.2 RRC re-establishment delay ~~T~~to an unknown target cell

~~(FFS)~~

8.4.1.2.1 Definition and applicability

For UTRA TDD, the UE re-establishment delay $T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ is defined as the time between the moment when radio link failure is considered by the UE to when the UE starts sending the RRC CELL UPDATE message to the UTRAN on RACH.

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had a radio link connected to the cell during the last 5 seconds
- the cell has been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD UE.

8.4.1.2.2 Minimum requirement

The RRC re-establishment delay $T_{RE\text{-}ESTABLISH}$ to an unknown target cell shall be less than 3,7 s.

The rate of successful RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The RRC re-establishment delay in this test case can be expressed as,

$$T_{RE\text{-}ESTABLISH} = T_{RRC\text{-}RE\text{-}ESTABLISH} + T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}UNKNOWN}.$$

where,

$T_{RRC-RE-ESTABLISH}$= 160ms+(N_{313}-1)*10ms+T_{313}

$T_{UE-RE-ESTABLISH-REQ-KNOWN}$=50ms+$T_{SEARCH-UNKNOWN}$*NF + T_{SI} + T_{RA},

and,

N_{313} Equal to 20 and therefore resulting in 200 ms delay.

T_{313} Equal to 0 s.

$T_{SEARCH-UNKNOWN}$ Equal to 800 ms

NF Equal to 2, the number of different frequencies in the monitored set of cell 1.

T_{SI} Equal to 1280 ms, the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure performance value of system information blocks defined in TS 25.331 [9] for a UTRAN cell.

T_{RA} Equal to 40 ms, the additional delay caused by the random access procedure.

This gives a total of 3320ms, allow 3,7 s in the test case.

8.4.1.2.3 Test purpose

The test purpose is to verify that the RRC re-establishment delay to an unknown target cell is within the specified limits.

8.4.1.2.4 Method of test

8.4.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.3 and table 8.4.1.4 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE in order to camp on a cell shall be 1280 ms. DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with time durations of T1 and T2 respectively.

During T1, the DL DPCH in cell 1 shall be transmitted in timeslot 2 and the UL DPCH in cell 1 shall be transmitted in timeslot 10. At the beginning of time period T2, the DPCH shall be removed.

Cell 1 and cell shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.4.1.3: General test parameters for RRC re-establishment delay, unknown target cell case

Parameter		Unit	Value	Comment
DCH parameters			DL reference measurement channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	Cell 2 shall not be included in the monitored set in Cell 1.
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.

N313		20	
N315		1	
T313	Seconds	0	
T_{SI}	ms	1280	
Monitored cell list size		16 TDD neighbours on Channel 1 16 TDD neighbours on Channel 2	
Reporting frequency	Seconds	4	
T1		10	
T2		6	

Table 8.4.1.4: Cell specific parameters for RRC re-establishment delay test, unknown target cell case

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2			
PCCPCH_Ec/Ior	dB	-3	-3	n.a.	n.a.	-3	-3	n.a.	n.a.
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0	15	15	15	15
PICH_Ec/Ior	dB	n.a.	n.a.	-3	-3	n.a.	n.a.	-3	-3
OCNS_Ec/Ior	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	3	-13	3	-13	5	5	5	5
I_{oc}	dBm/ 3.84 MHz	-70							
P-CCPCH_RSCP	dB	-70	-86	n.a.	n.a.	-68	-68	n.a.	n.a.
Propagation Condition		AWGN							

8.4.1.2.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.

[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]

4) The SS waits for random access requests from the UE on cell 2.

5) 10 s after step3 has completed, the parameters are changed to that as described for T2.

6) If the UE responds on cell 2 within 3.7 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.

7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.

8) After 6 seconds the RF parameters are set up according to T1.

9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.

10) Repeat step 3-9 [TBD] times

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS 25.331 [9] for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 3420ms (Minimum requirement + 100ms), allow 3.7s in the test case.

8.4.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030136

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **125** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	RRC connection re-establishment test cases
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘ **A**	***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	The test cases for RRC connection re-establishment in UTRA TDD (3.84 Mcps option) are missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of RRC connection re-establishment test cases for UTRA TDD (3.84 Mcps option)
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.4.1			
		Y	**N**		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	-			

8.4.1 RRC ~~connection~~ re-establishment delay

8.4.1.1 ~~To a known target cell,~~ 3,84 Mcps TDD option

~~(FFS).~~

8.4.1.1.1 RRC re-establishment delay to a known target cell

8.4.1.1.1.1 Definition and applicability

For UTRA TDD, the UE re-establishment delay $T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ is defined as the time between the moment when radio link failure is considered by the UE to when the UE starts sending the RRC CELL UPDATE message to the UTRAN on RACH.

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had a radio link connected to the cell during the last 5 seconds
- the cell has been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD (3.84 Mcps option) UE.

8.4.1.1.1.2 Minimum requirement

The RRC re-establishment delay $T_{RE\text{-}ESTABLISH}$ to a known target cell shall be less than 2 s.

The rate of successful RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The RRC re-establishment delay in this test case can be expressed as,

$$T_{RE\text{-}ESTABLISH} = T_{RRC\text{-}RE\text{-}ESTABLISH} + T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}KNOWN},$$

where,

$T_{RRC\text{-}RE\text{-}ESTABLISH} = 160ms+(N_{313}-1)*10ms+T_{313}$

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}KNOWN} = 50ms+T_{SEARCH\text{-}KNOWN} + T_{SI} + T_{RA}$,

and,

N_{313} Equal to 20 and therefore resulting in 200 ms delay.

T_{313} Equal to 0 s.

$T_{SEARCH\text{-}KNOWN}$ Equal to 100 ms

T_{SI} Equal to 1280 ms, the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure performance value of system information blocks defined in TS 25.331 [9] for a UTRAN cell.

T_{RA} Equal to 40 ms, the additional delay caused by the random access procedure.

This gives a total of 1820ms, allow 2 s in the test case.

8.4.1.1.1.3 Test purpose

The test purpose is to verify that the RRC re-establishment delay to a known target cell is within the specified limits.

8.4.1.1.1.4 Method of test

8.4.1.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.1 and table 8.4.1.2 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE in order to camp on a cell shall be 1280 ms. DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with time durations of T1 and T2 respectively.

During T1, the DL DPCH in cell 1 shall be transmitted in timeslot 2 and the UL DPCH in cell 1 shall be transmitted in timeslot 10. At the beginning of time period T2, the DPCH shall be removed.

Cell 1 and cell shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.4.1.1: General test parameters for RRC re-establishment delay, known target cell case

Parameter		Unit	Value	Comment
DCH parameters			DL reference measurement channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	Cell 2 shall be included in the monitored set in Cell 1.
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
N313			20	
N315			1	
T313		Seconds	0	
T_{SI}		ms	1280	
Monitored cell list size			24 TDD neighbours on Channel 1	
Reporting frequency		Seconds	4	
T1			10	
T2			6	

Table 8.4.1.2: Cell specific parameters for RRC re-establishment delay test, known target cell case

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3	n.a.	n.a.	-3	-3	n.a.	n.a.
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH t_{offset}		0	0	0	0	15	15	15	15
PICH_Ec/Ior	dB	n.a.	n.a.	-3	-3	n.a.	n.a.	-3	-3
OCNS_Ec/Ior	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	3	-13	3	-13	5	5	5	5
I_{oc}	dBm/ 3.84 MHz	-70							
P-CCPCH_RSCP	dB	-70	-86	n.a.	n.a.	-68	-68	n.a.	n.a.
Propagation Condition		AWGN							

8.4.1.1.1.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.

[Editor's note: subclause 7.3.4 in TS 34.108 [3] (Message sequence chart for Handover Test procedure) is not yet specified.

4) The SS waits for random access requests from the UE on cell 2.

5) 10 s after step3 has completed, the parameters are changed to that as described for T2.

6) If the UE responds on cell 2 within 2.0 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.

7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.

8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to T1.

9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.

10) Repeat step 3-9 [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS 25.331 [9] for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 1920ms (Minimum requirement + 100ms), allow 2 s in the test case.

8.4.1.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1.1.2 RRC re-establishment delay to an unknown target cell

8.4.1.1.2.1 Definition and applicability

For UTRA TDD, the UE re-establishment delay $T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ is defined as the time between the moment when radio link failure is considered by the UE to when the UE starts sending the RRC CELL UPDATE message to the UTRAN on RACH.

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had a radio link connected to the cell during the last 5 seconds
- the cell has been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD (3.84 Mcps option) UE.

8.4.1.1.2.2 Minimum requirement

The RRC re-establishment delay $T_{RE\text{-}ESTABLISH}$ to an unknown target cell shall be less than 3,7 s.

The rate of successful RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The RRC re-establishment delay in this test case can be expressed as,

$T_{RE\text{-}ESTABLISH} = T_{RRC\text{-}RE\text{-}ESTABLISH} + T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}UNKNOWN}$.

where,

$T_{RRC\text{-}RE\text{-}ESTABLISH} = 160ms + (N_{313}-1)*10ms + T_{313}$

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}KNOWN} = 50ms + T_{SEARCH\text{-}UNKNOWN}*NF + T_{SI} + T_{RA}$,

and,

N_{313} Equal to 20 and therefore resulting in 200 ms delay.

T_{313} Equal to 0 s.

$T_{SEARCH\text{-}UNKNOWN}$ Equal to 800 ms

NF Equal to 2, the number of different frequencies in the monitored set of cell 1.

T_{SI} Equal to 1280 ms, the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure performance value of system information blocks defined in TS 25.331 [9] for a UTRAN cell.

T_{RA} Equal to 40 ms, the additional delay caused by the random access procedure.

This gives a total of 3320ms, allow 3,7 s in the test case.

8.4.1.1.2.3 Test purpose

The test purpose is to verify that the RRC re-establishment delay to an unknown target cell is within the specified limits.

8.4.1.1.2.4 Method of test

8.4.1.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.4.1.3 and table 8.4.1.4 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE in order to camp on a cell shall be 1280 ms. DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with time durations of T1 and T2 respectively.

During T1, the DL DPCH in cell 1 shall be transmitted in timeslot 2 and the UL DPCH in cell 1 shall be transmitted in timeslot 10. At the beginning of time period T2, the DPCH shall be removed.

Cell 1 and cell shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.4.1.3: General test parameters for RRC re-establishment delay, unknown target cell case

Parameter		Unit	Value	Comment
DCH parameters			DL reference measurement channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	Cell 2 shall not be included in the monitored set in Cell 1.
	Neighbour cell		Cell 2	
Final conditions	Active cell		Cell 2	
Access Service Class (ASC#0) - Persistence value		-	1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the

			test.
N313		20	
N315		1	
T313	Seconds	0	
T_{SI}	ms	1280	
Monitored cell list size		16 TDD neighbours on Channel 1 16 TDD neighbours on Channel 2	
Reporting frequency	Seconds	4	
T1		10	
T2		6	

Table 8.4.1.4: Cell specific parameters for RRC re-establishment delay test, unknown target cell case

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2			
PCCPCH_Ec/Ior	dB	-3	-3	n.a.	n.a.	-3	-3	n.a.	n.a.
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH t_{offset}		0	0	0	0	15	15	15	15
PICH_Ec/Ior	dB	n.a.	n.a.	-3	-3	n.a.	n.a.	-3	-3
OCNS_Ec/Ior	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	3	-13	3	-13	5	5	5	5
I_{oc}	dBm/ 3.84 MHz	-70							
P-CCPCH_RSCP	dB	-70	-86	n.a.	n.a.	-68	-68	n.a.	n.a.
Propagation Condition		AWGN							

8.4.1.1.2.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.

[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]

4) The SS waits for random access requests from the UE on cell 2.

5) 10 s after step3 has completed, the parameters are changed to that as described for T2.

6) If the UE responds on cell 2 within 3.7 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.

7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.

8) After 6 seconds the RF parameters are set up according to T1.

9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.

10) Repeat step 3-9 [TBD] times

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS 25.331 [9] for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 3420ms (Minimum requirement + 100ms), allow 3.7s in the test case.

8.4.1.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.1.2 ~~To an unknown target cell, 3~~1,2~~8~~4 Mcps TDD option

~~(FFS).~~

~~8.4.1.3 Test 1: 1,28 Mcps option~~

8.4.1.2.1 Test 1

~~8.4.1.3.1 Definition and applicability~~

8.4.1.2.1.1 Definition and applicability

The UE Re-establishment delay requirement ($T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$) is defined as the time between the moment when radio link failure is considered by the UE, to when the UE starts to send preambles on the PRACH.

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ is depending on whether the target cell is known by the UE or not. A cell is known if either or both of the following conditions are true:

- the UE has had radio links connected to the cell in the previous (old) active set.
- the cell has been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD UE, 1.28 Mcps option..

~~8.4.1.3.2 Minimum requirement~~

8.4.1.2.1.2 Minimum requirement

The Re-establishment delay $T_{RE\text{-}ESTABLISH}$ to a known cell shall be less than 1.9 s.

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

$$T_{RE\text{-}ESTABLISH} = T_{RRC\text{-}RE\text{-}ESTABLISH} + T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}KNOWN}.$$

where

$T_{RRC\text{-}RE\text{-}ESTABLISH}$= 160ms+$(N_{313}-1)$*10ms+$T_{313}$

$T_{UE\text{-}RE\text{-}ESTABLISH\_REQ\text{-}KNOWN}$=50ms+$T_{search}$ + T_{SI} + T_{RA},

N_{313}= 20

T_{313}= 0s

T_{search}= 100ms

T_{RA} = The additional delay caused by the random access procedure. 40 ms is assumed in this test case.

T_{SI} is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms). 1280 ms is assumed in this test case.

This gives a total of 1820ms, allow 1.9s in the test case.

~~8.4.1.3.3 Test purpose~~

8.4.1.2.1.3 Test purpose

To verify that the UE meets the minimum requirement.

~~8.4.1.3.4 Method of test~~

8.4.1.2.1.4 Method of test

8.4.1.~~3~~2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G2.2

Frequencies to be tested: mid range; see clause G.2.4

The test parameters are given in table ~~8.4.1.3.4.1~~8.4.1.5 and table ~~8.4.1.3.4.2~~8.4.1.6 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms. And DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consist of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.~~3.4.1~~5: General test parameters for RRC re-establishment delay, Test 1

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference measurement channel 12.2 kbps	As specified in clause C.3.1 and C.2.1
Power Control		On	
Active cell, Initial condition		Cell 1	
Active cell, Final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall only include intra frequency neighbours.
Cell 2			Included in the monitored set
Reporting frequency	Seconds	4	
T1	s	10	
T2	s	6	

Table 8.4.1.~~3.4.2~~6: Cell specific parameters for RRC re-establishment delay test, Test 1

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
Cell Frequency	ChNr	1		1	
CPICH_Ec/Ior	DB	-10		-10	
PCCPCH_Ec/Ior	DB	-12		-12	
PICH_Ec/Ior	DB	-15		-15	
DCH_Ec/Ior	dB	-17	-Infinity	Not applicable	
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941	
$\hat{I}_{or}/I_{oc}$	dB	2,39	-Infinity	4,39	
I_{oc}	dBm/ 1.28 MHz	-70			
CPICH_Ec/Io	dB	-15	-Infinity	-13	
Propagation Condition		AWGN			

8.4.1.~~3~~2.1.4.2 Procedure

1) The RF parameters are set up according to column T1 in table 8.4.1.3.4.2.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4
4) The SS waits for random access requests from the UE on cell 2.
5) 10 s after step3 has completed, the parameters are changed to that as described for column T2.
6) If the UE responds on cell 2 within 2.0 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.
7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.
8) After 6 seconds from the beginning of time period T2, the RF parameters are set up according to T1.
9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.
10) Repeat step 3-9 [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 1920ms(Minimum requirement + 100ms), allow 2s in the test case.

~~8.4.1.3.5 Test requirements~~

8.4.1.2.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

~~8.4.1.4 Test 2: 1,28 Mcps option~~

8.4.1.2.2 Test 2

~~8.4.1.4.1 Definition and applicability~~

8.4.1.2.2.1 Definition and applicability

The UE Re-establishment delay requirement ($T_{UE\text{-}E\text{-}ESTABLISH\text{-}REQ}$) is defined as the time between the moment when radio link failure is considered by the UE, to when the UE starts to send preambles on the PRACH.

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ}$ is depending on whether the target cell is known by the UE or not. A cell is NOT known if both of the following conditions are true:

- the UE has NOT had radio links connected to the cell in the previous (old) active set.
- the cell has NOT been measured by the UE during the last 5 seconds.

The requirements of this test apply to the TDD UE, 1.28 Mcps option..

~~8.4.1.4.2 Minimum requirement~~

8.4.1.2.2.2 Minimum requirement

The rate of correct RRC re-establishments observed during repeated tests shall be at least 90%.

NOTE: The Re-establishment delay in this case can be expressed as

$$T_{RE\text{-}ESTABLISH} = T_{RRC\text{-}RE\text{-}ESTABLISH} + T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}UNKNOWN}.$$

where

$T_{RRC\text{-}RE\text{-}ESTABLISH}$= 160ms+$(N_{313}-1)$*10ms+$T_{313}$

$T_{UE\text{-}RE\text{-}ESTABLISH\text{-}REQ\text{-}UNKNOWN}$=50ms+$T_{search}$*NF + T_{SI} + T_{RA},

N_{313}= 20

T_{313}= 0s

T_{search}= 800ms

NF is the number of different frequencies in the monitored set. 3 frequencies are assumed in this test case.

T_{RA} = The additional delay caused by the random access procedure. 40 ms is assumed in this test case.

T_{SI} is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell (ms).1280 ms is assumed in this test case.

This gives a total of 4120ms, allow 4.2s in the test case.

~~8.4.1.4.3 Test purpose~~

8.4.1.2.2.3 Test purpose

To verify that the UE meets the minimum requirement

~~8.4.1.4.4 Method of test~~

8.4.1.2.2.4 Method of test

8.4.1.~~4~~2.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G2.2

Frequencies to be tested: mid range; see clause G.2.4

The test parameters are given in table ~~8.4.1.4.1~~8.4.1.7 and table ~~8.4.1.4.2~~8.4.1.8 below. The maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell shall be 1280 ms. And DRX cycle length shall be 1280ms. In the measurement control information it is indicated to the UE that periodic reporting shall be used. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively. At the start of time period T2, the dedicated channel is removed.

Table 8.4.1.~~4.1.~~7 General test parameters for RRC re-establishment delay, Test 2

Parameter	Unit	Value	Comment
DCH Parameters		DL and UL Reference measurement channel 12.2 kbps	As specified in clause A.3.1 and A.2.1
Power Control		On	
Active cell, initial condition		Cell 1	
Active cell, final condition		Cell 2	
N313		20	
N315		1	
T313	Seconds	0	
Monitored cell list size		24	Monitored set shall include 2 additional frequencies.
Cell 2			Cell 2 is not included in the monitored set. Cell 2 is located on one of the 2 additional frequencies of the monitored set.
Reporting frequency	Seconds	4	
T1	s	10	
T2	s	6	

Table 8.4.1.~~4.2~~8 Cell specific parameters for RRC re-establishment delay test, Test 2

Parameter	Unit	Cell 1		Cell 2	
		T1	T2	T1	T2
Cell Frequency	ChNr	1		2	
CPICH_Ec/Ior	DB	-10		-10	
PCCPCH_Ec/Ior	DB	-12		-12	
PICH_Ec/Ior	DB	-15		-15	
DCH_Ec/Ior	DB	-17	-Infinity	Not applicable	
OCNS_Ec/Ior	DB	-1.049	-0.941	-0.941	
$\hat{I}_{or}/I_{oc}$	DB	-3,35	-Infinity	-Infinity	0,02
I_{oc}	dBm/ 1.28 MHz	-70			
CPICH_Ec/Io	DB	-15	-Infinity	-Infinity	-13
Propagation Condition		AWGN			

8.4.1.~~4~~2.2.4.2 Procedure

1) The RF parameters are set up according to column T1 in table 8.4.1.4.2.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4

4) The SS waits for random access requests from the UE on cell 2.

5) 10 s after step3 has completed, the parameters are changed to that as described for column T2.

6) If the UE responds on cell 2 within 4.3 s from the beginning of time period T2 with a CELL_UPDATE command then the number of successful tests is increased by one.

7) SS shall transmit a RRC CONNECTION RELEASE message to make the UE transit to idle mode.

8) After 6 seconds the RF parameters are set up according to T1.

9) The SS shall wait for 30s to make the UE complete cell reselection to cell1.

10) Repeat step 3-9 [TBD] times

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 4220ms(Minimum requirement + 100ms), allow 4.3s in the test case.

~~8.4.1.4.5 Test requirements~~

8.4.1.2.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

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CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **126** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Transport Format Combination Selection test case
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**F** ***Release:*** ⌘ R99

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

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

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

Reason for change:	⌘	The test case for Transport Format Combination Selection in UE is missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of Transport Format Combination Selection in UE test case.
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.4.2

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

⌘

Other comments:	⌘	-

8.4.2 Transport format combination selection in UE

8.4.2.1 Interactive or Background, PS, UL: 64 kbps

8.4.2.1.1 Definition and applicability

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format combination set. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321 [14].

8.4.2.1.2 Minimum requirements

The UE shall continuously evaluate based on the *Elimination*, *Recovery* and *Blocking* criteria defined below, how TFCs can be used for the purpose of TFC selection. The evaluation shall be performed using the estimated UE transmit power of a given CCTrCH in its associated timeslots.

In the case of a single CCTrCH or multiple CCTrCHs having mutually exclusive timeslot assignments, the UE shall consider the *Eliminiation* criterion for a given TFC of a CCTrCH to be fulfilled if for 3 successive frames the estimated UE transmit power is greater than the Maximum UE transmitter power for at least one timeslot associated with the CCTrCH in each frame.

In the case of multiple CCTrCHs not having mutually exclusive timeslot assignments, if for a given CCTrCH for 3 successive frames the estimated UE transmit power is greater than the Maximum UE transmitter power for at least one timeslot associated with the CCTrCH in each frame, the UE shall consider the *Elimination* criterion for a given TFC to be fulfilled if the use of this TFC will cause the estimated UE transmit power to continue to be greater than the Maximum UE transmitter power in at least one timeslot associated with the CCTrCH.

In the case of multi-frame operation of UL Physical Channels, the UE shall only consider active frames for the evaluation of the *Elimination* criterion.

If the *Elimination* criterion for a given TFC is fulfilled, the MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Elimination* criterion was fulfilled.

The UE shall not consider the *Recovery* criterion for a given TFC to be fulfilled until the use of this TFC will not cause the estimated UE transmit power to be greater than the Maximum UE transmitter power for all UL timeslots associated with the TFC for a minimum of 3 successive frames.

In the case of multi-frame operation of UL Physical Channels, the UE shall only consider active frames for the evaluation of the *Recovery* criterion.

If the *Recovery* criterion for a given TFC is fulfilled, the MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Recovery* criterion was fulfilled.

The UE shall consider the *Blocking* criterion for a given TFC to be fulfilled at the latest at the start of the longest uplink TTI after the moment at which the TFC will have been in Excess-Power state for a duration of

$(T_{notify} + T_{modify} + T_{L1\_proc})$.

where:

- T_{notify} equals 15 ms, and
- T_{modify} equals MAX(T_{adapt_max},T_{TTI}), and
- $T_{L1\ proc}$ equals 35 ms, and

T_{adapt_max} equals MAX(T_{adapt_1}, T_{adapt_2}, ..., T_{adapt_N}), and

N equals the number of logical channels that need to change rate, and

T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. Table 6A.1 defines T_{adapt} times for different services. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms.

Table 8.4.2.1.1: T_{adapt}

Service	T_{adapt} [ms]
UMTS AMR	40
UMTS AMR 2	60

T_{TTI} equals the longest uplink TTI of the selected TFC (ms).

The Maximum UE transmitter power is defined as follows

Maximum UE transmitter power = MIN(Maximum allowed UL TX Power, UE maximum transmit power)

where

Maximum allowed UL TX Power is set by SS and defined in TS 25.331 [9], and

UE maximum transmit power is defined by the UE power class, and specified in TS 25.102 [1].

The normative reference for these requirements is TS 25.123 [2] clauses 6A.2 and A.6A.2.

8.4.2.1.3 Test purpose

The purpose is to verify the UE blocks (stops using) a currently used TFC when the UE output power is not sufficient to support that TFC. This test will verify the general requirement on TFC selection in section 8.4.2.1.2 for a RAB intended for packet data services, i.e. Interactive or Background, PS, UL: 64kbps as defined in TS 34.108 [3].

8.4.2.1.4 Method of test

8.4.2.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Tables 8.4.2.1.2, 8.4.2.1.3, Table 8.4.2.1.4 and Table 8.4.2.1.5 below. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively.

Details on the UL reference RAB in table 8.4.2.1.3 can be found in TS 34.108 [3] section “Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH”.

Table 8.4.2.1.2: General test parameters

Parameter	Unit	Value	Comment
TFCS size		10	
TFCS		UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC8, UL_TFC9	Gain factors for TFC0 to TFC9 shall be set to 1.
Power Control		On	
Active cell		Cell 1	
Maximum allowed UL TX power	dBm	0	Value of IE "Maximum allowed UL Tx power
Primary CCPCH Tx power	dBm	18	Value of IE "Primary CCPCH Tx power"
UL timeslot interference	dBm	-80	Value of IE "UL timeslot interference" This value shall apply to all timeslots
α		1	IE "Alpha" either not sent or explicitly set to value
UL target SIR	dB	6	
DPCH constant offset	dB	adjustable	Value of IE "DPCH constant power
T1	s	10	
T2	s	10	

Table 8.4.2.1.3: Transport channel parameters for UL reference RAB, Interactive or Background and DCCH

Parameter	Unit	64 kbps RAB	DCCH 3.4kbps
Transport Channel Number		1	2
Transmission Time Interval	ms	20	40
Type of Error Protection		Turbo coding	Convolutional coding
Coding Rate		1/3	
Size of CRC	bits	16	
Transport Block Size	bits	336	148
Transport Block Set Size	bits	336*B (B=0,1,2,3,4)	148*B (B=0,1)
Transport Format Set	bits		
TF0		0x336	0x148
TF1		1x336	1x148
TF2		2x336	N/A
TF3		3x336	N/A
TF4		4x336	N/A

Table 8.4.2.1.4: UL TFCI

TFCI	(64 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF0, TF1)
UL_TFC2	(TF1, TF0)
UL_TFC3	(TF1, TF1)
UL_TFC4	(TF2, TF0)
UL_TFC5	(TF2, TF1)
UL_TFC6	(TF3, TF0)
UL_TFC7	(TF3, TF1)
UL_TFC8	(TF4, TF0)
UL_TFC9	(TF4, TF1)

Table 8.4.2.1.5: Physical channel parameters

Parameter	Unit	Value
UL timeslot		7
Burst type		1
Resource units		{(spreading factor 16 x 1 code) + (spreading factor 4 x 1 code)} x 1 time slot
TFCI	Bits	16
TPC	Bits	2
Frame allocation		Continuous

The test shall be performed in AWGN channel propagation conditions. The P-CCPCH in the DL shall be transmitted in timeslot 0.

The amount of available user data shall be sufficient to allow uplink transmission at the highest bit rate (UL_TFC8 or UL_TFC9) during the entire test and it shall be ensured that the UE is using UL_TFC8 or UL_TFC9 at the end of T1.

8.4.2.1.4.2 Procedure

1) The UE is switched on.

2) The SS shall signal to the UE the allowed TFCS according to table 8.4.2.1.2.

3) For T1=30 secs the SS shall ensure that the received P-CCPCH power level in the UE is set to –60dBm and that the value of the DPCH constant value is adjusted such that the mean UE output power is –10dBm.

4) The SS shall decrease the received P-CCPCH power level in the UE by 20 dB.

5) The time from the beginning of T2 until the UE blocks (stops using) UL_TFC8 and UL_TFC9 shall be measured by the SS. The UE shall stop using UL_TFC8 and UL_TFC9 within 170 ms from beginning of time period T2.

6) Repeat steps 3-5 [50] times.

8.4.2.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030138

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **127** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Addition of Transport Format Combination Selection test case
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘ **A**	***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	The test case for Transport Format Combination Selection in UE is missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of Transport Format Combination Selection in UE test case.
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.4.2

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

Other comments:	⌘	-

8.4.2 Transport format combination selection in UE

8.4.2.1 Interactive or Background, PS, UL: 64 kbps

8.4.2.1.1 Definition and applicability

8.4.2.1.1.1 3.84 Mcps TDD option

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format combination set. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321 [14].

8.4.2.1.1.1A 1.28 Mcps TDD option

Void

8.4.2.1.2 Minimum requirements

8.4.2.1.2.1 3.84 Mcps TDD option

The UE shall continuously evaluate based on the *Elimination*, *Recovery* and *Blocking* criteria defined below, how TFCs can be used for the purpose of TFC selection. The evaluation shall be performed using the estimated UE transmit power of a given CCTrCH in its associated timeslots.

In the case of a single CCTrCH or multiple CCTrCHs having mutually exclusive timeslot assignments, the UE shall consider the *Eliminiation* criterion for a given TFC of a CCTrCH to be fulfilled if for 3 successive frames the estimated UE transmit power is greater than the Maximum UE transmitter power for at least one timeslot associated with the CCTrCH in each frame.

In the case of multiple CCTrCHs not having mutually exclusive timeslot assignments, if for a given CCTrCH for 3 successive frames the estimated UE transmit power is greater than the Maximum UE transmitter power for at least one timeslot associated with the CCTrCH in each frame, the UE shall consider the *Elimination* criterion for a given TFC to be fulfilled if the use of this TFC will cause the estimated UE transmit power to continue to be greater than the Maximum UE transmitter power in at least one timeslot associated with the CCTrCH.

In the case of multi-frame operation of UL Physical Channels, the UE shall only consider active frames for the evaluation of the *Elimination* criterion.

If the *Elimination* criterion for a given TFC is fulfilled, the MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Elimination* criterion was fulfilled.

The UE shall not consider the *Recovery* criterion for a given TFC to be fulfilled until the use of this TFC will not cause the estimated UE transmit power to be greater than the Maximum UE transmitter power for all UL timeslots associated with the TFC for a minimum of 3 successive frames.

In the case of multi-frame operation of UL Physical Channels, the UE shall only consider active frames for the evaluation of the *Recovery* criterion.

If the *Recovery* criterion for a given TFC is fulfilled, the MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within T_{notify} from the moment the *Recovery* criterion was fulfilled.

The UE shall consider the *Blocking* criterion for a given TFC to be fulfilled at the latest at the start of the longest uplink TTI after the moment at which the TFC will have been in Excess-Power state for a duration of

$(T_{notify} + T_{modify} + T_{L1\_proc})$.

where:

T_{notify} equals 15 ms, and

T_{modify} equals MAX(T_{adapt_max},T_{TTI}), and

$T_{L1\ proc}$ equals 35 ms, and

T_{adapt_max} equals MAX(T_{adapt_1}, T_{adapt_2}, ..., T_{adapt_N}), and

N equals the number of logical channels that need to change rate, and

T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. Table 6A.1 defines T_{adapt} times for different services. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms.

Table 8.4.2.1.1: T_{adapt}

Service	T_{adapt} [ms]
UMTS AMR	40
UMTS AMR 2	60

T_{TTI} equals the longest uplink TTI of the selected TFC (ms).

The Maximum UE transmitter power is defined as follows

Maximum UE transmitter power = MIN(Maximum allowed UL TX Power, UE maximum transmit power)

where

Maximum allowed UL TX Power is set by SS and defined in TS 25.331 [9], and

UE maximum transmit power is defined by the UE power class, and specified in TS 25.102 [1].

The normative reference for these requirements is TS 25.123 [2] clauses 6A.2 and A.6A.2.

8.4.2.1.2.1A 1.28 Mcps TDD option

Void

8.4.2.1.3 Test purpose

8.4.2.1.3.1 3.84 Mcps TDD option

The purpose is to verify the UE blocks (stops using) a currently used TFC when the UE output power is not sufficient to support that TFC. This test will verify the general requirement on TFC selection in section 8.4.2.1.2 for a RAB intended for packet data services, i.e. Interactive or Background, PS, UL: 64kbps as defined in TS 34.108 [3].

8.4.2.1.3.1A 1.28 Mcps TDD option

Void

8.4.2.1.4 Method of test

8.4.2.1.4.1 Initial conditions

8.4.2.1.4.1.1 3.84 Mcps TDD option

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Tables 8.4.2.1.2, 8.4.2.1.3, Table 8.4.2.1.4 and Table 8.4.2.1.5 below. The test consists of 2 successive time periods, with a time duration of T1 and T2 respectively.

Details on the UL reference RAB in table 8.4.2.1.3 can be found in TS 34.108 [3] section "Interactive or background / UL:64 DL: 64 kbps / PS RAB + UL:3.4 DL:3.4 kbps SRBs for DCCH".

Table 8.4.2.1.2: General test parameters

Parameter	Unit	Value	Comment
TFCS size		10	
TFCS		UL_TFC0, UL_TFC1, UL_TFC2, UL_TFC3, UL_TFC4, UL_TFC5, UL_TFC6, UL_TFC7, UL_TFC8, UL_TFC9	Gain factors for TFC0 to TFC9 shall be set to 1.
Power Control		On	
Active cell		Cell 1	
Maximum allowed UL TX power	dBm	0	Value of IE "Maximum allowed UL Tx power
Primary CCPCH Tx power	dBm	18	Value of IE "Primary CCPCH Tx power"
UL timeslot interference	dBm	-80	Value of IE "UL timeslot interference" This value shall apply to all timeslots
α		1	IE "Alpha" either not sent or explicitly set to value
UL target SIR	dB	6	
DPCH constant offset	dB	adjustable	Value of IE "DPCH constant power
T1	s	10	
T2	s	10	

Table 8.4.2.1.3: Transport channel parameters for UL reference RAB, Interactive or Background and DCCH

Parameter	Unit	64 kbps RAB	DCCH 3.4kbps
Transport Channel Number		1	2
Transmission Time Interval	ms	20	40
Type of Error Protection		Turbo coding	Convolutional coding
Coding Rate		1/3	
Size of CRC	bits	16	
Transport Block Size	bits	336	148
Transport Block Set Size	bits	336*B (B=0,1,2,3,4)	148*B (B=0,1)
Transport Format Set	bits		
TF0		0x336	0x148
TF1		1x336	1x148
TF2		2x336	N/A
TF3		3x336	N/A
TF4		4x336	N/A

Table 8.4.2.1.4: UL TFCI

TFCI	(64 kbps RAB, DCCH)
UL_TFC0	(TF0, TF0)
UL_TFC1	(TF0, TF1)
UL_TFC2	(TF1, TF0)
UL_TFC3	(TF1, TF1)
UL_TFC4	(TF2, TF0)
UL_TFC5	(TF2, TF1)
UL_TFC6	(TF3, TF0)
UL_TFC7	(TF3, TF1)
UL_TFC8	(TF4, TF0)
UL_TFC9	(TF4, TF1)

Table 8.4.2.1.5: Physical channel parameters

Parameter	Unit	Value
UL timeslot		7
Burst type		1
Resource units		{(spreading factor 16 x 1 code) + (spreading factor 4 x 1 code)} x 1 time slot
TFCI	Bits	16
TPC	Bits	2
Frame allocation		Continuous

The test shall be performed in AWGN channel propagation conditions. The P-CCPCH in the DL shall be transmitted in timeslot 0.

The amount of available user data shall be sufficient to allow uplink transmission at the highest bit rate (UL_TFC8 or UL_TFC9) during the entire test and it shall be ensured that the UE is using UL_TFC8 or UL_TFC9 at the end of T1.

8.4.2.1.4.1.1A 1.28 Mcps TDD option

Void

8.4.2.1.4.2 Procedure

8.4.2.1.4.2.1 3.84 Mcps TDD option

1) The UE is switched on.

2) The SS shall signal to the UE the allowed TFCS according to table 8.4.2.1.2.

3) For T1=30 secs the SS shall ensure that the received P-CCPCH power level in the UE is set to –60dBm and that the value of the DPCH constant value is adjusted such that the mean UE output power is –10dBm.

4) The SS shall decrease the received P-CCPCH power level in the UE by 20 dB.

5) The time from the beginning of T2 until the UE blocks (stops using) UL_TFC8 and UL_TFC9 shall be measured by the SS. The UE shall stop using UL_TFC8 and UL_TFC9 within 170 ms from beginning of time period T2.

6) Repeat steps 3-5 [50] times.

8.4.2.1.4.2.1A 1.28 Mcps TDD option

Void

8.4.2.1.5 Test requirements

8.4.2.1.5.1 3.84 Mcps TDD option

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.4.2.1.5.1A 1.28 Mcps TDD option

Void

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA 10th-14th February 2003

Tdoc ⌘T1-030139

CR-Form-v7

CHANGE REQUEST

⌘ **TS 34.122 CR 128** ⌘**rev** **-** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Timing Advance Test Case
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘ **F**	***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	Test Case 'UE Timing Advance' is missing from the current version of 34.122
Summary of change:	⌘	Addition of Test Case 'UE Timing Advance'
Consequences if not approved:	⌘	34.122 will be inconsistent with 25.123

Clauses affected:	⌘	8.5.1			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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

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

8.5 Timing Characteristics

8.5.1 UE Timing Advance

~~Void.~~

8.5.1.1 Definition and applicability

Timing advance is the correction to UE transmit timing required in order to avoid large delay spread at the Node B. The timing advance value is provided to the UE by UTRAN.

The requirements and this test apply to the TDD UE.

8.5.1.2 Minimum requirement

The UE shall adjust the timing of its transmissions with an accuracy better than or equal to ±0.5 chip to the signalled timing advance value.

The normative reference for this requirement is TS 25.123 [2] clauses 7.1.1. and A.7.1.1

8.5.1.3. Test purpose

To verify that the UE meets the minimum requirement.

8.5.1.4 Method of test

8.5.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.5.1.1 and table 8.5.1.2. The test consists of two successive time periods, with a time duration of T1and T2 respectively. At the start of time duration T1, the UE shall transmit with the Uplink Timing Advance value set to zero, i.e. Timing Advance disabled.

During time period T1, UTRAN shall send an Uplink Physical Channel control message with activation time at the beginning of T2. The Uplink Physical Channel Control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T2 is greater than or equal to the RRC procedure delay as defined in [9].

Table 8.5.1.1: General test parameters for Timing Advance test

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Timing Advance value		0	IE “Uplink timing advance control” value disabled.
Final condition	Timing Advance value		5	IE “Uplink timing advance” value set to 5.
Monitored cell list size			6 TDD neighbors on Channel 1	
T_{SI}		S	1.28	The value shall be used for all cells in the test.
T1		S	5	
T2		S	5	

Table 8.5.1.2: Cell specific test parameters for Timing Advance test

Parameter	Unit	Cell 1			
DL timeslot number		0		2	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1			
PCCPCH_Ec/Ior	dB	-3		n.a.	
SCH_Ec/Ior	dB	-9		n.a.	
SCH_t_{offset}	dB	0		n.a.	
DPCH_Ec/Ior	dB	n.a.		Note 1	
OCNS_Ec/Ior	dB	-3,12		Note 2	
$\hat{I}_{or}/I_{oc}$	dB	3			
I_{oc}	dBm/ 3,84 MHz	-70			
Propagation Condition		AWGN			
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior .					

8.5.1.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) At the start of time interval T1, the SS shall transmit an UPLINK PHYSICAL CHANNEL CONTROL message with timing advance disabled

5) During the interval T1, the SS shall transmit an UPLINK PHYSICAL CHANNEL CONTROL message with timing advance enabled and the timing advance value set to 5.

6) UE shall apply the signalled timing advance value.

7) After 10 seconds, the UE is switched off.

8) Repeat Step 1-7 [TBD] times

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

UPLINK PHYSICAL CHANNEL CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
PhyCH Information elements	
-CCTrCH Power Control Info	Not Present
-Alpha	Not Present
-Special Burst Scheduling	Not Present
-Timing Advance Control (10.3.6.96)	
-Choice *Timing Advance*	Disabled
-PRACH Constant Value	Not Present
-PUSCH Constant Value	Not Present
-UE positioning related parameters	Not Present

UPLINK PHYSICAL CHANNEL CONTROL message (step 5):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
PhyCH Information elements	
-CCTrCH Power Control Info	Not Present
-Alpha	Not Present
-Special Burst Scheduling	Not Present
-Timing Advance Control (10.3.6.96)	
-Choice *Timing Advance*	Enabled
-UL Timing Advance (10.3.6.9.95)	5
-Activation Time	At T2
-PRACH Constant Value	Not Present
-PUSCH Constant Value	Not Present
-UE positioning related parameters	Not Present

8.5.1.5 Test requirements

The UE shall apply the signalled Timing Advance value to the UL DPCH transmission timing at the designated activation time, i.e the beginning of time period T2. The Timing Advance adjustement accuracy shall be within ±0.5 chip.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA 10th-14th February 2003

Tdoc ⌘T1-030140

CR-Form-v7

CHANGE REQUEST

⌘ **TS 34.122 CR 129** ⌘**rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Timing Advance Test Case
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘ **A**	***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	Test Case 'UE Timing Advance' is missing from the current version of 34.122
Summary of change:	⌘	Addition of Test Case 'UE Timing Advance'
Consequences if not approved:	⌘	34.122 will be inconsistent with 25.123

Clauses affected:	⌘	8.5.1			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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

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

8.5 Timing Characteristics

8.5.1 UE Timing Advance

~~Void.~~

8.5.1.1 3,84 Mcps TDD Option

8.5.1.1.1 Definition and applicability

Timing advance is the correction to UE transmit timing required in order to avoid large delay spread at the Node B. The timing advance value is provided to the UE by UTRAN.

The requirements and this test apply to the TDD (3.84 Mcps option) UE.

8.5.1.1.2 Minimum requirement

The UE shall adjust the timing of its transmissions with an accuracy better than or equal to ±0.5 chip to the signalled timing advance value.

The normative reference for this requirement is TS 25.123 [2] clauses 7.1.1. and A.7.1.1

8.5.1.1.3. Test purpose

To verify that the UE meets the minimum requirement.

8.5.1.1.4 Method of test

8.5.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.5.1.1 and table 8.5.1.2. The test consists of two successive time periods, with a time duration of T1and T2 respectively. At the start of time duration T1, the UE shall transmit with the Uplink Timing Advance value set to zero, i.e. Timing Advance disabled.

During time period T1, UTRAN shall send an Uplink Physical Channel control message with activation time at the beginning of T2. The Uplink Physical Channel Control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T2 is greater than or equal to the RRC procedure delay as defined in [9].

Table 8.5.1.1: General test parameters for Timing Advance test

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Timing Advance value		0	IE "Uplink timing advance control" value disabled.
Final condition	Timing Advance value		5	IE "Uplink timing advance" value set to 5.
Monitored cell list size			6 TDD neighbors on Channel 1	
T_{SI}		S	1.28	The value shall be used for all cells in the test.
T1		S	5	
T2		S	5	

Table 8.5.1.2: Cell specific test parameters for Timing Advance test

Parameter	Unit	Cell 1			
DL timeslot number		0		2	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1			
PCCPCH_Ec/Ior	dB	-3		n.a.	
SCH_Ec/Ior	dB	-9		n.a.	
SCH_t_{offset}	dB	0		n.a.	
DPCH_Ec/Ior	dB	n.a.		Note 1	
OCNS_Ec/Ior	dB	-3,12		Note 2	
$\hat{I}_{or}/I_{oc}$	dB	3			
I_{oc}	dBm/ 3,84 MHz	-70			
Propagation Condition		AWGN			
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior .					

8.5.1.1.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) At the start of time interval T1, the SS shall transmit an UPLINK PHYSICAL CHANNEL CONTROL message with timing advance disabled

5) During the interval T1, the SS shall transmit an UPLINK PHYSICAL CHANNEL CONTROL message with timing advance enabled and the timing advance value set to 5.

6) UE shall apply the signalled timing advance value.

7) After 10 seconds, the UE is switched off.

8) Repeat Step 1-7 [TBD] times

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

UPLINK PHYSICAL CHANNEL CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
PhyCH Information elements	
-CCTrCH Power Control Info	Not Present
-Choice *TDD Option*	3.84 Mcps TDD
-Alpha	Not Present
-Special Burst Scheduling	Not Present
-Timing Advance Control (10.3.6.96)	
-Choice *Timing Advance*	Disabled
-PRACH Constant Value	Not Present
-PUSCH Constant Value	Not Present
-UE positioning related parameters	Not Present

UPLINK PHYSICAL CHANNEL CONTROL message (step 5):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
PhyCH Information elements	
-CCTrCH Power Control Info	Not Present
-Choice *TDD Option*	3.84 Mcps TDD
-Alpha	Not Present
-Special Burst Scheduling	Not Present
-Timing Advance Control (10.3.6.96)	
-Choice *Timing Advance*	Enabled
-Choice *TDD Option*	3.84 Mcps TDD
-UL Timing Advance (10.3.6.9.95)	5
-Activation Time	At T2
-PRACH Constant Value	Not Present
-PUSCH Constant Value	Not Present
-UE positioning related parameters	Not Present

8.5.1.1.5 Test requirements

The UE shall apply the signalled Timing Advance value to the UL DPCH transmission timing at the designated activation time, i.e the beginning of time period T2. The Timing Advance adjustement accuracy shall be within ±0.5 chip.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

8.5.1.2 1,28 Mcps TDD Option

Void.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

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CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **130** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Event-triggered reporting in AWGN propagation conditions test case
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘ **F**	***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	The test case for Event triggered reporting in AWGN propagation conditions is missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of Event triggered reporting in AWGN propagation conditions test case.
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.6.1.1			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	-			

8.6.1.1 Event triggered reporting in AWGN propagation conditions

~~Void.~~

8.6.1.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD UE.

8.6.1.1.2 Minimum requirement

The UE shall be able to identify a new detectable intra-frequency TDD cell belonging to the monitored set within $T_{identify\ intra}$ ms, where $T_{identify\ intra}$ = 800 ms.

When L3 filtering is used, an additional delay can be expected.

In CELL_DCH state, the UE shall be capable of performing P-CCPCH RSCP measurements for $X_{measurement\ intra}$ identified intra-frequency TDD cells of the monitored set with a measurement period for intra-frequency P-CCPCH RSCP measurements $T_{measurement\ period\ intra}$, where

$X_{measurement\ intra}$ = 6 (cells)

$T_{measurement\ period\ intra}$ = 200 ms

The UE physical layer shall be capable of reporting these measurements to higher layers with the measurement period $T_{measurement\ period\ intra}$.

If the UE has identified more than $X_{measurement\ intra}$ intra-frequency TDD cells, the UE shall perform measurements of all identified cells but the reporting rate of P-CCPCH RSCP measurements of cells from the UE physical layer to higher layers may be decreased.. The measurement accuracy for all measured cells shall be as specified in the section 9.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.1, 8.1.2.2.2 and A.8.1.1

8.6.1.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.6.1.1.4 Method of test

8.6.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.6.1.1.1 and 8.6.1.1.2. The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively. Three cells shall be present in the test, cell 1 being the serving cell and cell 2 and cell 3 being neighbour cells on the used frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The DL DPCH shall be transmitted in timeslot 2 and the UL DPCH shall be transmitted in timeslot 10. The TTI of the uplink DCCH shall be 20ms.

Table 8.6.1.1.1: General test parameters for Event 1G triggered reporting in AWGN propagation condition

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2, Cell 3	
Final condition	Active cell		Cell 1	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Threshold used frequency		dBm	-70	Applicable for Event 1G
Filter coefficient			0	
Monitored cell list size			12 TDD neighbours on Channel 1	
T1		s	6	
T2		s	6	
T3		s	6	

Table 8.6.1.1.2: Cell specific parameters for Event 1G triggered correct reporting in AWGN propagation condition

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
DL timeslot number		0			0			0		
UTRA RF Channel Number		Channel 1			Channel 1			Channel 1		
PCCPCH_Ec/Ior	dB	-3			-3			-3		
SCH_Ec/Ior	dB	-9			-9			-9		
SCH_t_{offset}		0			5			10		
OCNS_Ec/Ior	dB	-3,12			-3,12			-3,12		
$\hat{I}_{or}/I_{oc}$	dB	7	5		5	7	-Inf	-Inf		7
PCCPCH RSCP	dBm	-66	-68		-68	-66	-Inf	-Inf		-66
I_{oc}	dBm / 3,84 MHz	-70								
Propagation Condition		AWGN								

8.6.1.1.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 6 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 240 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

7) After 6 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.

8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 3. The measurement reporting delay from the beginning of T3 shall be less than 840 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

9) After 6 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

10) Repeat steps 1-9 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
-CHOICE *sync case*	Case 2
-Timeslot	0
-Cell parameters ID	0
-SCTD indicator	FALSE
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity

Information Element/Group name	Value/Remark
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 2

MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 3
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD

-Primary CCPCH info (10.3.6.57) -CHOICE mode -Cell parameters ID	 TDD Set to Cell parameters ID of Cell 3

8.6.1.1.5 Test requirements

The UE shall send one Event 1G triggered measurement report for Cell 2 with a measurement reporting delay less than 240ms from the beginning of time period T2.

The UE shall send one Event 1G triggered measurement report for Cell 3 with a measurement reporting delay less than 840ms from the beginning of time period T3.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

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San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030142

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **131** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Addition of Event-triggered reporting in AWGN propagation conditions test case for UTRA TDD (3.84 Mcps Option)
Source:	⌘	T1-RF
Work item code:	⌘	
Date:	⌘	13/01/2003
Category:	⌘	**A**
Release:	⌘	Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	The test case for Event triggered reporting in AWGN propagation conditions is missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of Event triggered reporting in AWGN propagation conditions test case.
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.6.1.1

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

Other comments:	⌘	-

8.6.1.1 Event triggered reporting in AWGN propagation conditions

~~Void.~~

8.6.1.1.1 Definition and applicability

8.6.1.1.1.1 3,84 Mcps TDD Option

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD (3.84 Mcps option) UE.

8.6.1.1.1.2 1,28 Mcps TDD Option

Void.

8.6.1.1.2 Minimum requirement

8.6.1.1.2.1 3,84 Mcps TDD Option

The UE shall be able to identify a new detectable intra-frequency TDD cell belonging to the monitored set within $T_{identify\ intra}$ ms, where $T_{identify\ intra}$ = 800 ms.

When L3 filtering is used, an additional delay can be expected.

In CELL_DCH state, the UE shall be capable of performing P-CCPCH RSCP measurements for $X_{measurement\ intra}$ identified intra-frequency TDD cells of the monitored set with a measurement period for intra-frequency P-CCPCH RSCP measurements $T_{measurement\ period\ intra}$, where

$X_{measurement\ intra}$ = 6 (cells)

$T_{measurement\ period\ intra}$ = 200 ms

The UE physical layer shall be capable of reporting these measurements to higher layers with the measurement period $T_{measurement\ period\ intra}$.

If the UE has identified more than $X_{measurement\ intra}$ intra-frequency TDD cells, the UE shall perform measurements of all identified cells but the reporting rate of P-CCPCH RSCP measurements of cells from the UE physical layer to higher layers may be decreased.. The measurement accuracy for all measured cells shall be as specified in the section 9.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.1, 8.1.2.2.2 and A.8.1.1

8.6.1.1.2.2 1.28 Mcps TDD Option

Void.

8.6.1.1.3 Test purpose

8.6.1.1.3.1 3,84 Mcps TDD Option

To verify that the UE meets the minimum requirement.

8.6.1.1.3.2 1.28 Mcps TDD Option

Void.

8.6.1.1.4 Method of test

8.6.1.1.4.1 3,84 Mcps TDD Option

8.6.1.1.4.1.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.6.1.1.1 and 8.6.1.1.2. The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively. Three cells shall be present in the test, cell 1 being the serving cell and cell 2 and cell 3 being neighbour cells on the used frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The DL DPCH shall be transmitted in timeslot 2 and the UL DPCH shall be transmitted in timeslot 10. The TTI of the uplink DCCH shall be 20ms.

Table 8.6.1.1.1: General test parameters for Event 1G triggered reporting in AWGN propagation condition

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2, Cell 3	
Final condition	Active cell		Cell 1	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Threshold used frequency		dBm	-70	Applicable for Event 1G
Filter coefficient			0	
Monitored cell list size			12 TDD neighbours on Channel 1	
T1		s	6	
T2		s	6	
T3		s	6	

Table 8.6.1.1.2: Cell specific parameters for Event 1G triggered correct reporting in AWGN propagation condition

Parameter	Unit	Cell 1			Cell 2			Cell 3		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
DL timeslot number		0			0			0		
UTRA RF Channel Number		Channel 1			Channel 1			Channel 1		
PCCPCH Ec/Ior	dB	-3			-3			-3		
SCH Ec/Ior	dB	-9			-9			-9		
SCH t_{offset}		0			5			10		
OCNS Ec/Ior	dB	-3,12			-3,12			-3,12		
$\hat{I}_{or}/I_{oc}$	dB	7	5		5	7	-Inf	-Inf		7
PCCPCH RSCP	dBm	-66	-68		-68	-66	-Inf	-Inf		-66
I_{oc}	dBm / 3,84 MHz	-70								
Propagation Condition		AWGN								

8.6.1.1.4.1.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 6 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 240 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

7) After 6 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.

8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 3. The measurement reporting delay from the beginning of T3 shall be less than 840 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

9) After 6 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

10) Repeat steps 1-9 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 2

MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 3
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 3

8.6.1.1.4.2 1.28 Mcps TDD Option

Void.

8.6.1.1.5 Test requirements

8.6.1.1.5.1 3,84 Mcps TDD Option

The UE shall send one Event 1G triggered measurement report for Cell 2 with a measurement reporting delay less than 240ms from the beginning of time period T2.

The UE shall send one Event 1G triggered measurement report for Cell 3 with a measurement reporting delay less than 840ms from the beginning of time period T3.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

8.6.1.1.5.2 1.28 Mcps TDD Option

Void.

3GPP TSG-T1 Meeting #18
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CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** 132 ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Addition of Event 1H and 1I triggered reporting in AWGN propagation condition test case for UTRA TDD
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**F** ***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	The test case for Event 1H and 1I triggered reporting in AWGN propagation conditions is missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of Event 1H and 1I triggered reporting in AWGN propagation conditions test case.
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.6.1.2

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

Other comments:	⌘	-

8.6.1.2 Event triggered 1H and 1I reporting in AWGN propagation conditions

~~Void.~~

8.6.1.2.1 Definition and applicability

In the event triggered reporting, the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD UE.

8.6.1.2.2 Minimum requirement

In CELL_DCH state the measurement period for intra frequency Timeslot ISCP measurements on arbitrary DL timeslots, including Beacon timeslots is 400 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing Timeslot ISCP measurements for a total of 10 different combinations of an arbitrary DL timeslot and an intra-frequency cell, including the current serving cell.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.2.A and A.8.1.2

8.6.1.2.3 Test purpose

To verify that the UE meets the minimum requirement.

8.6.1.2.4 Method of test

8.6.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Tables 8.6.1.2.1, 8.6.1.2.2 and 8.6.1.2.3. The test consists of five successive time periods, with a time duration of T1, T2, T3, T4 and T5 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

In the measurement control information it shall be indicated to the UE that event-triggered reporting with event 1H and event 1I shall be used and that Timeslot ISCP and P-CCPCH RSCP shall be reported together with event 1H and 1I. Measurement control information shall be sent to the UE before the beginning of time period T1.

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 10. In addition, timeslots 3 and 4 shall be allocated as DL timeslots. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.6.1.2.1: General test parameters for correct event 1H and event 1I reporting in AWGN propagation condition

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 1	
HCS			Not used	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Timeslot list cell 1			2, 3, 4	Timeslot numbers in IE “Cell info” for Cell 1
Timeslot list cell 2			4	Timeslot numbers in IE “Cell info” for Cell 2
Threshold used frequency		dBm	-68	Threshold 1 applicable for event 1H, cell 1 timeslots 2, 4 and cell 2 timeslot 4
Threshold used frequency		dBm	-73	Threshold 2 applicable for event 1H, cell 1 timeslots 2, 3, 4 and cell 2 timeslot 4
Threshold used frequency		dBm	-67	Applicable for event 1I, cell 1 timeslots 2, 4 and cell 2 timeslot 4
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	Cell 2 shall belong to the monitored set
T1		s	5	
T2		s	5	
T3		s	5	
T4		s	5	
T5		s	5	

Table 8.6.1.2.2: Cell 1 specific parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit	Cell 1									
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRA RF Channel Number		Channel 1									
DL timeslot number		**0**					**2**				
PCCPCH_Ec/Ior	dB	-3					n.a.				
SCH_Ec/Ior	dB	-9					n.a.				
SCH_t_{offset}	dB	5					n.a.				
DPCH_Ec/Ior	dB	n.a.					Note 1				
OCNS_Ec/Ior	dB	-3,12					Note 2				
$\hat{I}_{or}/I_{oc}$	dB	4					4				
PCCPCH RSCP	dBm	-69					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
DL timeslot number		**3**					**4**				
PCCPCH_Ec/Ior	dB	n.a.					n.a.				
SCH_Ec/Ior	dB	n.a.					n.a.				
SCH_t_{offset}	dB	n.a.					n.a.				
DPCH_Ec/Ior	dB	n.a.					n.a.				
OCNS_Ec/Ior	dB	0					0				
$\hat{I}_{or}/I_{oc}$	dB	3					0				6
PCCPCH RSCP	dBm	n.a.					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior											

Table 8.6.1.2.3: Cell 2 specific parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit	Cell 2									
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRA RF Channel Number		Channel 1									
DL timeslot number		**0**					**2**				
PCCPCH_Ec/Ior	dB	-3					n.a.				
SCH_Ec/Ior	dB	-9					n.a.				
SCH_t_{offset}	dB	10					n.a.				
DPCH_Ec/Ior	dB	n.a.					n.a.				
OCNS_Ec/Ior	dB	-3,12					0				
$\hat{I}_{or}/I_{oc}$	dB	1					0	6	0		
PCCPCH RSCP	dBm	-72					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
DL timeslot number		**3**					**4**				
PCCPCH_Ec/Ior	dB	n.a.					n.a.				
SCH_Ec/Ior	dB	n.a.					n.a.				
SCH_t_{offset}	dB	n.a.					n.a.				
DPCH_Ec/Ior	dB	n.a.					n.a.				
OCNS_Ec/Ior	dB	0					0				
$\hat{I}_{or}/I_{oc}$	dB	3					6			0	
PCCPCH RSCP	dBm	n.a.					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									

8.6.1.2.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T2 shall be less than 480 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

7) After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.

8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

9) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4.

10) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

11) After 5 seconds from the beginning of T4, the SS shall switch the power settings from T4 to T5.

12) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 2 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

13) After 5 seconds from the beginning of T5, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

14) Repeat steps 1-13 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Timeslot ISCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
-CHOICE *sync case*	Case 2
-Timeslot	0
-Cell parameters ID	Set to Cell parameters ID of cell 1
-SCTD indicator	FALSE
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	-68
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms

Information Element/Group name	Value/Remark
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
-CHOICE *sync case*	Case 2
-Timeslot	0
-Cell parameters ID	Set to Cell parameters ID of cell 1
-SCTD indicator	FALSE
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	-73
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1I
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
-CHOICE *sync case*	Case 2
-Timeslot	0
-Cell parameters ID	Set to Cell parameters ID of cell 1
-SCTD indicator	FALSE
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	-67
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present

-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1I
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1H
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

MEASUREMENT REPORT message (step 10)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4

-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1H
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

MEASUREMENT REPORT message (step 12)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	1
-Timeslot ISCP	Checked that this IE is present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1I
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2

8.6.1.2.5 Test requirements

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T2.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T3.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T4.

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T5.

The UE shall not send event 1H or 1I triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030144

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **133** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Addition of Event 1H and 1I triggered reporting in AWGN propagation condition test case for UTRA TDD (3.84 Mcps Option)
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**A** ***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	The test case for Event 1H and 1I triggered reporting in AWGN propagation conditions is missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of Event 1H and 1I triggered reporting in AWGN propagation conditions test case.
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.6.1.2

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

Other comments:	⌘	-

8.6.1.2 Event triggered 1H and 1I reporting in AWGN propagation conditions

~~Void.~~

8.6.1.2.1 Definition and applicability

8.6.1.2.1.1 3,84 Mcps TDD Option

In the event triggered reporting, the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD (3.84 Mcps option) UE.

8.6.1.2.1.2 1,28 Mcps TDD Option

Void.

8.6.1.2.2 Minimum requirement

8.6.1.2.2.1 3,84 Mcps TDD Option

In CELL_DCH state the measurement period for intra frequency Timeslot ISCP measurements on arbitrary DL timeslots, including Beacon timeslots is 400 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing Timeslot ISCP measurements for a total of 10 different combinations of an arbitrary DL timeslot and an intra-frequency cell, including the current serving cell.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.2.A and A.8.1.2

8.6.1.2.2.2 1.28 Mcps TDD Option

Void.

8.6.1.2.3 Test purpose

8.6.1.2.3.1 3,84 Mcps TDD Option

To verify that the UE meets the minimum requirement.

8.6.1.2.3.2 1.28 Mcps TDD Option

Void.

8.6.1.2.4 Method of test

8.6.1.2.4.1 3,84 Mcps TDD Option

8.6.1.2.4.1.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Tables 8.6.1.2.1, 8.6.1.2.2 and 8.6.1.2.3. The test consists of five successive time periods, with a time duration of T1, T2, T3, T4 and T5 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

In the measurement control information it shall be indicated to the UE that event-triggered reporting with event 1H and event 1I shall be used and that Timeslot ISCP and P-CCPCH RSCP shall be reported together with event 1H and 1I. Measurement control information shall be sent to the UE before the beginning of time period T1.

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 10. In addition, timeslots 3 and 4 shall be allocated as DL timeslots. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.

Table 8.6.1.2.1: General test parameters for correct event 1H and event 1I reporting in AWGN propagation condition

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 1	
HCS			Not used	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Timeslot list cell 1			2, 3, 4	Timeslot numbers in IE “Cell info” for Cell 1
Timeslot list cell 2			4	Timeslot numbers in IE “Cell info” for Cell 2
Threshold used frequency		dBm	-68	Threshold 1 applicable for event 1H, cell 1 timeslots 2, 4 and cell 2 timeslot 4
Threshold used frequency		dBm	-73	Threshold 2 applicable for event 1H, cell 1 timeslots 2, 3, 4 and cell 2 timeslot 4
Threshold used frequency		dBm	-67	Applicable for event 1I, cell 1 timeslots 2, 4 and cell 2 timeslot 4
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	Cell 2 shall belong to the monitored set
T1		s	5	
T2		s	5	
T3		s	5	
T4		s	5	
T5		s	5	

Table 8.6.1.2.2: Cell 1 specific parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit	Cell 1									
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRA RF Channel Number		Channel 1									
DL timeslot number		**0**					**2**				
PCCPCH_Ec/Ior	dB	-3					n.a.				
SCH_Ec/Ior	dB	-9					n.a.				
SCH_t_{offset}	dB	5					n.a.				
DPCH_Ec/Ior	dB	n.a.					Note 1				
OCNS_Ec/Ior	dB	-3,12					Note 2				
$\hat{I}_{or}/I_{oc}$	dB	4					4				
PCCPCH RSCP	dBm	-69					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
DL timeslot number		**3**					**4**				
PCCPCH_Ec/Ior	dB	n.a.					n.a.				
SCH_Ec/Ior	dB	n.a.					n.a.				
SCH_t_{offset}	dB	n.a.					n.a.				
DPCH_Ec/Ior	dB	n.a.					n.a.				
OCNS_Ec/Ior	dB	0					0				
$\hat{I}_{or}/I_{oc}$	dB	3					0				6
PCCPCH RSCP	dBm	n.a.					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior											

Table 8.6.1.2.3: Cell 2 specific parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit	Cell 2									
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRA RF Channel Number		Channel 1									
DL timeslot number		**0**					**2**				
PCCPCH_Ec/Ior	dB	-3					n.a.				
SCH_Ec/Ior	dB	-9					n.a.				
SCH_t_{offset}	dB	10					n.a.				
DPCH_Ec/Ior	dB	n.a.					n.a.				
OCNS_Ec/Ior	dB	-3,12					0				
$\hat{I}_{or}/I_{oc}$	dB	1					0	6	0		
PCCPCH RSCP	dBm	-72					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
DL timeslot number		**3**					**4**				
PCCPCH_Ec/Ior	dB	n.a.					n.a.				
SCH_Ec/Ior	dB	n.a.					n.a.				
SCH_t_{offset}	dB	n.a.					n.a.				
DPCH_Ec/Ior	dB	n.a.					n.a.				
OCNS_Ec/Ior	dB	0					0				
$\hat{I}_{or}/I_{oc}$	dB	3					6			0	
PCCPCH RSCP	dBm	n.a.					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									

8.6.1.2.4.1.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T2 shall be less than 480 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

7) After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.

8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

9) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4.

10) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

11) After 5 seconds from the beginning of T4, the SS shall switch the power settings from T4 to T5.

12) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 2 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

13) After 5 seconds from the beginning of T5, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

14) Repeat steps 1-13 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Timeslot ISCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	-68
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present

Information Element/Group name	Value/Remark
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	-73
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1I
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	-67
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1I
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1

Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1H
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

MEASUREMENT REPORT message (step 10)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1H
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

MEASUREMENT REPORT message (step 12)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1

Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	1
-Timeslot ISCP	Checked that this IE is present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1I
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2

8.6.1.2.4.2 1.28 Mcps TDD Option

Void.

8.6.1.2.5 Test requirements

8.6.1.2.5.1 3,84 Mcps TDD Option

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T2.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T3.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T4.

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 480 ms from the beginning of time period T5.

The UE shall not send event 1H or 1I triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

8.6.1.2.5.2 1.28 Mcps TDD Option

Void.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

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CHANGE REQUEST

⌘ **34.122** **CR** **134** ⌘**rev** **-** ⌘ Current version: **3.10.0** ⌘

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

Title:	⌘	Addition of Correct reporting of neighbours in fading propagation condition test case for UTRA TDD
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**F** ***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	The test case for Correct reporting of neighbours in fading propagation condition is missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of Correct reporting of neighbours in fading propagation conditions test case.
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.6.1.3

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

Other comments:	⌘	-

8.6.1.3 Correct reporting of neighbours in fading propagation conditions

8.6.1.3.1 Definition and applicability

In the event triggered reporting, the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD UE.

8.6.1.3.2 Minimum requirement

The requirements are the same as in sub clause 8.6.1.1.2

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.2.1, 8.1.2.2.2 and A.8.1.3

8.6.1.3.3 Test purpose

To verify that the UE meets the minimum requirements and also verify that the UE performs sufficient layer 1 filtering of the measurements. The test is performed in fading propagation conditions.

8.6.1.3.4 Method of test

8.6.1.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Tables 8.6.1.3.1 and 8.6.1.3.2. The test consists of one time period with time duration of T1. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G.

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The TTI of the UL DCCH shall be 20ms.

Table 8.6.1.3.1: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 1	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	200	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	Sent before the beginning of time period T1
T1		s	200	

Table 8.6.1.3.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T1	T1	T1
DL timeslot number		**0**	**8**	**0**	**8**
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3	n.a.	-3	n.a.
SCH_Ec/Ior	dB	-9	-9	-9	-9
SCH_t_{offset}		0	0	2	2
PICH_Ec/Ior	dB	n.a.	-3	n.a.	-3
OCNS_Ec/Ior	dB	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	7	7	2	2
PCCPCH RSCP	dBm	-66	n.a.	-71	n.a.
I_{oc}	dBm/ 3,84 MHz	-70			
Propagation Condition		Case 4 as specified in Annex D~~TS25.102 Annex B~~			

8.6.1.3.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 200 seconds from the beginning of T1, the UE is switched off.

6) Repeat steps 1-5 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
-CHOICE *sync case*	Case 2
-Timeslot	0
-Cell parameters ID	0
-SCTD indicator	FALSE
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity

Information Element/Group name	Value/Remark
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

8.6.1.3.5 Test requirements

The number of Event 1G triggered measurement reports during time period T1 shall be less than 60.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

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CHANGE REQUEST

⌘ **34.122** **CR** **135** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Addition of Correct reporting of neighbours in fading propagation condition test case for UTRA TDD (3.84 Mcps Option)
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**A** ***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	The test case for Correct reporting of neighbours in fading propagation condition is missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of Correct reporting of neighbours in fading propagation conditions test case.
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.6.1.3

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

Other comments:	⌘	-

8.6.1.3 Correct reporting of neighbours in fading propagation conditions

8.6.1.3.1 3,84 Mcps TDD Option

8.6.1.3.1.1 Definition and applicability

In the event triggered reporting, the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD (3.84 Mcps option) UE.

8.6.1.3.1.2 Minimum requirement

The requirements are the same as in sub clause 8.6.1.1.2

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.2.2.1, 8.1.2.2.2 and A.8.1.3

8.6.1.3.1.3 Test purpose

To verify that the UE meets the minimum requirements and also verify that the UE performs sufficient layer 1 filtering of the measurements. The test is performed in fading propagation conditions.

8.6.1.3.1.4 Method of test

8.6.1.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Tables 8.6.1.3.1 and 8.6.1.3.2. The test consists of one time period with time duration of T1. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G.

The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The TTI of the UL DCCH shall be 20ms.

Table 8.6.1.3.1: General test parameters for correct reporting of neighbours in fading propagation condition

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 1	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	200	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	Sent before the beginning of time period T1
T1		s	200	

Table 8.6.1.3.2: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	T1	T1	T1
DL timeslot number		**0**	**8**	**0**	**8**
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3	n.a.	-3	n.a.
SCH_Ec/Ior	dB	-9	-9	-9	-9
SCH_t_{offset}		0	0	2	2
PICH_Ec/Ior	dB	n.a.	-3	n.a.	-3
OCNS_Ec/Ior	dB	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	7	7	2	2
PCCPCH RSCP	dBm	-66	n.a.	-71	n.a.
I_{oc}	dBm/ 3,84 MHz	-70			
Propagation Condition		Case 4 as specified in Annex D~~TS25.102 Annex B~~			

8.6.1.3.1.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 200 seconds from the beginning of T1, the UE is switched off.

6) Repeat steps 1-5 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

8.6.1.3.1.5 Test requirements

The number of Event 1G triggered measurement reports during time period T1 shall be less than 60.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

8.6.1.3.2 1.28 Mcps TDD Option

Void.

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San Antonio, Texas, USA, February 10th-14th 2003

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CHANGE REQUEST

⌘ **34.122** **CR** **136** ⌘**rev** **-** ⌘ Current version: **3.10.0** ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Addition of Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition test case for UTRA TDD
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**F** ***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	The test case for Correct reporting of TDD inter-frequency neighbours in AWGN propagation conditions is missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of Correct reporting of TDD inter-frequency neighbours in AWGN propagation conditions test case.
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.6.2.1

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

Other comments:	⌘	-

8.6.2 TDD inter frequency Measurements

8.6.2.1 Correct reporting of neighbours in AWGN propagation condition

~~Void.~~

8.6.2.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD UE.

8.6.2.1.2 Minimum requirement

When idle intervals are used for inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within

$$T_{identify\ inter} = Max\left\{5000, N_{basic\ identify\ TDD\ inter} \cdot \frac{T_{measurement\ period\ TDD\ inter}}{N_{TDD\ inter}} \cdot N_{Freq}\right\} ms$$

If the UE does not require idle intervals to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

When idle intervals are used for TDD inter frequency measurements, the UE shall be capable of performing P-CCPCH RSCP measurements for $X_{measurement\ TDD\ inter}$ inter-frequency TDD cells per TDD frequency of the monitored set.

The UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in section 9 and with a measurement period of $T_{measurement\ inter}$.

$$T_{measurement\ inter} = Max\left\{T_{measurement\ period\ TDD\ inter}, N_{basic\ measurement\ TDD\ inter} \cdot \frac{T_{measurement\ period\ TDD\ inter}}{N_{TDD\ inter}} \cdot N_{Freq}\right\} ms$$

If the UE does not require idle intervals to perform TDD inter-frequency measurements, the measurement period for inter frequency P-CCPCH RSCP measurements shall be 480 ms.

Where,

- $X_{measurement\ TDD\ inter}$ = 6 (cells)
- $T_{measurement\ period\ inter}$ = 480 ms. The time period used for calculating the measurement period $T_{measurement\ inter}$ for inter frequency P-CCPCH RSCP measurements.
- $N_{TDD\ inter}$: This is the available number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period $T_{TDD\ inter}$. The UE shall consider that a measurement opportunity on a Beacon timeslot of an inter-frequency TDD cell is provided if an idle interval of length equal to or greater than 3 timeslots less 2*0.5 ms implementation margin for frequency switching per idle interval completely overlaps in time with the Beacon timeslot of the inter-frequency TDD cell.
- $N_{basic\ identify\ TDD\ inter}$ = 80. This is a number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period used in the inter frequency TDD equation where the maximum allowed time for the UE to identify a new detectable inter-frequency TDD cell is defined.

$N_{basic\_measurement\_TDD\ inter}$ = 5. This is a number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period $T_{TDD\ inter}$ used in the inter-frequency TDD equation where the measurement period for inter-frequency P-CCPCH RSCP measurements is defined.

$N_{Freq\ TDD}$: This is the number of TDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{identify\ inter}$ defined in 25.123 [2]. When L3 filtering is used, an additional delay can be expected.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.3.1, 8.1.2.3.2 and A.8.2.1

8.6.2.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.6.2.1.4 Method of test

8.6.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.6.2.1.1 and 8.6.2.1.2. The test consists of 2 successive time periods, with a time duration T1 and T2. Two cells shall be present in the test, cell 1 being the serving cell and cell 2 being a UTRA TDD neighbour cell on the unused frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. The TTI of the uplink DCCH shall be 20 ms.

Table 8.6.2.1.1: General test parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition

Parameter		Unit	Value	Comment
DPCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in Annex C~~TS 25.102 annex A.2.2~~
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	UTRA TDD cell
	Neighbour cell		Cell 2	UTRA TDD cell
Threshold non used frequency		dB	-71	Applicable for event 2C
Hysteresis		dB	0	Applicable for event 2C
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			24 on channel 1 16 on channel 2	
T1		s	10	
T2		s	10	

Table 8.6.2.1.2: Cell specific parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0	15	15	15	15
PICH_Ec/Ior				-3	-3			-3	-3
OCNS		-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	3	3	3	3	-Infinity	9	-Infinity	9
I_{oc}	dBm/3.84 MHz	-70							
PCCPCH_RSCP	dB	-70	-70			-Infinity	-64		
Propagation Condition		AWGN							

8.6.2.1.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2c for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5080 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

7) After 10 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

8) Repeat steps 1-7 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE *inter-frequency cell removal*	No inter-frequency cells removed
-New inter-frequency cells	1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2
-Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE Sync case	2
-Timeslot	0
-cell parameters ID	Set to cell parameters ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2 as described in Table 8.6.2.1.2
-Timesllot list	Not Present
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE *reporting critera*	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting Cell Status (10.3..61)	

Information Element/Group name	Value/Remark
-CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used frequency
-Maximum number of reported cells	3
-Parameters required for each non-used frequenc	
- Threshold non-used frequency	-71
- W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2
-CHOICE mode	TDD
-Primary CCPCH Info	
-CHOICE mode	TDD
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

8.6.2.1.5 Test requirements

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 5080ms from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

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CHANGE REQUEST

⌘ **34.122** **CR** **137** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Addition of Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition test case for UTRA TDD (3.84 Mcps Option)
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**A** ***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	The test case for Correct reporting of TDD inter-frequency neighbours in AWGN propagation conditions is missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of Correct reporting of TDD inter-frequency neighbours in AWGN propagation conditions test case.
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.6.2.1

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

Other comments:	⌘	-

8.6.2 TDD inter frequency Measurements

8.6.2.1 Correct reporting of neighbours in AWGN propagation condition

~~Void.~~

8.6.2.1.1 Definition and applicability

8.6.2.1.1.1 3,84 Mcps TDD Option

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the TDD (3.84 Mcps option) UE.

8.6.2.1.1.2 1,28 Mcps TDD Option

Void.

8.6.2.1.2 Minimum requirement

8.6.2.1.2.1 3,84 Mcps TDD Option

When idle intervals are used for inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within

$$T_{identify\ inter} = Max\left\{ 5000, N_{basic\ identify\ TDD\ inter} \cdot \frac{T_{measurement\ period\ TDD\ inter}}{N_{TDD\ inter}} \cdot N_{Freq} \right\} ms$$

If the UE does not require idle intervals to perform inter-frequency TDD measurements, the UE shall be able to identify a new detectable inter-frequency TDD cell belonging to the monitored set within 5000 ms.

When idle intervals are used for TDD inter frequency measurements, the UE shall be capable of performing P-CCPCH RSCP measurements for $X_{measurement\ TDD\ inter}$ inter-frequency TDD cells per TDD frequency of the monitored set.

The UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in section 9 and with a measurement period of $T_{measurement\ inter}$.

$$T_{measurement\ inter} = Max\left\{ T_{measurement\ period\ TDD\ inter}, N_{basic\ measurement\ TDD\ inter} \cdot \frac{T_{measurement\ period\ TDD\ inter}}{N_{TDD\ inter}} \cdot N_{Freq} \right\} ms$$

If the UE does not require idle intervals to perform TDD inter-frequency measurements, the measurement period for inter frequency P-CCPCH RSCP measurements shall be 480 ms.

Where,

- $X_{measurement\ TDD\ inter}$ = 6 (cells)
- $T_{measurement\_period\ inter}$ = 480 ms. The time period used for calculating the measurement period $T_{measurement\_inter}$ for inter frequency P-CCPCH RSCP measurements.
- N_{TDD_inter}: This is the available number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period $T_{TDD\ inter}$. The UE shall consider that a measurement opportunity on a Beacon timeslot of an inter-frequency TDD cell is provided if an idle interval of length equal to or greater than 3

timeslots less 2*0.5 ms implementation margin for frequency switching per idle interval completely overlaps in time with the Beacon timeslot of the inter-frequency TDD cell.

$N_{basic\_identify\_TDD\ inter}$ = 80. This is a number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period used in the inter frequency TDD equation where the maximum allowed time for the UE to identify a new detectable inter-frequency TDD cell is defined.

$N_{basic\_measurement\_TDD\ inter}$ = 5. This is a number of measurement opportunities for a Beacon timeslot of an inter-frequency TDD cell during the time period $T_{TDD\ inter}$ used in the inter-frequency TDD equation where the measurement period for inter-frequency P-CCPCH RSCP measurements is defined.

$N_{Freq\ TDD}$: This is the number of TDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{identify\ inter}$ defined in 25.123 [2]. When L3 filtering is used, an additional delay can be expected.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.3.1, 8.1.2.3.2 and A.8.2.1

8.6.2.1.2.2 1.28 Mcps TDD Option

Void.

8.6.2.1.3 Test purpose

8.6.2.1.3.1 3,84 Mcps TDD Option

To verify that the UE meets the minimum requirement.

8.6.2.1.3.2 1.28 Mcps TDD Option

Void.

8.6.2.1.4 Method of test

8.6.2.1.4.1 3,84 Mcps TDD Option

8.6.2.1.4.1.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.6.2.1.1 and 8.6.2.1.2. The test consists of 2 successive time periods, with a time duration T1 and T2. Two cells shall be present in the test, cell 1 being the serving cell and cell 2 being a UTRA TDD neighbour cell on the unused frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. The TTI of the uplink DCCH shall be 20 ms.

Table 8.6.2.1.1: General test parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition

Parameter		Unit	Value	Comment
DPCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in Annex C~~TS 25.102 annex A.2.2~~
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	UTRA TDD cell
	Neighbour cell		Cell 2	UTRA TDD cell
Threshold non used frequency		dB	-71	Applicable for event 2C
Hysteresis		dB	0	Applicable for event 2C
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			24 on channel 1 16 on channel 2	
T1		s	10	
T2		s	10	

Table 8.6.2.1.2: Cell specific parameters for Correct reporting of TDD inter-frequency neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		0		8		0		8	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0	15	15	15	15
PICH_Ec/Ior				-3	-3			-3	-3
OCNS		-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	3	3	3	3	-Infinity	9	-Infinity	9
I_{oc}	dBm/3.84 MHz	-70							
PCCPCH_RSCP	dB	-70	-70			-Infinity	-64		
Propagation Condition		AWGN							

8.6.2.1.4.1.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2c for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5080 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

7) After 10 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

8) Repeat steps 1-7 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE *inter-frequency cell removal*	No inter-frequency cells removed
-New inter-frequency cells	1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2
-Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE TDD option	3.84 Mcps TDD
-CHOICE Sync case	2
-Timeslot	0
-cell parameters ID	Set to cell parameters ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2 as described in Table 8.6.2.1.2
-Timesllot list	Not Present
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE *reporting critera*	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms

Information Element/Group name	Value/Remark
-Reporting Cell Status (10.3..61)	
-CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used frequency
-Maximum number of reported cells	3
-Parameters required for each non-used frequenc	
- Threshold non-used frequency	-71
- W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2
-CHOICE mode	TDD
-Primary CCPCH Info	
-CHOICE mode	TDD
-CHOICE TDD Option	3.84 Mcps TDD
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

8.6.2.1.4.2 1.28 Mcps TDD Option

Void.

8.6.2.1.5 Test requirements

8.6.2.1.5.1 3.84 Mcps TDD Option

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 5080ms from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

8.6.2.1.5.2 1.28 Mcps TDD Option

Void.

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CHANGE REQUEST

⌘ **34.122** **CR** 138 ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Addition of Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition test case for UTRA TDD
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**F** ***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	The test case for Correct reporting of FDD inter-frequency neighbours in AWGN propagation conditions is missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of Correct reporting of FDD inter-frequency neighbours in AWGN propagation conditions test case.
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.6.3.1

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

Other comments:	⌘	-

8.6.3 FDD measurements

8.6.3.1 Correct reporting of FDD neighbours in AWGN propagation condition

~~Void.~~

8.6.3.1.1 Definition and applicability

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the combined FDD and TDD UE.

8.6.3.1.2 Minimum requirement

When idle intervals are used for inter-frequency FDD measurements, the UE shall be able to identify a new detectable inter-frequency FDD cell belonging to the monitored set within

$$T_{identify\ FDD\ inter} = Max\left\{5000, T_{basic\ identify\ FDD\ inter} \cdot \frac{T_{measurement\ period\ FDD\ inter}}{T_{FDD\ inter}} \cdot N_{Freq}\right\} ms$$

If the UE does not require idle intervals to perform FDD inter-frequency measurements, the UE shall be able to identify a new detectable inter-frequency FDD cell belonging to the monitored set within 5000 ms.

When L3 filtering is used an additional delay can be expected.

An inter-frequency FDD cell shall be considered detectable, when CPICH Ec/Io > -20 dB, SCH_Ec/Io > -17 dB and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code.

When idle intervals are used for FDD inter frequency measurements, the UE physical layer shall be capable of reporting measurements to higher layers with measurement period given by

$$T_{measurement\ FDD\ inter} = Max\left\{T_{measurement\ period\ FDD\ inter}, T_{basic\ measurement\ FDD\ inter} \cdot \frac{T_{measurement\ period\ FDD\ inter}}{T_{FDD\ inter\ available}} \cdot N_{Freq,FDD}\right\} ms$$

If the UE does not require idle intervals to perform FDD inter-frequency measurements, the measurement period for inter frequency CPICH measurements shall be 480 ms.

The UE shall be capable of performing CPICH measurements for $X_{measurement\ FDD\ inter}$ inter-frequency FDD cells per frequency of the monitored set and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{measurement\ FDD\ inter}$.

$X_{basic\ measurement\ FDD\ inter}$ = 6 (cells)

$T_{measurement\_period\ FDD\ inter}$ = 480 ms. The time period used for calculating the measurement period $T_{measurement\_FDD\ inter}$ for inter frequency CPICH measurements.

$T_{FDD\_inter:\ available}$: This is the available time for measurements on inter-frequency FDD cells. $T_{FDD\ inter\ available}$ shall be derived from $T_{FDD\ inter}$ by assuming 2*0.5 ms implementation margin for frequency switching per idle interval and by only taking into account the remaining number of full timeslots per idle interval. Idle intervals smaller than 3 timeslots shall not be taken into account for calculating $T_{FDD\ inter\ available}$.

$T_{basic\_identify\_FDD\ inter}$ = 800 ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new detectable inter-frequency FDD cell is defined.

$T_{basic\_measurement\_FDD\ inter}$ = 50 ms. This is the time period used in the inter-frequency equation for defining the measurement period for inter frequency CPICH measurements.

N_{Freq}: This is the number of FDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{identify\ inter}$ defined in 25.123 [2]. When L3 filtering is used, an additional delay can be expected.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.4 and A.8.3.1

8.6.3.1.3 Test purpose

To verify that the UE meets the minimum requirement.

8.6.3.1.4 Method of test

8.6.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.6.3.1.1 and 8.6.3.1.2. The test consists of two successive time periods, with time durations of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA TDD cell and cell 2 being a UTRA FDD neighbour cells on the unused frequency.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used and that CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for cell 1. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. The TTI of the uplink DCCH shall be 20 ms.

Table 8.6.3.1.1: General test parameters for Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition

Parameter		Unit	Value	Comment
DPCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	UTRA TDD cell
	Neighbour cell		Cell 2	UTRA FDD cell
Final conditions	Active cell		Cell 1	
Threshold non used frequency		dB	-18	Applicable for event 2C
W non-used frequency			1	Applicable for event 2C
Hysteresis		dB	0	Applicable for event 2C
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on channel 1 6 FDD neighbours on channel 2	
T1		s	15	
T2		s	10	

Table 8.6.3.1.2: Cell specific parameters for Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2	
Timeslot Number		0		8		n.a	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2	
CPICH_Ec/Ior	dB	n.a.		n.a.		-10	
PCCPCH_Ec/Ior	dB	-3	-3			-12	
SCH_Ec/Ior	dB	-9	-9	-9	-9	-12	
SCH_t_{offset}		0	0	0	0	n.a.	
PICH_Ec/Ior				-3	-3	-15	
OCNS	dB	-4,28	-4,28	-4,28	-4,28	-0,941	
$\hat{I}_{or}/I_{oc}$	dB	3	3	3	3	-infinity	-1.8
I_{oc}	dBm/ 3.84 MHz	-70				-70	
CPICH_Ec/Io		n.a.				-infinity	-14
PCCPCH_RSCP	dB	-70	-70	-70	-70	n.a.	
Propagation Condition		AWGN				AWGN	

8.6.3.1.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 15 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5040 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

7) After 10 seconds from the beginning of T2, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

8) Repeat steps 1-7 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE *inter-frequency cell removal*	No inter-frequency cells removed
-New inter-frequency cells	1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE *mode*	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE *mode*	FDD
-Primary CPICH info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-Primary CPICH Tx Power	Set to Primary CPICH Tx Power of Cell2 described in Table 8.6.3.1.2
-Tx Diversity Indicator	FALSE
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE *reporting critera*	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	FDD
-Measurement quantity for frequency quality estimate	CPICH_Ec/No
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting Cell Status (10.3..61)	
-CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used frequency

Information Element/Group name	Value/Remark
-Maximum number of reported cells	3
-Parameters required for each non-used frequenc	
- Threshold non-used frequency	-18
- W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE *mode*	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	FDD
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Checked that this IE is present
-CPICH RSCP	Not Present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE *mode*	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-CHOICE mode	FDD
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

8.6.3.1.5 Test requirements

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 5040ms from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030150

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **139** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Addition of Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition test case for UTRA TDD (3.84 Mcps Option)
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**A** ***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	The test case for Correct reporting of FDD inter-frequency neighbours in AWGN propagation conditions is missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of Correct reporting of FDD inter-frequency neighbours in AWGN propagation conditions test case.
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.6.3.1

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

Other comments:	⌘	-

8.6.3 FDD measurements

8.6.3.1 Correct reporting of FDD neighbours in AWGN propagation condition

~~Void.~~

8.6.3.1.1 Definition and applicability

8.6.3.1.1.1 3,84 Mcps TDD Option

In the event triggered reporting period the measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit over the Uu interface. This requirement assumes that the measurement report is not delayed by other RRC signalling on the DCCH. This measurement reporting delay excludes a delay uncertainty resulted when inserting the measurement report to the TTI of the uplink DCCH. The delay uncertainty is twice the TTI of the uplink DCCH.

The requirements and this test apply to the combined FDD and TDD (3.84 Mcps option) UE.

8.6.3.1.1.2 1,28 Mcps TDD Option

Void.

8.6.3.1.2 Minimum requirement

8.6.3.1.2.1 3,84 Mcps TDD Option

When idle intervals are used for inter-frequency FDD measurements, the UE shall be able to identify a new detectable inter-frequency FDD cell belonging to the monitored set within

$$T_{identify\ FDD\ inter} = Max\left\{5000, T_{basic\ identify\ FDD\ inter} \cdot \frac{T_{measurement\ period\ FDD\ inter}}{T_{FDD\ inter}} \cdot N_{Freq}\right\} ms$$

If the UE does not require idle intervals to perform FDD inter-frequency measurements, the UE shall be able to identify a new detectable inter-frequency FDD cell belonging to the monitored set within 5000 ms.

When L3 filtering is used an additional delay can be expected.

An inter-frequency FDD cell shall be considered detectable, when CPICH Ec/Io > -20 dB, SCH_Ec/Io > -17 dB and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code.

When idle intervals are used for FDD inter frequency measurements, the UE physical layer shall be capable of reporting measurements to higher layers with measurement period given by

$$T_{measurement\ FDD\ inter} = Max\left\{T_{measurement\ period\ FDD\ inter}, T_{basic\ measurement\ FDD\ inter} \cdot \frac{T_{measurement\ period\ FDD\ inter}}{T_{FDD\ inter\ available}} \cdot N_{Freq,FDD}\right\} ms$$

If the UE does not require idle intervals to perform FDD inter-frequency measurements, the measurement period for inter frequency CPICH measurements shall be 480 ms.

The UE shall be capable of performing CPICH measurements for $X_{measurement\ FDD\ inter}$ inter-frequency FDD cells per frequency of the monitored set and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $T_{measurement\ FDD\ inter}$.

$X_{basic\ measurement\ FDD\ inter}$ = 6 (cells)

$T_{measurement\_period\ FDD\ inter}$ = 480 ms. The time period used for calculating the measurement period $T_{measurement\_FDD\ inter}$ for inter frequency CPICH measurements.

$T_{FDD\_inter:\ available}$: This is the available time for measurements on inter-frequency FDD cells. $T_{FDD\ inter\ available}$ shall be derived from $T_{FDD\ inter}$ by assuming 2*0.5 ms implementation margin for frequency switching per idle interval and by only taking into account the remaining number of full timeslots per idle interval. Idle intervals smaller than 3 timeslots shall not be taken into account for calculating $T_{FDD\ inter\ available}$.

$T_{basic\_identify\_FDD\ inter}$ = 800 ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new detectable inter-frequency FDD cell is defined.

$T_{basic\_measurement\_FDD\ inter}$ = 50 ms. This is the time period used in the inter-frequency equation for defining the measurement period for inter frequency CPICH measurements.

N_{Freq}: This is the number of FDD frequencies indicated in the inter frequency measurement control information.

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{identify\ inter}$ defined in 25.123 [2]. When L3 filtering is used, an additional delay can be expected.

The normative reference for this requirement is TS 25.123 [2] clauses 8.1.2.4 and A.8.3.1

8.6.3.1.2.2 1.28 Mcps TDD Option

Void.

8.6.3.1.3 Test purpose

8.6.3.1.3.1 3,84 Mcps TDD Option

To verify that the UE meets the minimum requirement.

8.6.3.1.3.2 1.28 Mcps TDD Option

Void.

8.6.3.1.4 Method of test

8.6.3.1.4.1 3,84 Mcps TDD Option

8.6.3.1.4.1.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in Table 8.6.3.1.1 and 8.6.3.1.2. The test consists of two successive time periods, with time durations of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA TDD cell and cell 2 being a UTRA FDD neighbour cells on the unused frequency.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used and that CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9].

The second Beacon timeslot shall be provided in timeslot 8 for cell 1. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. The TTI of the uplink DCCH shall be 20 ms.

Table 8.6.3.1.1: General test parameters for Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition

Parameter		Unit	Value	Comment
DPCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	UTRA TDD cell
	Neighbour cell		Cell 2	UTRA FDD cell
Final conditions	Active cell		Cell 1	
Threshold non used frequency		dB	-18	Applicable for event 2C
W non-used frequency			1	Applicable for event 2C
Hysteresis		dB	0	Applicable for event 2C
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on channel 1 6 FDD neighbours on channel 2	
T1		s	15	
T2		s	10	

Table 8.6.3.1.2: Cell specific parameters for Correct reporting of FDD inter-frequency neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2	
Timeslot Number		0		8		n.a	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2	
CPICH_Ec/Ior	dB	n.a.		n.a.		-10	
PCCPCH_Ec/Ior	dB	-3	-3			-12	
SCH_Ec/Ior	dB	-9	-9	-9	-9	-12	
SCH t_{offset}		0	0	0	0	n.a.	
PICH_Ec/Ior				-3	-3	-15	
OCNS	dB	-4,28	-4,28	-4,28	-4,28	-0,941	
$\hat{I}_{or}/I_{oc}$	dB	3	3	3	3	-infinity	-1.8
I_{oc}	dBm/ 3.84 MHz	-70				-70	
CPICH_Ec/Io		n.a.				-infinity	-14
PCCPCH_RSCP	dB	-70	-70	-70	-70	n.a.	
Propagation Condition		AWGN				AWGN	

8.6.3.1.4.1.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 15 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5040 ms. If the UE fails to report the event within the

required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

7) After 10 seconds from the beginning of T2, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

8) Repeat steps 1-7 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE *inter-frequency cell removal*	No inter-frequency cells removed
-New inter-frequency cells	1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE *mode*	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE *mode*	FDD
-Primary CPICH info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-Primary CPICH Tx Power	Set to Primary CPICH Tx Power of Cell2 described in Table 8.6.3.1.2
-Tx Diversity Indicator	FALSE
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE *reporting critera*	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	FDD
-Measurement quantity for frequency quality estimate	CPICH_Ec/No
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting Cell Status (10.3..61)	
-CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used frequency

Information Element/Group name	Value/Remark
-Maximum number of reported cells	3
-Parameters required for each non-used frequenc	
- Threshold non-used frequency	-18
- W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE *mode*	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	FDD
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Checked that this IE is present
-CPICH RSCP	Not Present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE *mode*	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-CHOICE mode	FDD
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

8.6.3.1.4.2 1.28 Mcps TDD Option

Void.

8.6.3.1.5 Test requirements

8.6.3.1.5.1 3,84 Mcps TDD Option

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 5040ms from the beginning of time period T2.

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

8.6.3.1.5.2 1.28 Mcps TDD Option

Void.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

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CHANGE REQUEST

⌘ **34.122** **CR** **140** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Corrections/Updates to TDD Cell Reselection and Handover Test Cases
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 15/01/2003
Category:	⌘	**F** ***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	Some test cases for TDD cell reselection and handover are inconsistent with 25.123
Summary of change:	⌘	Update existing test cases to correct for inconsistencies. Also updated message contents to remove 3,84 Mcps TDD option (not applicable to R99).
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.2.2.4, 8.3.1 and 8.3.2

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

Other comments: ⌘

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

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

8.2.2.4 Scenario 4: inter RAT cell re-selection

8.2.2.4.1 Definition and applicability

The cell re-selection delay is defined as the time from when the cell quality levels change to the moment when this change makes the UE reselect a better ranked cell, and starts to send LOCATION UPDATING REQUEST message to perform a Location update to the new cell.

This test is for the case where the UE camps on a TDD cell and reselects to a GSM cell.

The requirements and this test apply to UEs supporting both TDD and GSM.

8.2.2.4.2 Minimum requirement

The cell re-selection delay shall be less than 26 s + T_{BCCH}, where T_{BCCH} is the maximum time allowed to read BCCH data in the GSM cell.~~8 s when the DRX cycle length is 1,28 s. The cell selection parameters in the BCCH of the GSM cell in system info 3 and 4 are transmitted at least every second~~.

NOTE: The cell re-selection delay can be expressed as:

$$4 * T_{measureGSM} + T_{BCCH}$$

where:

$T_{measureGSM}$ Specified in Table 4.1 in sub clause 4.2.2.7.1 in [2].

T_{BCCH} Equal to 1.9 s, i.e. the maximum time allowed to read BCCH data when synchronised to a BCCH carrier from a GSM cell (specified in TS 45.005).

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The normative reference for this requirement is TS 25.123 [2] clauses 4.3.2.1 and A.4.2.4

8.2.2.4.3 Test purpose

This test verifies the UE meets the minimum requirement for the case where the UE camps on a TDD cell and reselects to a GSM cell.

8.2.2.4.4 Method of Test

8.2.2.4.4.1 Initial conditions

This scenario implies the presence of 1 TDD and 1 GSM cell as given in table 8.2.2.4.1, 8.2.2.4.2, and 8.2.2.4.3. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.4.1: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	TDD Cell
	Neighbour cell		Cell2	GSM Cell
Final condition	Active cell		Cell2	
DRX cycle length		s	1,28	UTRAN cell
BCCH repetition period (GSM cell)		s	1,87	In GSM the system information is scheduled according to an 8 x (51 x 8) cycle (i.e. a system information message is transmitted every 235 ms). The cell selection parameters in system info 3 and 4 are transmitted at least every second. (GSM 05.02)
T1		s	~~15~~45	
T2		s	~~15~~35	

Table 8.2.2.4.2: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
Timeslot Number		**0**		**8**	
		T1	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/Ior	DB	-3	-3		
SCH_Ec/Ior	DB	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0
PICH_Ec/Ior	DB			-3	-3
OCNS_Ec/Ior	DB	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	DB	3	-2	3	-2
I_{oc}	dBm/3, 84 MHz	–70		–70	
PCCPCH RSCP	DBm	-70	-75		
Propagation Condition		AWGN		AWGN	
Treselection	S	0			
$Ssearch_{RAT}$	DB	not sent			

Table 8.2.2.4.3: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	**T2**
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-~~80~~90	-~~70~~75
RXLEV_ACCESS_MIN	dBm	-100	
MS_TXPWR_MAX_CCH	dBm	30	

8.2.2.4.4.2 Procedure

a) The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST and LOCATION UPDATING REQUEST messages from the UE.

b) The UE is switched on.

c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.

d) After ~~15~~ 45 s, the parameters are changed as described for T2.

e) The SS waits for LOCATION UPDATING REQUEST messages from the UE.

f) After ~~15~~ 35 s, the parameters are changed as described for T1.

g) The SS waits for RRC CONNECTION REQUEST messages from the UE.

h) Repeat steps d) to g) [TBD] times.

8.2.2.4.4.2.2 Procedure

a) The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST and LOCATION UPDATING REQUEST messages from the UE.

b) The UE is switched on.

c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.

d) After 15 s, the parameters are changed as described for T2.

e) The SS waits for LOCATION UPDATING REQUEST messages from the UE.

f) After 15 s, the parameters are changed as described for T1.

g) The SS waits for RRC CONNECTION REQUEST messages from the UE.

h) Repeat steps d) to g) [TBD] times.

8.2.2.4.5 Test Requirements

1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).

2) In step e), the UE shall respond on cell 2 within ~~8~~ 27.9 s.

3) In step g), the UE shall respond on cell 1.

For the test to pass, the total number of fulfilled test requirements in step 2) shall be at least 90% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3 UTRAN Connected Mode Mobility

8.3.1 TDD/TDD Handover

8.3.1.1 Handover to intra-frequency cell

8.3.1.1.1 Definition and applicability

Handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH~~Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCH, excluding the RRC procedure delay as defined in [9].~~

The requirements and this test apply to the UTRA TDD UE.

8.3.1.1.2 Minimum requirement

The interruption time ~~hard handover delay~~ shall be less than 40 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/TDD intra-frequency handover is commanded, the interruption time shall be less than,

$T_{interrupt} = T_{offset} + T_{UL} + 30*F_{SFN} + 20*KC + 180*UC$ ms

where,

T_{offset} Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel

T_{UL} Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell

F_{SFN} Equal to 1 if SFN decoding is required and equal to 0 otherwise

KC Equal to 1 if a known target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

UC Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

An intra-frequency TDD target cell shall be considered as known by the UE, if either or both of the following conditions are true:

- the target cell has been measured during the last 5 seconds
- the UE has had a radio link connected to the target cell during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.1.

8.3.1.1.3 Test purpose

The purpose of this test is to verify the requirement for the intra-frequency handover delay in CELL_DCH state in the single carrier case.

8.3.1.1.4 Method of test

8.3.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1.1.1 and 8.3.1.1.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP and SFN-CFN observed timed difference shall be reported together with Event 1G. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 12.

Table 8.3.1.1.1: General test parameters for Handover to intra-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	
HCS			Not used	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	
T1		s	10	
T2		s	10	
T3		s	10	

Table 8.3.1.1.2: Cell specific test parameters for Handover to intra-frequency cell

Parameter	**Unit**	**Cell 1**						**Cell 2**					
DL timeslot number		**0**			**4**			**0**			**5**		
		T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1						Channel 1					
PCCPCH_Ec/Ior	dB	-3			n.a.			-3			n.a.		
SCH_Ec/Ior	dB	-9			n.a.			-9			n.a.		
SCH_t_{offset}	dB	0			n.a.			5			n.a.		
DPCH_Ec/Ior	dB	n.a.			Note 1		n.a.	n.a.			n.a.		Note 1
OCNS_Ec/Ior	dB	-3,12			Note 2		n.a.	n.a.	-3,12		n.a.		Note 2
$\hat{I}_{or}/I_{oc}$	dB	1						-Inf.	3		-Inf.		3
PCCPCH RSCP	dBm	-72			n.a.			-Inf.	-70		n.a.		
I_{oc}	dBm/ 3,84 MHz	-70											
Propagation Condition		AWGN											
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior .													

8.3.1.1.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.

[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 10 seconds, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G.

7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.

8) After 10 seconds, the SS shall switch the power settings from T2 to T3

9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.

10) After 10 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat step 1-10 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	~~TRUE~~FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	~~TRUE~~FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	~~TRUE~~FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	~~TRUE~~FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
~~-CHOICE *TDD option*~~	~~3.84 Mcps~~
-CHOICE *sync case*	Case 2
-Timeslot	0
-Cell parameters ID	0
-SCTD indicator	FALSE
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms

Information Element/Group name	Value/Remark
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE “Cell synchronisation information “, TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE “Cell synchronisation information reporting indicator” in IE “Cell reporting quantities” TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.	
Note 2: Reporting interval = 0 ms means no periodical reporting	

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE *mode*	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE *channel requirement*	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE *mode*	TDD
~~-CHOICE *TDD option*~~	~~3.84 Mcps TDD~~
~~-~~ -UL Target SIR	Not Present
~~-~~ -CHOICE *UL OL PC info*	Individually signalled
~~-CHOICE *TDD option*~~	~~3.84 Mcps TDD~~
~~–~~ -Indivdual Timeslot interference info	1
~~–~~ -Individual timeslot interference (10.3.6.38)	
~~–~~ -Timeslot Number (10.3.6.84)	
~~-CHOICE *TDD option*~~	~~3.84 Mcps TDD~~
~~–~~ -Timeslot number	12
-UL Timeslot Interference	-90 dBm
-CHOICE *mode*	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE *Timing Advance*	Disabled
-UL CCTrCH list	1
-UL Target SIR	TBD dB
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
~~-CHOICE *TDD option*~~	~~3.84 Mcps~~
~~-~~ -Timeslot number	12
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
~~-Choice *TDD option*~~	~~3.84 Mcps~~
~~-~~ -Choice Burst Type	Type 1
~~-~~ -Midamble Allocation Mode	Default
~~-~~ -Midamble configuration burst type 1 and 3	16
~~-~~ -Midamble shift	Not present
~~-CHOICE *TDD option*~~	~~3.84 Mcps~~
-First timeslot code list	1
-Channelisation code	8/1
-Choice more timeslots	No more timeslots

Information Element	Value/Remark
Downlink radio resources	
-CHOICE *mode*	TDD
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE *mode*	TDD
-TPC Step size	1 dB
-CHOICE *mode*	TDD
-CHOICE *mode*	TDD
~~-CHOICE *TDD option*~~	~~3.84 Mcps~~
-TX Diversity mode (10.3.6.86)	None
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
~~-CHOICE *TDD option*~~	~~3.84 Mcps~~
-CHOICE *sync case*	Case 2
-Timeslot	0
-Cell parameters ID	20
-SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE *mode*	TDD
-DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
~~-CHOICE *TDD option*~~	~~3.84 Mcps~~
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
~~-CHOICE *TDD option*~~	~~3.84 Mcps~~
-CHOICE *Burst Type*	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
~~-CHOICE *TDD option*~~	~~3.84 Mcps~~
-First timeslot channelisation codes (10.3.6.17)	
-CHOICE *codes representation*	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/2
-CHOICE *more timeslots*	No more timeslots
-SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message (step 6)~~for Intra frequency test cases~~

~~This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.~~

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Checked that this IE is present
-CHOICE mode	TDD
-Cell parameters ID	20
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	40

8.3.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than [FFS] of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.1.2 Handover to inter-frequency cell

8.3.1.2.1 Definition and applicability

The handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH.~~Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCH, excluding the RRC procedure delay as defined in [9].~~

The requirements and this test apply to the UTRA TDD UE.

8.3.1.2.2 Minimum requirement

The ~~hard handover delay~~interruption time shall be less than 40 ms in the dual carrier case when the cell is known by the UE and the SFN of the target cell needs to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/TDD inter-frequency handover is commanded, the interruption time shall be less than,

$$T_{interrupt} = T_{offset} + T_{UI} + 30*F_{SFN} + 20*KC + 180*UC \text{ ms}$$

where,

T_{offset} Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel

T_{UL} Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell

F_{SFN} Equal to 1 if SFN decoding is required and equal to 0 otherwise

KC Equal to 1 if a known target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

UC Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

An inter-frequency TDD target cell shall be considered as known by the UE, if either or both of the following conditions are true:

- the target cell has been measured during the last 5 seconds
- the UE has had a radio link connected to the target cell during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

8.3.1.2.3 Test purpose

The purpose of this test is to verify the requirement for the inter-frequency handover delay in CELL_DCH state in the dual carrier case.

8.3.1.2.4 Method of test

8.3.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1.2.1 and 8.3.1.2.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The PCCPCH RSCP and SFN-CFN observed time difference of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. The UL DPCH shall be transmitted in timeslot 12.

Table 8.3.1.2.1: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	
HCS			Not used	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-80	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T_{SI}		s	1,28	The value shall be used for all cells in the test.
T1		s	10	
T2		s	10	
T3		s	10	

Table 8.3.1.2.2: Cell Specific parameters for Handover to inter-frequency cell

Parameter	**Unit**	**Cell 1**						**Cell 2**					
DL timeslot number		**0**			**4**			**2**			**5**		
		T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1						Channel 2					
PCCPCH_Ec/Ior	dB	-3			n.a.			-3			n.a.		
SCH_Ec/Ior	dB	-9			n.a.			-9			n.a.		
SCH_t_{offset}	dB	0			n.a.			5			n.a.		
DPCH_Ec/Ior	dB	n.a.			Note 1		n.a.	n.a.			n.a.		Note 1
OCNS_Ec/Ior	dB	-3,12			Note 2		n.a.	n.a.	-3,12		n.a.		Note 2
$\hat{I}_{or}/I_{oc}$	dB	1						-Inf.	7		-Inf		7
PCCPCH RSCP	dBm	-72			n.a.			-Inf.	-66		n.a.		
I_{oc}	dBm/ 3,84 MHz	-70											
Propagation Condition		AWGN											
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior .													

8.3.1.2.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.

[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 10 seconds, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C.

7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.

8) After 10 seconds, the SS shall switch the power settings from T2 to T3

9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.

10) After 10 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat step 1-10 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) -Inter-frequency measurement quantity (10.3.7.18) -CHOICE *reporting criteria* -Inter-frequency reporting criteria -Filter coefficient -CHOICE *mode* -Measurement quantity for frequency quality estimate	Inter-frequency measurement Not Present Inter-frequency reporting criteria 0 TDD Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21) -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -Timeslot ISCP reporting indicator -Proposed TGSN reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	 FALSE FALSE ~~Type 1~~No Report TRUE TRUE TDD ~~TRUE~~FALSE FALSE TRUE ~~TRUE~~FALSE
-Reporting cell status (10.3.7.61) -CHOICE *reported cell* -Maximum number of reported cells per reported non-used frequency -Measurement validity (10.3.7.51) -Inter-frequency set update (10.3.7.22) -CHOICE *report criteria*	 Report cells within monitored set on non-used frequency 1 Not Present Not Present Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event -Inter-frequency event identity (10.3.7.14) -Threshold used frequency -W used frequency -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) -CHOICE *reported cell* -Maximum number of reported cells per reported non-used frequency -Parameters required for each non-used frequency -Threshold non-used frequency -W non-used frequency	 1 Event 2C Not Present Not Present 0 dB 0 ms Report cells within monitored set on non-used frequency 1 1 -80 dBm 1
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE *mode*	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE *channel requirement*	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE *mode*	TDD
~~-CHOICE *TDD option*~~	~~3.84 Mcps TDD~~
-UL Target SIR	Not Present
-CHOICE *UL OL PC info*	Individually signalled
~~-CHOICE *TDD option*~~	~~3.84 Mcps TDD~~
-Indivdual Timeslot interference info	1
-Individual timeslot interference (10.3.6.38)	
-Timeslot Number (10.3.6.84)	
~~-CHOICE *TDD option*~~	~~3.84 Mcps TDD~~
-Timeslot number	12
- UL Timeslot Interference	-90 dBm
-CHOICE *mode*	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE *Timing Advance*	Disabled
-UL CCTrCH list	1
-UL Target SIR	TBD dB
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
~~-CHOICE *TDD option*~~	~~3.84 Mcps~~
-Timeslot number	12
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
~~-CHOICE *TDD option*~~	~~3.84 Mcps~~
-CHOICE *Burst Type*	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
~~-CHOICE *TDD option*~~	~~3.84 Mcps~~
-First timeslot code list	1
-Channelisation code	8/1
-CHOICE *more timeslots*	No more timeslots

Information Element	Value/Remark
Downlink radio resources	
-CHOICE *mode*	TDD
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE *mode*	TDD
-TPC Step size	1 dB
-CHOICE *mode*	TDD
-CHOICE *mode*	TDD
~~- CHOICE *TDD option*~~	~~3.84 Mcps~~
-TX Diversity mode (10.3.6.86)	None
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
- CHOICE *mode*	TDD
~~- CHOICE *TDD option*~~	~~3.84 Mcps~~
- CHOICE *sync case*	Case 2
- Timeslot	2
- Cell parameters ID	20
- SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE *mode*	TDD
- DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
- Downlink DPCH timeslots and codes (10.3.6.32)	
- First individual timeslot info (10.3.6.37)	
- Timeslot Number (10.3.6.84)	
~~- CHOICE *TDD option*~~	~~3.84 Mcps~~
- Timeslot number	5
- TFCI existence	True
- Midamble shift and burst type (10.3.6.41)	
~~- CHOICE *TDD option*~~	~~3.84 Mcps~~
- CHOICE *Burst Type*	Type 1
- Midamble Allocation Mode	Default
- Midamble configuration burst type 1 and 3	16
- Midamble shift	Not present
~~- CHOICE *TDD option*~~	~~3.84 Mcps~~
- First timeslot channelisation codes (10.3.6.17)	
- CHOICE *codes representation*	Consecutive codes
- First channelisation code	16/1
- Last channelisation code	16/2
- CHOICE *more timeslots*	No more timeslots
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message ~~for Inter frequency test cases~~(step 6)

~~This message is common for all inter frequency TDD test cases in clause 8.7 and is described in Annex I.~~

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2 in Table 8.6.2.4.1.2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Checked that this IE is present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2 in Table 8.6.2.4.1.2
-CHOICE mode	TDD
-Primary CCPCH Info	
-CHOICE mode	TDD
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

8.3.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than [FFS] of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.2 TDD/FDD Handover

8.3.2.1 Definition and applicability

The handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCCH.~~Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCCH, excluding the RRC procedure delay as defined in [9].~~

The requirements and this test apply to the UTRA TDD / FDD UE.

8.3.2.2 Minimum requirement

The interruption time~~hard handover delay~~ shall be less than 100 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/FDD handover is commanded, the interruption time shall be less than,

$T_{interrupt} = T_{offset} + 40 + 50*KC + 150*UC$ ms

where,

T_{offset}	Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell.
KC	Equal to 1 if a known target cell is indicated in the RRC message implying TDD/FDD handover and equal to 0 otherwise
UC	Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/FDD handover and equal to 0 otherwise

An inter-frequency FDD target cell shall be considered known by the UE, if the target cell has been measured by the UE during the last 5 seconds.

The phase reference is the Primary CPICH.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.2 and A.5.2.

8.3.2.3 Test purpose

The purpose of this test is to verify the requirement for the TDD/FDD handover delay in CELL_DCH state.

8.3.2.4 Method of test

8.3.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.2.1, 8.3.2.2 and 8.3.2.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G and 2B shall be used. The CPICH_RSCP of the best cell on the unused frequency shall be reported together with Event 2B reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

Table 8.3.2.1: General test parameters for TDD/FDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	TDD cell
	Neighbour cell		Cell 2	FDD cell
Final condition	Active cell		Cell 2	FDD cell
HCS			Not used	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	3	Hysteresis parameter for event 2B
Time to Trigger		ms	0	
Absolute threshold used frequency		dBm	-71	Applicable for Event 2B
Threshold non-used frequency		dBm	-80	Applicable for Event 2B
~~W used frequency~~			~~1~~	~~Applicable for Event 2B~~
W non-used frequency			1	Applicable for Event 2B
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 FDD neighbours on Channel 2	
T_{SI}		s	1.28	The value shall be used for all cells in the test.
T1		s	5	
T2		s	15	
T3		s	5	

Table 8.3.2.2: Cell 1 specific test parameters for TDD/FDD handover

Parameter	Unit	Cell 1					
DL timeslot number		**0**			**2**		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1					
PCCPCH_Ec/Ior	dB	-3			n.a.		
SCH_Ec/Ior	dB	-9			n.a.		
SCH_t_{offset}	dB	0			n.a.		
DPCH_Ec/Ior	dB	n.a.			Note 1		n.a.
OCNS_Ec/Ior	dB	-3,12			Note 2		n.a.
$\hat{I}_{or}/I_{oc}$	dB	5	-1		5	-1	
PCCPCH RSCP	dBm	-68	-74		n.a.		
I_{oc}	dBm/ 3,84 MHz	-70					
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior .							

Table 8.3.2.3: Cell 2 specific test parameters for TDD/FDD handover

Parameter	Unit	Cell 2	
		T1, T2	T3
CPICH_Ec/Ior	dB	-10	
PCCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
DPCH_Ec/Ior	dB	n.a.	Note 1
OCNS_Ec/Ior	dB	-0,941	Note 2
CPICH_RSCP	dBm	-83	-77
$\hat{I}_{or}/I_{oc}$	dB	-3	3
I_{oc}	dBm/3.84 MHz	-70	
Propagation Condition		AWGN	
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}			

8.3.2.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.

[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 5 seconds, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2B.

7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.

8) After 15 seconds, the SS shall switch the power settings from T2 to T3

9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCCH to cell 2 less than 100 ms from the beginning of time period T3 then the number of successful tests is increased by one.

10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat step 1-10 [TBD] times.

Specific Message Contents

All messages indicated belowabove shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message, event 2B (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) -Inter-frequency measurement quantity (10.3.7.18) -CHOICE *reporting criteria* -Inter-frequency reporting criteria -Filter coefficient -CHOICE *mode* -Measurement quantity for frequency quality estimate	Inter-frequency measurement Not Present Inter-frequency reporting criteria 0 FDD CPICH RSCP
-Inter-frequency reporting quantity (10.3.7.21) -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 FALSE FALSE ~~Type 1~~No Report ~~TRUE~~FALSE TRUE FDD ~~TRUE~~FALSE TRUE ~~TRUE~~FALSE
-Reporting cell status (10.3.7.61) -CHOICE *reported cell* -Maximum number of reported cells per reported non-used frequency -Measurement validity (10.3.7.51) -Inter-frequency set update (10.3.7.22) -CHOICE *report criteria*	 Report cells within monitored set on non-used frequency 1 Not Present Not Present Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event -Inter-frequency event identity (10.3.7.14) -Threshold used frequency -W used frequency -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) -CHOICE *reported cell* -Maximum number of reported cells per reported non-used frequency -Parameters required for each non-used frequency -Threshold non-used frequency -W non-used frequency	 1 Event 2B -71 dBm 1 0 dB 0 ms Report cells within monitored set on non-used frequency 1 1 -80 dBm 1
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE *mode*	FDD
-UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
-UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE *channel requirement*	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE *mode*	FDD
-DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
-CHOICE *mode*	FDD
-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 radio resources	
-CHOICE *mode*	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-DPC mode	0 (single)
-CHOICE *mode*	FDD
-Power offset $P_{Pilot-DPDCH}$	TBD
-DL rate matching restriction information	Not Present
-Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
-Fixed or Flexible Position	Flexible
-TFCI existence	TRUE
-CHOICE *SF*	Not Present
-Number of bits for Pilot bits(SF=128,256)	Not Present
-CHOICE *mode*	FDD
-DPCH compressed mode info (10.3.6.33)	Not Present (Note 1)

Information Element	Value/Remark
-TX Diversity mode (10.3.6.86)	None
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE *mode*	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	350
-PDSCH with SHO DCH info (10.3.6.47)	Not Present
-PDSCH code mapping (10.3.6.43)	Not Present
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE *mode*	FDD
-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
- SCCPCH information for FACH (10.3.6.70)	Not Present
Note 1: IE “DPCH compressed mode info” is not needed as default values are applied that have previously been received in RADIO BEARER SETUP or RRC CONNECTION SETUP	

MEASUREMENT REPORT message ~~for Inter frequency test cases~~(step 6)

~~This message is common for all inter frequency FDD test cases in clause 8.7 and is described in Annex I.~~

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE *mode*	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2 in Table 8.3.2.3
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	FDD
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Not Present
-CPICH RSCP	Checked that this IE is present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2B
-Inter-frequency cells	1
-Frequency Info	
-CHOICE *mode*	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2 in Table 8.3.2.3
-CHOICE mode	FDD
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

8.3.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than [FFS] of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #18
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Tdoc ⌘ T1-030152

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **141** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Corrections/Updates to TDD Cell Reselection and Handover Test Cases (3.84 Mcps Option)
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 15/01/2003
Category:	⌘	**A** ***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	Some test cases for TDD cell reselection and handover are inconsistent with 25.123
Summary of change:	⌘	Update existing test cases to correct for inconsistencies
Consequences if not approved:	⌘	Inconsistency 34.122 and 25.123

Clauses affected:	⌘	8.2.2.4, 8.3.1 and 8.3.2			
		Y	**N**		
Other specs Affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

8.2.2.4 Scenario 4: inter RAT cell re-selection

8.2.2.4.1 Definition and applicability

8.2.2.4.1.1 3,84 Mcps Option

The cell re-selection delay is defined as the time from when the cell quality levels change to the moment when this change makes the UE reselect a better ranked cell, and starts to send LOCATION UPDATING REQUEST message to perform a Location update to the new cell.

This test is for the case where the UE camps on a 3,84 Mcps TDD cell and reselects to a GSM cell.

The requirements and this test apply to UEs supporting both 3,84 Mcps TDD and GSM.

8.2.2.4.1.2 1,28 Mcps Option

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send LOCATION UPDATING REQUEST message to perform a Location update.

This test is for the case where the UE camps on a 1,28 Mcps TDD cell and reselects to a GSM cell.

The requirements and this test apply to UEs supporting both 1,28 Mcps TDD and GSM.

8.2.2.4.2 Minimum requirement

8.2.2.4.2.1 3,84 Mcps Option

The cell re-selection delay shall be less than 26 s + T_{BCCH}, where T_{BCCH} is the maximum time allowed to read BCCH data in the GSM cell. ~~8 s when the DRX cycle length is 1,28 s. The cell selection parameters in the BCCH of the GSM cell in system info 3 and 4 are transmitted at least every second~~.

NOTE: The cell re-selection delay can be expressed as:

$$4 * T_{measureGSM} + T_{BCCH}$$

where:

$T_{measureGSM}$ Specified in Table 4.1 in sub clause 4.2.2.7.1 in [2].

T_{BCCH} Equal to 1.9 s, i.e. the maximum time allowed to read BCCH data when synchronised to a BCCH carrier from a GSM cell (specified in TS 45.005).

The rate of correct cell reselections observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.4

8.2.2.4.2.2 1,28 Mcps Option

The cell re-selection delay shall be less than 4 s + T_{BCCH} where T_{BCCH} is the maximum time allowed to read BCCH data from GSM cell.

The rate of correct cell reselections observed during repeated tests shall be at least 90%.

NOTE: The cell re-selection delay can be expressed as: $3*T_{measureTDD} + T_{BCCH}$, where:

$T_{measureTDD}$ Specified in 4.2.2.7.2 table 4.1A in [2].

T_{BCCH} Maximum time allowed to read BCCH data from GSM cell in TS 45.005.

This gives a total of 3.84s +T_{BCCH}, thus allow 4s +T_{BCCH}.

The normative reference for this requirement is TS 25.123 [2] clauses 4.2.2 and A.4.2.4

8.2.2.4.3 Test purpose

This test verifies the UE meets the minimum requirement for the case where the UE camps on a TDD cell and reselects to a GSM cell.

8.2.2.4.4 Method of Test

8.2.2.4.4.1 3,84 Mcps Option

8.2.2.4.4.1.1 Initial conditions

This scenario implies the presence of 1 3,84 Mcps TDD and 1 GSM cell as given in table 8.2.2.4.1, 8.2.2.4.2, and 8.2.2.4.3. Cell 1 and cell 2 shall belong to different Location Areas.

Table 8.2.2.4.1: General test parameters for UTRAN to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	TDD Cell
	Neighbour cell		Cell2	GSM Cell
Final condition	Active cell		Cell2	
DRX cycle length		s	1,28	UTRAN cell
BCCH repetition period (GSM cell)		s	1,87	In GSM the system information is scheduled according to an 8 x (51 x 8) cycle (i.e. a system information message is transmitted every 235 ms). The cell selection parameters in system info 3 and 4 are transmitted at least every second. (GSM 05.02)
T1		s	~~15~~45	
T2		s	~~15~~35	

Table 8.2.2.4.2: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
Timeslot Number		**0**		**8**	
		T1	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/Ior	DB	-3	-3		
SCH_Ec/Ior	DB	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0
PICH_Ec/Ior	DB			-3	-3
OCNS_Ec/Ior	DB	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	DB	3	-2	3	-2
I_{oc}	dBm/3, 84 MHz	–70		–70	
PCCPCH RSCP	DBm	-70	-75		
Propagation Condition		AWGN		AWGN	
Treselection	S	0			
$Ssearch_{RAT}$	DB	not sent			

Table 8.2.2.4.3: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-~~80~~90	-~~70~~75
RXLEV_ACCESS_MIN	dBm	-100	
MS_TXPWR_MAX_CCH	dBm	30	

8.2.2.4.4.1.2 Procedure

a) The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST and LOCATION UPDATING REQUEST messages from the UE.

b) The UE is switched on.

c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.

d) After ~~15~~ 45 s, the parameters are changed as described for T2.

e) The SS waits for LOCATION UPDATING REQUEST messages from the UE.

f) After ~~15~~ 35 s, the parameters are changed as described for T1.

g) The SS waits for RRC CONNECTION REQUEST messages from the UE.

h) Repeat steps d) to g) [TBD] times.

8.2.2.4.4.2 1,28 Mcps Option

8.2.2.4.4.2.1 Initial conditions

This scenario implies the presence of 1 1.28 Mcps TDD serving cell, and 1 GSM cell to be re-selected. Test parameters are given in table 8.2.2.4.1A, 8.2.2.4.2A, and 8.2.2.4.3A.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. Cell 1 and cell 2 shall belong to different location areas.

Table 8.2.2.4.1A: General test parameters for UTRAN (1.28 Mcps TDD OPTION) to GSM Cell Re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cell		Cell2	
Final condition	Active cell		Cell2	
DRX cycle length		s	1,28	
T1		s	15	
T2		s	15	

Table 8.2.2.4.2A: Cell re-selection UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1 (UTRA)			
Timeslot Number		0		DwPTS	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3	-3		
DwPCH_Ec/Ior	dB			0	0
$\hat{I}_{or}/I_{oc}$	dB	13	-1	13	-1
I_{oc}	dBm/1.28 MHz	-80			
PCCPCH RSCP	dBm	-70	-84		
Propagation Condition		AWGN		AWGN	
Treselection	s	0			
$Ssearch_{RAT}$	dB	Not sent			
Qrxlevmin	dBm	-103			
$Qoffset1_{s,n}$	dB	C1, C2: 0			
$Qhyst1_{s}$	dB	0			

Table 8.2.2.4.3A: Cell re-selection UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2 (GSM)	
		T1	T2
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-75	-70
RXLEV_ACCESS_MIN	dBm	-104	
MS_TXPWR_MAX_CCH	dBm	33	

8.2.2.4.4.2.2 Procedure

a) The SS activates cell 1 and 2 with T1 defined parameters and monitors cell 1 and 2 for RRC CONNECTION REQUEST and LOCATION UPDATING REQUEST messages from the UE.

b) The UE is switched on.

c) The SS waits until the UE camps on Cell 1 and sends the RRC CONNECTION REQUEST message.

d) After 15 s, the parameters are changed as described for T2.

e) The SS waits for LOCATION UPDATING REQUEST messages from the UE.

f) After 15 s, the parameters are changed as described for T1.

g) The SS waits for RRC CONNECTION REQUEST messages from the UE.

h) Repeat steps d) to g) [TBD] times.

8.2.2.4.5 Test Requirements

8.2.2.4.5.1 3,84 Mcps Option

1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).

2) In step e), the UE shall respond on cell 2 within ~~8~~ 27.9 s.

3) In step g), the UE shall respond on cell 1.

For the test to pass, the total number of fulfilled test requirements in step 2) shall be at least 90% of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.2.2.4.5.2 1,28 Mcps Option

1) In step c), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).

2) In step e), the UE shall respond on cell 2 within 8 s.

3) In step g), the UE shall respond on cell 1.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3 UTRAN Connected Mode Mobility

8.3.1 TDD/TDD Handover for 3,84 Mcps Option

8.3.1.1 Handover to intra-frequency cell

8.3.1.1.1 Definition and applicability

Handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH.~~Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCH, excluding the RRC procedure delay as defined in [9].~~

The requirements and this test apply to the UTRA TDD UE.

8.3.1.1.2 Minimum requirement

The ~~hard handover delay~~interruption time shall be less than 40 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/TDD intra-frequency handover is commanded, the interruption time shall be less than,

$$T_{interrupt} = T_{offset} + T_{UL} + 30*F_{SFN} + 20*KC + 180*UC \text{ ms}$$

where,

T_{offset} Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel

T_{UL} Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell

F_{SFN} Equal to 1 if SFN decoding is required and equal to 0 otherwise

KC Equal to 1 if a known target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

UC Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

An intra-frequency TDD target cell shall be considered as known by the UE, if either or both of the following conditions are true:

- the target cell has been measured during the last 5 seconds

- the UE has had a radio link connected to the target cell during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.1.

8.3.1.1.3 Test purpose

The purpose of this test is to verify the requirement for the intra-frequency handover delay in CELL_DCH state in the single carrier case.

8.3.1.1.4 Method of test

8.3.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1.1.1 and 8.3.1.1.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP and SFN-CFN observed timed difference shall be reported together with Event 1G. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The UL DPCH shall be transmitted in timeslot 12.

Table 8.3.1.1.1: General test parameters for Handover to intra-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	
HCS			Not used	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	
T1		s	10	
T2		s	10	
T3		s	10	

Table 8.3.1.1.2: Cell specific test parameters for Handover to intra-frequency cell

Parameter	Unit	Cell 1						Cell 2					
DL timeslot number		0			4			0			5		
		T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1						Channel 1					
PCCPCH_Ec/Ior	dB	-3			n.a.			-3			n.a.		
SCH_Ec/Ior	dB	-9			n.a.			-9			n.a.		
SCH_t_{offset}	dB	0			n.a.			5			n.a.		
DPCH_Ec/Ior	dB	n.a.			Note 1		n.a.	n.a.			n.a.		Note 1
OCNS_Ec/Ior	dB	-3,12			Note 2		n.a.	n.a.	-3,12		n.a.		Note 2
$\hat{I}_{or}/I_{oc}$	dB	1						-Inf.	3		-Inf.		3
PCCPCH RSCP	dBm	-72			n.a.			-Inf.	-70		n.a.		
I_{oc}	dBm/ 3,84 MHz	-70											
Propagation Condition		AWGN											
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior .													

8.3.1.1.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.

[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 10 seconds, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G.

7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.

8) After 10 seconds, the SS shall switch the power settings from T2 to T3

9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.

10) After 10 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat step 1-10 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	~~TRUE~~FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	~~TRUE~~FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	~~TRUE~~FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	~~TRUE~~FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
~~-CHOICE *mode*~~	~~TDD~~
~~-Primary CCPCH info (10.3.6.57)~~	
~~-CHOICE *mode*~~	~~TDD~~
~~-CHOICE *TDD option*~~	~~3.84 Mcps~~
~~-CHOICE *sync case*~~	~~Case 2~~
~~-Timeslot~~	~~0~~
~~-Cell parameters ID~~	~~0~~
~~-SCTD indicator~~	~~FALSE~~
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms

Information Element/Group name	Value/Remark
-Amount of reporting -Reporting interval -Reporting cell status	Infinity 0 ms (Note 2) Not Present
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE “Cell synchronisation information “, TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE “Cell synchronisation information reporting indicator” in IE “Cell reporting quantities” TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL. Note 2: Reporting interval = 0 ms means no periodical reporting	

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE *mode*	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE *channel requirement*	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE *mode*	TDD
-CHOICE *TDD option*	3.84 Mcps TDD
-UL Target SIR	Not Present
-CHOICE *UL OL PC info*	Individually signalled
-CHOICE *TDD option*	3.84 Mcps TDD
-Indivdual Timeslot interference info	1
-Individual timeslot interference (10.3.6.38)	
-Timeslot Number (10.3.6.84)	
-CHOICE *TDD option*	3.84 Mcps TDD
-Timeslot number	12
-UL Timeslot Interference	-90 dBm
-CHOICE *mode*	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE *Timing Advance*	Disabled
-UL CCTrCH list	1
-UL Target SIR	TBD dB
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE *TDD option*	3.84 Mcps
-Timeslot number	12
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-Choice *TDD option*	3.84 Mcps
-Choice Burst Type	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
-CHOICE *TDD option*	3.84 Mcps
-First timeslot code list	1
-Channelisation code	8/1
-Choice more timeslots	No more timeslots

Information Element	Value/Remark
Downlink radio resources	
-CHOICE *mode*	TDD
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE *mode*	TDD
-TPC Step size	1 dB
-CHOICE *mode*	TDD
-CHOICE *mode*	TDD
-CHOICE *TDD option*	3.84 Mcps
-TX Diversity mode (10.3.6.86)	None
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
-CHOICE *TDD option*	3.84 Mcps
-CHOICE *sync case*	Case 2
-Timeslot	0
-Cell parameters ID	20
-SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE *mode*	TDD
-DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE *TDD option*	3.84 Mcps
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE *TDD option*	3.84 Mcps
-CHOICE *Burst Type*	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
-CHOICE *TDD option*	3.84 Mcps
-First timeslot channelisation codes (10.3.6.17)	
-CHOICE *codes representation*	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/2
-CHOICE *more timeslots*	No more timeslots
-SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message (step 6)~~for Intra frequency test cases~~

~~This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.~~

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Checked that this IE is present
-CHOICE mode	TDD
-Cell parameters ID	20
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	40

8.3.1.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than ~~[FFS]~~90% with a confidence level of [FFS]% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.1.2 Handover to inter-frequency cell

8.3.1.2.1 Definition and applicability

The handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCH.~~Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCH, excluding the RRC procedure delay as defined in [9].~~

The requirements and this test apply to the UTRA TDD UE.

8.3.1.2.2 Minimum requirement

The interruption time~~hard handover delay~~ shall be less than 40 ms in the dual carrier case when the cell is known by the UE and the SFN of the target cell needs to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/TDD inter-frequency handover is commanded, the interruption time shall be less than,

$$T_{interrupt} = T_{offset} + T_{UI} + 30*F_{SFN} + 20*KC + 180*UC \text{ ms}$$

where,

T_{offset} Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell and the time that can elapse until the appearance of a Beacon channel

T_{UL} Equal to 10 ms, the time that can elapse until the appearance of the UL timeslot in the target cell

F_{SFN} Equal to 1 if SFN decoding is required and equal to 0 otherwise

KC Equal to 1 if a known target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

UC Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/TDD handover and equal to 0 otherwise

An inter-frequency TDD target cell shall be considered as known by the UE, if either or both of the following conditions are true:

- the target cell has been measured during the last 5 seconds
- the UE has had a radio link connected to the target cell during the last 5 seconds.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

8.3.1.2.3 Test purpose

The purpose of this test is to verify the requirement for the inter-frequency handover delay in CELL_DCH state in the dual carrier case.

8.3.1.2.4 Method of test

8.3.1.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1.2.1 and 8.3.1.2.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The PCCPCH RSCP and SFN-CFN observed time difference of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. The UL DPCH shall be transmitted in timeslot 12.

Table 8.3.1.2.1: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	
HCS			Not used	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-80	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T_{SI}		s	1,28	The value shall be used for all cells in the test.
T1		s	10	
T2		s	10	
T3		s	10	

Table 8.3.1.2.2: Cell Specific parameters for Handover to inter-frequency cell

Parameter	**Unit**	**Cell 1**						**Cell 2**					
DL timeslot number		**0**			**4**			**2**			**5**		
		T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1						Channel 2					
PCCPCH_Ec/Ior	dB	-3			n.a.			-3			n.a.		
SCH_Ec/Ior	dB	-9			n.a.			-9			n.a.		
SCH_t_{offset}	dB	0			n.a.			5			n.a.		
DPCH_Ec/Ior	dB	n.a.			Note 1		n.a.	n.a.			n.a.		Note 1
OCNS_Ec/Ior	dB	-3,12			Note 2		n.a.	n.a.	-3,12		n.a.		Note 2
$\hat{I}_{or}/I_{oc}$	dB	1						-Inf.	7		-Inf		7
PCCPCH RSCP	dBm	-72			n.a.			-Inf.	-66		n.a.		
I_{oc}	dBm/ 3,84 MHz	-70											
Propagation Condition		AWGN											
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior .													

8.3.1.2.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.

[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 10 seconds, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C.

7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.

8) After 10 seconds, the SS shall switch the power settings from T2 to T3

9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.

10) After 10 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat step 1-10 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) -Inter-frequency measurement quantity (10.3.7.18) -CHOICE *reporting criteria* -Inter-frequency reporting criteria -Filter coefficient -CHOICE *mode* -Measurement quantity for frequency quality estimate	Inter-frequency measurement Not Present Inter-frequency reporting criteria 0 TDD Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21) -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -Timeslot ISCP reporting indicator -Proposed TGSN reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	 FALSE FALSE ~~Type 1~~No Report TRUE TRUE TDD ~~TRUE~~FALSE FALSE TRUE ~~TRUE~~FALSE
-Reporting cell status (10.3.7.61) -CHOICE *reported cell* -Maximum number of reported cells per reported non-used frequency -Measurement validity (10.3.7.51) -Inter-frequency set update (10.3.7.22) -CHOICE *report criteria*	 Report cells within monitored set on non-used frequency 1 Not Present Not Present Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event -Inter-frequency event identity (10.3.7.14) -Threshold used frequency -W used frequency -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) -CHOICE *reported cell* -Maximum number of reported cells per reported non-used frequency -Parameters required for each non-used frequency -Threshold non-used frequency -W non-used frequency	 1 Event 2C Not Present Not Present 0 dB 0 ms Report cells within monitored set on non-used frequency 1 1 -80 dBm 1
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE *mode*	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE *channel requirement*	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE *mode*	TDD
-CHOICE *TDD option*	3.84 Mcps TDD
-UL Target SIR	Not Present
-CHOICE *UL OL PC info*	Individually signalled
-CHOICE *TDD option*	3.84 Mcps TDD
-Indivdual Timeslot interference info	1
-Individual timeslot interference (10.3.6.38)	
-Timeslot Number (10.3.6.84)	
-CHOICE *TDD option*	3.84 Mcps TDD
-Timeslot number	12
- UL Timeslot Interference	-90 dBm
-CHOICE *mode*	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE *Timing Advance*	Disabled
-UL CCTrCH list	1
-UL Target SIR	TBD dB
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE *TDD option*	3.84 Mcps
-Timeslot number	12
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE *TDD option*	3.84 Mcps
-CHOICE *Burst Type*	Type 1
-Midamble Allocation Mode	Default
-Midamble configuration burst type 1 and 3	16
-Midamble shift	Not present
-CHOICE *TDD option*	3.84 Mcps
-First timeslot code list	1
-Channelisation code	8/1
-CHOICE *more timeslots*	No more timeslots

Information Element	Value/Remark
Downlink radio resources	
-CHOICE *mode*	TDD
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE *mode*	TDD
-TPC Step size	1 dB
-CHOICE *mode*	TDD
-CHOICE *mode*	TDD
-CHOICE *TDD option*	3.84 Mcps
-TX Diversity mode (10.3.6.86)	None
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
- CHOICE *mode*	TDD
- CHOICE *TDD option*	3.84 Mcps
- CHOICE *sync case*	Case 2
- Timeslot	2
- Cell parameters ID	20
- SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE *mode*	TDD
- DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
- Downlink DPCH timeslots and codes (10.3.6.32)	
- First individual timeslot info (10.3.6.37)	
- Timeslot Number (10.3.6.84)	
- CHOICE *TDD option*	3.84 Mcps
- Timeslot number	5
- TFCI existence	True
- Midamble shift and burst type (10.3.6.41)	
- CHOICE *TDD option*	3.84 Mcps
- CHOICE *Burst Type*	Type 1
- Midamble Allocation Mode	Default
- Midamble configuration burst type 1 and 3	16
- Midamble shift	Not present
- CHOICE *TDD option*	3.84 Mcps
- First timeslot channelisation codes (10.3.6.17)	
- CHOICE *codes representation*	Consecutive codes
- First channelisation code	16/1
- Last channelisation code	16/2
- CHOICE *more timeslots*	No more timeslots
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message (step 6)~~for Inter frequency test cases~~

~~This message is common for all inter frequency TDD test cases in clause 8.7 and is described in Annex I.~~

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2 in Table 8.6.2.4.1.2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Checked that this IE is present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2 in Table 8.6.2.4.1.2
-CHOICE mode	TDD
-Primary CCPCH Info	
-CHOICE mode	TDD
-CHOICE TDD Option	3.84 Mcps TDD
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

8.3.1.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]%~~[FFS]~~ of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

<Next Changed Section>

8.3.2 TDD/FDD Handover for 3,84 Mcps Option

8.3.2.1 Definition and applicability

The handover interruption time is defined as the time between the end of the last TTI containing a transport block on the old DPCH and the time the UE starts transmission of the new uplink DPCCH.~~Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCCH, excluding the RRC procedure delay as defined in [9].~~

The requirements and this test apply to the UTRA TDD / FDD UE.

8.3.2.2 Minimum requirement

The interruption time~~hard handover delay~~ shall be less than 100 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The interruption time is dependent on whether the target cell is known for the UE or not.

If TDD/FDD handover is commanded, the interruption time shall be less than,

$T_{interrupt} = T_{offset} + 40 + 50*KC + 150*UC$ ms

where,

T_{offset} Equal to 10 ms, the frame timing uncertainty between the old cell and the target cell.

KC Equal to 1 if a known target cell is indicated in the RRC message implying TDD/FDD handover and equal to 0 otherwise

UC Equal to 1 if an unknown target cell is indicated in the RRC message implying TDD/FDD handover and equal to 0 otherwise

An inter-frequency FDD target cell shall be considered known by the UE, if the target cell has been measured by the UE during the last 5 seconds.

The phase reference is the Primary CPICH.

The interruption time requirements for an unknown target cell shall apply only if the signal quality of the unknown target cell is sufficient for successful synchronisation with one attempt.

The normative reference for this requirement is TS 25.123 [2] clauses 5.2 and A.5.2.

8.3.2.3 Test purpose

The purpose of this test is to verify the requirement for the TDD/FDD handover delay in CELL_DCH state.

8.3.2.4 Method of test

8.3.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.2.1, 8.3.2.2 and 8.3.2.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G and 2B shall be used. The CPICH_RSCP of the best cell on the unused frequency shall be reported together with Event 2B reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

Table 8.3.2.1: General test parameters for TDD/FDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	TDD cell
	Neighbour cell		Cell 2	FDD cell
Final condition	Active cell		Cell 2	FDD cell
HCS			Not used	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	3	Hysteresis parameter for event 2B
Time to Trigger		ms	0	
Absolute threshold used frequency		dBm	-71	Applicable for Event 2B
Threshold non-used frequency		dBm	-80	Applicable for Event 2B
~~W used frequency~~			~~1~~	~~Applicable for Event 2B~~
W non-used frequency			1	Applicable for Event 2B
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 FDD neighbours on Channel 2	
T_{SI}		s	1.28	The value shall be used for all cells in the test.
T1		s	5	
T2		s	15	
T3		s	5	

Table 8.3.2.2: Cell 1 specific test parameters for TDD/FDD handover

Parameter	Unit	Cell 1					
DL timeslot number		**0**			**2**		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1					
PCCPCH_Ec/Ior	dB	-3			n.a.		
SCH_Ec/Ior	dB	-9			n.a.		
SCH_t_{offset}	dB	0			n.a.		
DPCH_Ec/Ior	dB	n.a.			Note 1		n.a.
OCNS_Ec/Ior	dB	-3,12			Note 2		n.a.
$\hat{I}_{or}/I_{oc}$	dB	5	-1		5	-1	
PCCPCH RSCP	dBm	-68	-74		n.a.		
I_{oc}	dBm/ 3,84 MHz	-70					
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior .							

Table 8.3.2.3: Cell 2 specific test parameters for TDD/FDD handover

Parameter	Unit	Cell 2	
		T1, T2	T3
CPICH_Ec/Ior	dB	-10	
PCCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
DPCH_Ec/Ior	dB	n.a.	Note 1
OCNS_Ec/Ior	dB	-0,941	Note 2
CPICH_RSCP	dBm	-83	-77
$\hat{I}_{or}/I_{oc}$	dB	-3	3
I_{oc}	dBm/3.84 MHz	-70	
Propagation Condition		AWGN	
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}			

8.3.2.4.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.

[Editor's note: subclause 7.3.4 in TS 34.108 (Message sequence chart for Handover Test procedure) is not yet specified]

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 5 seconds, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2B.

7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.

8) After 15 seconds, the SS shall switch the power settings from T2 to T3

9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCCH to cell 2 less than 100 ms from the beginning of time period T3 then the number of successful tests is increased by one.

10) After 5 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat step 1-10 [TBD] times.

Specific Message Contents

All messages indicated belowabove shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message, event 2B (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Event trigger Not Present
-CHOICE *Measurement type* -Inter-frequency measurement (10.3.7.16) -Inter-frequency measurement objects list (10.3.7.13) -Inter-frequency measurement quantity (10.3.7.18) -CHOICE *reporting criteria* -Inter-frequency reporting criteria -Filter coefficient -CHOICE *mode* -Measurement quantity for frequency quality estimate	Inter-frequency measurement Not Present Inter-frequency reporting criteria 0 FDD CPICH RSCP
-Inter-frequency reporting quantity (10.3.7.21) -UTRA Carrier RSSI -Frequency quality estimate -Non frequency related cell reporting quantities (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -CPICH Ec/N0 reporting indicator -CPICH RSCP reporting indicator -Pathloss reporting indicator	 FALSE FALSE ~~Type 1~~No Report ~~TRUE~~FALSE TRUE FDD ~~TRUE~~FALSE TRUE ~~TRUE~~FALSE
-Reporting cell status (10.3.7.61) -CHOICE *reported cell* -Maximum number of reported cells per reported non-used frequency -Measurement validity (10.3.7.51) -Inter-frequency set update (10.3.7.22) -CHOICE *report criteria*	 Report cells within monitored set on non-used frequency 1 Not Present Not Present Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19) -Parameters required for each event -Inter-frequency event identity (10.3.7.14) -Threshold used frequency -W used frequency -Hysteresis -Time to trigger -Reporting cell status (10.3.7.61) -CHOICE *reported cell* -Maximum number of reported cells per reported non-used frequency -Parameters required for each non-used frequency -Threshold non-used frequency -W non-used frequency	 1 Event 2B -71 dBm 1 0 dB 0 ms Report cells within monitored set on non-used frequency 1 1 -80 dBm 1
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE *mode*	FDD
-UARFCN uplink(Nu)	Same uplink UARFCN as used for cell 2
-UARFCN downlink(Nd)	Same downlink UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	33 dBm
-CHOICE *channel requirement*	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE *mode*	FDD
-DPCCH power offset	-6dB
- PC Preamble	1 frame
- SRB delay	7 frames
- Power Control Algorithm	Algorithm1
- TPC step size	1dB
-CHOICE *mode*	FDD
-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 radio resources	
-CHOICE *mode*	FDD
-Downlink PDSCH information	Not Present
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-DPC mode	0 (single)
-CHOICE *mode*	FDD
-Power offset $P_{Pilot-DPDCH}$	TBD
-DL rate matching restriction information	Not Present
-Spreading factor	Reference to TS34.108 clause 6.10 Parameter Set
-Fixed or Flexible Position	Flexible
-TFCI existence	TRUE
-CHOICE *SF*	Not Present
-Number of bits for Pilot bits(SF=128,256)	Not Present
-CHOICE *mode*	FDD
-DPCH compressed mode info (10.3.6.33)	Not Present (Note 1)

Information Element	Value/Remark
-TX Diversity mode (10.3.6.86)	None
-SSDT information (10.3.6.77)	Not Present
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE *mode*	FDD
-Primary CPICH info (10.3.6.60)	
-Primary scrambling code	350
-PDSCH with SHO DCH info (10.3.6.47)	Not Present
-PDSCH code mapping (10.3.6.43)	Not Present
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE *mode*	FDD
-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
- SCCPCH information for FACH (10.3.6.70)	Not Present
Note 1: IE “DPCH compressed mode info” is not needed as default values are applied that have previously been received in RADIO BEARER SETUP or RRC CONNECTION SETUP	

MEASUREMENT REPORT message for Inter frequency test cases

~~This message is common for all inter frequency FDD test cases in clause 8.7 and is described in Annex I.~~

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE *mode*	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2 in Table 8.3.2.3
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Checked that this IE is present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	FDD
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Not Present
-CPICH RSCP	Checked that this IE is present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2B
-Inter-frequency cells	1
-Frequency Info	
-CHOICE *mode*	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2 in Table 8.3.2.3
-CHOICE mode	FDD
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

8.3.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than ~~[FFS]~~ 90% with a confidence level of [FFS]% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

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San Antonio, Texas, USA, February 10th-14th 2003

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CHANGE REQUEST

⌘ **34.122** **CR** **142** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Introduction of CPICH RSCP measurement performance requirements for UTRA TDD
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**F** ***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	Performance requirements and test for the CPICH RSCP measurement for the purpose of handover evaluation from in UTRA TDD to FDD are still missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of CPICH RSCP measurement performance requirements and test for UTRA TDD
Consequences if not approved:	⌘	Missing performance requirements and test for the CPICH measurement in UTRA TDD

Clauses affected:	⌘	8.7.2

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

Other comments: ⌘ -

8.7.2 CPICH measurements (FDD)

8.7.2.1 CPICH RSCP

~~Void~~

8.7.2.1.1 Absolute measurement accuracy

8.7.2.1.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured in an UTRA FDD cell on one frequency compared to the actual CPICH RSCP power of that cell on the same frequency.

The requirements and this test apply only to UE supporting both UTRA TDD and UTRA FDD.

8.7.2.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.1.1 are valid under the following conditions:

- CPICH_RSCP1,2$|_{dBm} \geq$ -114 dBm.

- $\left| \frac{I_o}{\hat{I}_{or}} \right|_{in\ dB} - \left| \frac{CPICH\_E_c}{I_{or}} \right|_{in\ dB} \leq 20dB$.

Table 8.7.2.1.1.1: CPICH RSCP inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/ 3.84 MHz]
CPICH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.2.1 and A.9.1.2.1.

8.7.2.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP absolute measurement accuracy is within the specified limits.

8.7.2.1.1.4 Method of test

8.7.2.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

~~In this case all cells are on the same frequency.~~ In this case both cells are on different frequencies. Cell 1 is a UTRA TDD cell and cell 2 is a UTRA FDD cell. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. No second Beacon timeslot shall be provided for cell 1. CPICH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in table 8.7.2.1.1.2.

Table 8.7.2.1.1.2: CPICH RSCP inter frequency tests parameters

Parameter	Unit	Test 1		Test 2	
		Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	n.a.	0	n.a.
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior	dB	n.a.	-10	n.a.	-10
PCCPCH_Ec/Ior	dB	-3	-12	-3	-12
SCH_Ec/Ior	dB	-9	-12	-9	-12
SCH_t_{offset}		5	n.a.	5	n.a.
PICH_Ec/Ior	dB	n.a.	-15	n.a.	-15
OCNS_Ec/Ior	dB	-3.12	-0.94	-3.12	-0.94
Ioc	dBm/ 3.84 MHz	-57.7	-60	-84.7	-84
Îor/Ioc	dB	7	9.54	3	0
PCCPCH RSCP, Note 1	dBm	-53.7	n.a.	-84.7	n.a.
CPICH RSCP, Note 1	dBm	n.a.	-60.46	n.a.	-94
Io, Note 1	dBm/ 3.84 MHz	-50	-50	-80	-81
Propagation condition	-	AWGN		AWGN	
NOTE 1: PCCPCH RSCP, CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.					

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1.1.2.

8.7.2.1.1.4.2 Procedure

1) SS shall transmit the MEASUREMENT CONTROL message for inter frequency measurement.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check CPICH RSCP value of Cell 2 in the MEASUREMENT REPORT messages. CPICH RSCP levels of Cell 2 reported by the UE is compared to the actual CPICH RSCP value of Cell 2 for each MEASUREMENT REPORT message.

4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH RSCP
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-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
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	FALSE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

8.7.2.1.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.2.1.1.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2.2 CPICH Ec/Io

Void

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CHANGE REQUEST

⌘ **34.122** **CR** **143** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Introduction of CPICH RSCP measurement performance requirements for UTRA TDD (3.84 Mcps Option)
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**A** ***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	Performance requirements and test for the CPICH RSCP measurement for the purpose of handover evaluation from in UTRA TDD (3.84 Mcps Option) to FDD are still missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of CPICH RSCP measurement performance requirements and test for UTRA TDD (3.84 Mcps Option)
Consequences if not approved:	⌘	Missing performance requirements and test for the CPICH measurement in UTRA TDD (3.84 Mcps Option)

Clauses affected:	⌘	8.7.2

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

⌘

Other comments:	⌘	-

8.7.2 CPICH measurements (FDD)

8.7.2.1 CPICH RSCP

~~Void~~

8.7.2.1.1 Absolute measurement accuracy for 3.84 Mcps TDD Option

8.7.2.1.1.1 Definition and applicability

The absolute accuracy of CPICH RSCP is defined as the CPICH RSCP measured in an UTRA FDD cell on one frequency compared to the actual CPICH RSCP power of that cell on the same frequency.

The requirements and this test apply only to UE supporting both UTRA TDD and UTRA FDD.

8.7.2.1.1.2 Minimum Requirements

The accuracy requirements in table 8.7.2.1.1.1 are valid under the following conditions:

- CPICH_RSCP1,2$|_{dBm} \geq$ -114 dBm.

- $\left| \frac{I_o}{\hat{I}_{or}} \right|_{in\ dB} - \left| \frac{CPICH\_E_c}{I_{or}} \right|_{in\ dB} \leq 20dB$.

Table 8.7.2.1.1.1: CPICH RSCP inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/ 3.84 MHz]
CPICH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.2.1 and A.9.1.2.1.

8.7.2.1.1.3 Test purpose

The purpose of this test is to verify that the CPICH RSCP absolute measurement accuracy is within the specified limits.

8.7.2.1.1.4 Method of test

8.7.2.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

~~In this case all cells are on the same frequency.~~ In this case both cells are on different frequencies. Cell 1 is a UTRA TDD cell and cell 2 is a UTRA FDD cell. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3. No second Beacon timeslot shall be provided for cell 1. CPICH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in table 8.7.2.1.1.2.

Table 8.7.2.1.1.2: CPICH RSCP inter frequency tests parameters

Parameter	Unit	Test 1		Test 2	
		Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	n.a.	0	n.a.
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2
CPICH_Ec/Ior	dB	n.a.	-10	n.a.	-10
PCCPCH_Ec/Ior	dB	-3	-12	-3	-12
SCH_Ec/Ior	dB	-9	-12	-9	-12
SCH_t_{offset}		5	n.a.	5	n.a.
PICH_Ec/Ior	dB	n.a.	-15	n.a.	-15
OCNS_Ec/Ior	dB	-3.12	-0.94	-3.12	-0.94
Ioc	dBm/ 3.84 MHz	-57.7	-60	-84.7	-84
Îor/Ioc	dB	7	9.54	3	0
PCCPCH RSCP, Note 1	dBm	-53.7	n.a.	-84.7	n.a.
CPICH RSCP, Note 1	dBm	n.a.	-60.46	n.a.	-94
Io, Note 1	dBm/ 3.84 MHz	-50	-50	-80	-81
Propagation condition	-	AWGN		AWGN	
NOTE 1: PCCPCH RSCP, CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.					

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.2.1.1.2.

8.7.2.1.1.4.2 Procedure

1) SS shall transmit the MEASUREMENT CONTROL message for inter frequency measurement.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check CPICH RSCP value of Cell 2 in the MEASUREMENT REPORT messages. CPICH RSCP levels of Cell 2 reported by the UE is compared to the actual CPICH RSCP value of Cell 2 for each MEASUREMENT REPORT message.

4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.2.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurement (Step 1):

Information Element	Value/Remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command	Setup
-Measurement Reporting Mode	
- Measurement Report Transfer Mode	Acknowledged mode RLC
- Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurement list	Not Present
-CHOICE Measurement Type	Inter-frequency measurement
-Inter-frequency measurement object list	
-CHOICE Inter-frequency cell removal	Not Present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity	
-CHOICE reporting criteria	Inter-frequency reporting criteria
-Filter coefficient	0
-CHOICE mode	FDD
-Measurement quantity for frequency quality estimate	CPICH RSCP
-Inter-frequency reporting quantity	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-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
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	FALSE
-CPICH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity	Not Present
-Inter-frequency set update	Not Present
-CHOICE report criteria	Periodical reporting criteria
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info	Not Present

8.7.2.1.1.5 Test requirements

The CPICH RSCP measurement accuracy shall meet the requirements in clause 8.7.2.1.1.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2.1A.1 Absolute measurement accuracy for 1.28 Mcps TDD Option

Void

8.7.2.2 CPICH Ec/Io

Void

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San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030155

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CHANGE REQUEST

⌘ **34.122** **CR** **144** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

Title:	⌘	Introduction of Timeslot ISCP measurement performance requirements for UTRA TDD
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**F** ***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	Performance requirements and test for the Timeslot ISCP measurement in UTRA TDD are still missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of Timeslot ISCP measurement performance requirements and test for UTRA TDD
Consequences if not approved:	⌘	Missing performance requirements and test for the Timeslot ISCP measurement in UTRA TDD

Clauses affected:	⌘	8.7.3			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	-			

8.7.3 Timeslot ISCP

~~Void~~

8.7.3.1 Intra frequency measurement accuracy

8.7.3.1.1 Absolute accuracy requirement

8.7.3.1.1.1 Definition and applicability

The absolute accuracy of Timeslot ISCP is defined as the Timeslot ISCP meaasured from one cell / timeslot combination compared to the actual Timeslot ISCP level for the same cell / timeslot combination.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.3.1.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.3.1.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left.\left(\frac{P-CCPCH\_E_c}{I_o}\right)\right|_{in\ dB} \geq -8dB$$

$$\left.\left(\frac{SCH\_E_c}{I_o}\right)\right|_{in\ dB} \geq -13dB$$

Table 8.7.3.1.1.1: Timeslot ISCP intra frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal conditions	Extreme conditions	Io [dBm/ 3.84 MHz]
Timeslot ISCP	dB	± 6	± 9	-105..-74

The normative reference for this requirement is TS 25.123 [2] clauses 9.2.1.2.1.1 and A.9.1.3.

8.7.3.1.1.3 Test Purpose

The purpose of this test is to verify that the Timeslot ISCP measurement accuracy is within the specified limits.

8.7.3.1.1.4 Method of test

8.7.3.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The Timeslot ISCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.3.1.1.2.

Table 8.7.3.1.1.2: Timeslot ISCP intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	0	0	0	0	0
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.7		-59.8		-98.7	
Îor/Ioc	dB	5	2	9	2	3	0
Timeslot ISCP, Note 1	dBm	-73.7	-70.7	-57.8	-50.8	-98.7	-95.7
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: Timeslot ISCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.3.1.1.2.

8.7.3.1.1.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check Timeslot ISCP values for Cell 1 / Timeslot 0 and Cell 2 / Timeslot 0 combinations in MEASUREMENT REPORT messages. These Timeslot ISCP values reported by the UE are compared to the actual Timeslot ISCP levels for each MEASUREMENT REPORT message.

4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	
-CHOICE *Intra-frequency cell removal*	Not present
-New intra-frequency cells	2
-Intra-frequency cell id	1
-Cell info	
-Cell individual offset	0
-Reference time difference to cell	Not present
-Read SFN indicator	FALSE
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
-CHOICE *Sync case*	2
-Timeslot	0
-Cell parameters ID	Set to cell parameter ID of cell 1
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 1 as described in Table 8.7.3.1.2.
-Timeslot number	0
-Burst type	1
-Intra-frequency cell id	2
-Cell info	
-Cell individual offset	0
-Reference time difference to cell	Not present
-Read SFN indicator	FALSE
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
-CHOICE *Sync case*	2
-Timeslot	0
-Cell parameters ID	Set to cell parameter ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2 as described in Table 8.7.3.1.2.
-Timeslot number	0
-Burst type	1
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Timeslot ISCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE

Information Element/Group name	Value/Remark
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual / active set cells + 1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria* (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.3.1.1.5 Test requirements

The Timeslot ISCP measurement accuracy shall meet the requirements in clause 8.7.3.1.1.2 for at least 900 of the reported Timeslot ISCP levels at each input level in step 4 for both Cell 1 / Timeslot 0 and Cell 2 / Timeslot 0 combinations.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030156

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **145** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Introduction of Timeslot ISCP measurement performance requirements for UTRA TDD (3.84 Mcps Option)
Source:	⌘	T1-RF
Work item code:	⌘	
Date:	⌘	13/01/2003
Category:	⌘	**A**
Release:	⌘	Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	Performance requirements and test for the Timeslot ISCP measurement in UTRA TDD (3.84 Mcps Option) are still missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of Timeslot ISCP measurement performance requirements and test for UTRA TDD (3.84 Mcps Option)
Consequences if not approved:	⌘	Missing performance requirements and test for the Timeslot ISCP measurement in UTRA TDD (3.84 Mcps Option)

Clauses affected:	⌘	8.7.3

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

Other comments:	⌘	-

8.7.3 Timeslot ISCP

~~Void~~

8.7.3.1 Intra frequency measurement accuracy for 3.84 Mcps TDD Option

8.7.3.1.1 Absolute accuracy requirement

8.7.3.1.1.1 Definition and applicability

The absolute accuracy of Timeslot ISCP is defined as the Timeslot ISCP meaasured from one cell / timeslot combination compared to the actual Timeslot ISCP level for the same cell / timeslot combination.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.3.1.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.3.1.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left.\left(\frac{P-CCPCH\_E_c}{I_o}\right)\right|_{in\ dB} \geq -8dB$$

$$\left.\left(\frac{SCH\_E_c}{I_o}\right)\right|_{in\ dB} \geq -13dB$$

Table 8.7.3.1.1.1: Timeslot ISCP intra frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal conditions	Extreme conditions	Io [dBm/ 3.84 MHz]
Timeslot ISCP	dB	± 6	± 9	-105..-74

The normative reference for this requirement is TS 25.123 [2] clauses 9.2.1.2.1.1 and A.9.1.3.

8.7.3.1.1.3 Test Purpose

The purpose of this test is to verify that the Timeslot ISCP measurement accuracy is within the specified limits.

8.7.3.1.1.4 Method of test

8.7.3.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. The Timeslot ISCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.3.1.1.2.

Table 8.7.3.1.1.2: Timeslot ISCP intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	0	0	0	0	0
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.7		-59.8		-98.7	
Îor/Ioc	dB	5	2	9	2	3	0
Timeslot ISCP, Note 1	dBm	-73.7	-70.7	-57.8	-50.8	-98.7	-95.7
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: Timeslot ISCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.3.1.1.2.

8.7.3.1.1.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check Timeslot ISCP values for Cell 1 / Timeslot 0 and Cell 2 / Timeslot 0 combinations in MEASUREMENT REPORT messages. These Timeslot ISCP values reported by the UE are compared to the actual Timeslot ISCP levels for each MEASUREMENT REPORT message.

4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.3.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	
-CHOICE *Intra-frequency cell removal*	Not present
-New intra-frequency cells	2
-Intra-frequency cell id	1
-Cell info	
-Cell individual offset	0
-Reference time difference to cell	Not present
-Read SFN indicator	FALSE
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
-CHOICE *TDD option*	3.84 Mcps TDD
-CHOICE *Sync case*	2
-Timeslot	0
-Cell parameters ID	Set to cell parameter ID of cell 1
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 1 as described in Table 8.7.3.1.2.
-Timeslot number	0
-Burst type	1
-Intra-frequency cell id	2
-Cell info	
-Cell individual offset	0
-Reference time difference to cell	Not present
-Read SFN indicator	FALSE
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
-CHOICE *TDD option*	3.84 Mcps TDD
-CHOICE *Sync case*	2
-Timeslot	0
-Cell parameters ID	Set to cell parameter ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2 as described in Table 8.7.3.1.2.
-Timeslot number	0
-Burst type	1
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Timeslot ISCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	

Information Element/Group name	Value/Remark
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual / active set cells + 1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria* (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.3.1.1.5 Test requirements

The Timeslot ISCP measurement accuracy shall meet the requirements in clause 8.7.3.1.1.2 for at least 900 of the reported Timeslot ISCP levels at each input level in step 4 for both Cell 1 / Timeslot 0 and Cell 2 / Timeslot 0 combinations.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.3.1A Intra frequency measurement accuracy for 1.28 Mcps TDD Option

Void

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030157

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **146** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Introduction of UTRA carrier RSSI measurement performance requirements for UTRA TDD
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**F** ***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	Performance requirements and test for the UTRA carrier RSSI measurement in UTRA TDD are still missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of UTRA carrier RSSI measurement performance requirements and test for UTRA TDD
Consequences if not approved:	⌘	Missing performance requirements and test for the UTRA carrier RSSI measurement in UTRA TDD

Clauses affected:	⌘	8.7.4

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

Other comments:	⌘	-

8.7.4 UTRA carrier RSSI

~~Void~~

8.7.4.1 Absolute measurement accuracy

8.7.4.1.1 Definition and applicability

The absolute accuracy of UTRA carrier RSSI is defined as the UTRA carrier RSSI measured from one frequency compared to the actual UTRA carrier RSSI power of that same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.4.1.2 Minimum Requirements

Table 8.7.4.1.1: UTRA carrier RSSI inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/ 3.84 MHz]
UTRA carrier RSSI	dBm	± 4	± 7	-94...-70
	dBm	± 6	± 9	-70...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.4.

8.7.4.1.3 Test Purpose

The purpose of this test is to verify that the UTRA carrier RSSI measurement accuracy is within the specified limits.

8.7.4.1.4 Method of test

8.7.4.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. UTRA carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.4.1.2.

Table 8.7.4.1.2: UTRA carrier RSSI inter frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.1	-98.7	-97
Îor/Ioc	dB	5	5	7	2	3	0
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.1.2.

8.7.4.1.4.2 Procedure

1) SS shall transmit the MEASUREMENT CONTROL message for inter frequency measurements.

2) UE shall transmit periodically the MEASUREMENT REPORT messages.

3) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.

4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurement (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE *inter-frequency cell removal*	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE *reporting critera*	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE *report criteria* (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.4.1.5 Test requirements

The UTRA carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.4.1.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) shall be added into the required accuracy defined in subclause 8.7.4.1.2 as shown in table 8.7.4.1.3.

Table 8.7.4.1.3: UTRA carrier RSSI absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
UTRA carrier RSSI	dBm	-4…5.2	-7…8.2	-94…-87
	dBm	± 4	± 7	-87...-70
	dBm	± 6	± 9	-70...-50

The normative reference for this requirement is TS 25.123 [2] clause A.9.1.4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4.2 Relative measurement accuracy

8.7.4.2.1 Definition and applicability

The relative accuracy requirement is defined as the UTRA carrier RSSI measured from one frequency compared to the UTRA Carrier RSSI measured from another frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.4.2.2 Minimum Requirements

The accuracy requirements in table 8.7.4.2.1 are valid under the following condition:

$|\text{Channel 1 Io}|_{\text{dBm/3.84 MHz}} - \text{Channel 2 Io}|_{\text{dBm/3.84 MHz}}| < 20$ dB.

Table 8.7.4.2.1: UTRA carrier RSSI inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
UTRA carrier RSSI	dBm	± 7	± 11	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.4.

8.7.4.2.3 Test Purpose

The purpose of this test is to verify that the UTRA carrier RSSI measurement accuracy is within the specified limits.

8.7.4.2.4 Method of test

8.7.4.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. UTRA carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.4.1.2.

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.1.2.

8.7.4.2.4.2 Procedure

1) SS shall transmit the MEASUREMENT CONTROL message for Inter-frequency measurements.

2) UE shall transmit periodically the MEASUREMENT REPORT messages.

3) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.

4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to

table 8.7.4.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurements in clause 8.7.4.1.4.2 is used.

8.7.4.2.5 Test requirements

The UTRA carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.4.2.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) shall be added into the required accuracy defined in subclause 8.7.4.2.2 as shown in table 8.7.4.2.2.

Table 8.7.4.2.2: UTRA carrier RSSI relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
UTRA carrier RSSI	dBm	-4…5.2	-7…8.2	-94…-87
	dBm	± 4	± 7	-87…-70
	dBm	± 6	± 9	-70…-50

The normative reference for this requirement is TS 25.123 [2] clause A.9.1.4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

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CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **147** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Introduction of UTRA carrier RSSI measurement performance requirements for UTRA TDD (3.84 Mcps Option)
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘ **A**	***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	Performance requirements and test for the UTRA carrier RSSI measurement in UTRA TDD (3.84 Mcps Option) are still missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of UTRA carrier RSSI measurement performance requirements and test for UTRA TDD (3.84 Mcps Option)
Consequences if not approved:	⌘	Missing performance requirements and test for the UTRA carrier RSSI measurement in UTRA TDD (3.84 Mcps Option)

Clauses affected:	⌘	8.7.4

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

Other comments:	⌘	-

8.7.4 UTRA carrier RSSI

~~Void~~

8.7.4.1 Absolute measurement accuracy for 3.84 Mcps TDD Option

8.7.4.1.1 Definition and applicability

The absolute accuracy of UTRA carrier RSSI is defined as the UTRA carrier RSSI measured from one frequency compared to the actual UTRA carrier RSSI power of that same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.4.1.2 Minimum Requirements

Table 8.7.4.1.1: UTRA carrier RSSI inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/ 3.84 MHz]
UTRA carrier RSSI	dBm	± 4	± 7	-94...-70
	dBm	± 6	± 9	-70...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.4.

8.7.4.1.3 Test Purpose

The purpose of this test is to verify that the UTRA carrier RSSI measurement accuracy is within the specified limits.

8.7.4.1.4 Method of test

8.7.4.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. UTRA carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.4.1.2.

Table 8.7.4.1.2: UTRA carrier RSSI inter frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.1	-98.7	-97
Îor/Ioc	dB	5	5	7	2	3	0
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.1.2.

8.7.4.1.4.2 Procedure

1) SS shall transmit the MEASUREMENT CONTROL message for inter frequency measurements.

2) UE shall transmit periodically the MEASUREMENT REPORT messages.

3) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.

4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurement (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE *inter-frequency cell removal*	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE *reporting critera*	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	TRUE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE *report criteria* (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.4.1.5 Test requirements

The UTRA carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.4.1.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) shall be added into the required accuracy defined in subclause 8.7.4.1.2 as shown in table 8.7.4.1.3.

Table 8.7.4.1.3: UTRA carrier RSSI absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
UTRA carrier RSSI	dBm	-4…5.2	-7…8.2	-94…-87
	dBm	± 4	± 7	-87...-70
	dBm	± 6	± 9	-70...-50

The normative reference for this requirement is TS 25.123 [2] clause A.9.1.4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4.1A Absolute measurement accuracy for 1.28 Mcps TDD Option

Void

8.7.4.2 Relative measurement accuracy for 3.84 Mcps TDD Option

8.7.4.2.1 Definition and applicability

The relative accuracy requirement is defined as the UTRA carrier RSSI measured from one frequency compared to the UTRA Carrier RSSI measured from another frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.4.2.2 Minimum Requirements

The accuracy requirements in table 8.7.4.2.1 are valid under the following condition:

$|\text{Channel 1\_Io}|_{\text{dBm/3.84 MHz}} - \text{Channel 2\_Io}|_{\text{dBm/3.84 MHz}}| < 20$ dB.

Table 8.7.4.2.1: UTRA carrier RSSI inter frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
UTRA carrier RSSI	dBm	± 7	± 11	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.4.

8.7.4.2.3 Test Purpose

The purpose of this test is to verify that the UTRA carrier RSSI measurement accuracy is within the specified limits.

8.7.4.2.4 Method of test

8.7.4.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. UTRA carrier RSSI absolute accuracy requirements are tested by using test parameters in table 8.7.4.1.2.

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.4.1.2.

8.7.4.2.4.2 Procedure

1) SS shall transmit the MEASUREMENT CONTROL message for Inter-frequency measurements.

2) UE shall transmit periodically the MEASUREMENT REPORT messages.

3) SS shall check UTRA carrier RSSI value of Channel 2 in MEASUREMENT REPORT messages. UTRA carrier RSSI power of Channel 2 reported by UE is compared to actual UTRA carrier RSSI value of Channel 2 for each MEASUREMENT REPORT message.

4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.4.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurements in clause 8.7.4.1.4.2 is used.

8.7.4.2.5 Test requirements

The UTRA carrier RSSI absolute measurement accuracy shall meet the requirements in clause 8.7.4.2.2. The effect of assumed thermal noise and noise generated in the receiver (–99 dBm) shall be added into the required accuracy defined in subclause 8.7.4.2.2 as shown in table 8.7.4.2.2.

Table 8.7.4.2.2: UTRA carrier RSSI relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm/3.84 MHz]
UTRA carrier RSSI	dBm	-4…5.2	-7…8.2	-94…-87
	dBm	± 4	± 7	-87...-70
	dBm	± 6	± 9	-70...-50

The normative reference for this requirement is TS 25.123 [2] clause A.9.1.4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.4.2A Relative measurement accuracy for 1.28 Mcps TDD Option

Void

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030159

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CHANGE REQUEST

⌘ **34.122** **CR** **148** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

Title:	⌘	Introduction of measurement performance requirements for SFN-SFN type 1 in UTRA TDD (3.84 Mcps Option)
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**F** ***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	Performance requirements and test for the SFN-SFN type 1 measurement in UTRA TDD are still missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of measurement performance requirements and test for SFN-SFN type 1 in UTRA TDD
Consequences if not approved:	⌘	Missing performance requirements and test for the SFN-SFN type 1 measurement in UTRA TDD

Clauses affected:	⌘	8.7.8.1

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

Other comments:	⌘	-

8.7.8 SFN-SFN observed time difference

8.7.8.1 SFN-SFN observed time difference type 1

~~Void~~

8.7.8.1.1 Measurement accuracy

8.7.8.1.1.1 Definition and applicability

This measurement is specified in clause 5.1.10 of TS 25.225 [22]. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.8.1.1.2 Minimum requirements

The accuracy requirement in table 8.7.8.1.1.1 is valid under the following conditions:

P-CCPCH_RSCP1,2 ≥ -102 dBm..

$$\left|\text{P-CCPCH RSCP1}\right|_{in\ dBm} - \text{P-CCPCH RSCP2}\left|_{in\ dBm}\right| \le 20dB$$

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} \ge -13dB$$

where the received P-CCPCH Ec/Io is defined as,

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} = \left(\frac{P-CCPCH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}\Bigg|_{in\ dB}$$

and the received SCH Ec/Io is defined as,

$$\left(\frac{SCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} = \left(\frac{SCH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}\Bigg|_{in\ dB}$$

and SCH_Ec/Ior is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

Table 8.7.8.1.1.1: SFN-SFN observed time difference type 1 accuracy

Parameter	Unit	Accuracy [chip]	Conditions Io [dBm/3.84 MHz]
SFN-SFN observed time difference type 1	chip	+/-0,5	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.8 and A.9.1.8.

8.7.8.1.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-SFN observed time difference type 1 is within the limit specified in clause 8.7.8.1.1.2.

8.7.8.1.1.4 Method of test

8.7.8.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0…9830400 chip. The SFN-SFN observed time difference type 1 accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.8.1.1.2.

Table 8.7.8.1.1.2: SFN-SFN observed time difference type 1 intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.7	-98.7	-98.7
Îor/Ioc	dB	5	5	7	3	3	3
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.8.1.1.2.

8.7.8.1.1.4.2 Procedure

1) SS shall transmit the MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check "SFN-SFN observed time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to the actually set SFN-SFN observed time difference type 1 value for each MEASUREMENT REPORT message.

4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.8.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.8.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Periodical reporting Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE *mode* -Measurement quantity list	Intra-frequency measurement Not Present 0 TDD 1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -Timeslot ISCP reporting indicator -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	 Type 1 FALSE FALSE TDD FALSE TRUE TRUE
-Reporting quantities for monitored set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -Timeslot ISCP reporting indicator -Proposed TGSN reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	 Type 1 FALSE FALSE TDD FALSE FALSE TRUE TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -CHOICE *reported cell* -Maximum number of reported cells -Measurement validity (10.3.7.51) -CHOICE *report criteria* (10.3.7. -Periodical reporting criteria (10.3.7.53) -Amount of reporting -Reporting interval	 Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present

8.7.8.1.1.5 Test requirements

The SFN-SFN observed time difference type 1 accuracy shall meet the requirements in clause 8.7.8.1.1.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.8.2 SFN-SFN observed time difference type 2

Void

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

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CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **149** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Introduction of measurement performance requirements for SFN-SFN type 1 in UTRA TDD (3.84 Mcps Option)
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**A** ***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	Performance requirements and test for the SFN-SFN type 1 measurement in UTRA TDD (3.84 Mcps Option) are still missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of measurement performance requirements and test for SFN-SFN type 1 in UTRA TDD (3.84 Mcps Option)
Consequences if not approved:	⌘	Missing performance requirements and test for the SFN-SFN type 1 measurement in UTRA TDD (3.84 Mcps Option)

Clauses affected:	⌘	8.7.8.1

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

Other comments:	⌘	-

8.7.8 SFN-SFN observed time difference

8.7.8.1 SFN-SFN observed time difference type 1

~~Void~~

8.7.8.1.1 Measurement accuracy for 3.84 Mcps TDD Option

8.7.8.1.1.1 Definition and applicability

This measurement is specified in clause 5.1.10 of TS 25.225 [22]. The reference point for the SFN-SFN observed time difference type 1 shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.8.1.1.2 Minimum requirements

The accuracy requirement in table 8.7.8.1.1.1 is valid under the following conditions:

P-CCPCH_RSCP1,2 ≥ -102 dBm..

$$\left|\text{P-CCPCH RSCP1}\right|_{in\ dBm} - \text{P-CCPCH RSCP2}\left|_{in\ dBm}\right| \le 20dB$$

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} \ge -13dB$$

where the received P-CCPCH Ec/Io is defined as,

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} = \left(\frac{P-CCPCH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}\Bigg|_{in\ dB}$$

and the received SCH Ec/Io is defined as,

$$\left(\frac{SCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} = \left(\frac{SCH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}\Bigg|_{in\ dB}$$

and SCH_Ec/Ior is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

Table 8.7.8.1.1.1: SFN-SFN observed time difference type 1 accuracy

Parameter	Unit	Accuracy [chip]	Conditions Io [dBm/3.84 MHz]
SFN-SFN observed time difference type 1	chip	+/-0,5	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.8 and A.9.1.8.

8.7.8.1.1.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-SFN observed time difference type 1 is within the limit specified in clause 8.7.8.1.1.2.

8.7.8.1.1.4 Method of test

8.7.8.1.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0…9830400 chip. The SFN-SFN observed time difference type 1 accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.8.1.1.2.

Table 8.7.8.1.1.2: SFN-SFN observed time difference type 1 intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.7	-98.7	-98.7
Îor/Ioc	dB	5	5	7	3	3	3
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.8.1.1.2.

8.7.8.1.1.4.2 Procedure

1) SS shall transmit the MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check "SFN-SFN observed time difference type 1" value in MEASUREMENT REPORT message. The reported value shall be compared to the actually set SFN-SFN observed time difference type 1 value for each MEASUREMENT REPORT message.

4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.8.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.8.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Periodical reporting Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE *mode* -Measurement quantity list	Intra-frequency measurement Not Present 0 TDD 1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -Timeslot ISCP reporting indicator -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	 Type 1 FALSE FALSE TDD FALSE TRUE TRUE
-Reporting quantities for monitored set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -Timeslot ISCP reporting indicator -Proposed TGSN reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	 Type 1 FALSE FALSE TDD FALSE FALSE TRUE TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -CHOICE *reported cell* -Maximum number of reported cells -Measurement validity (10.3.7.51) -CHOICE *report criteria* (10.3.7. -Periodical reporting criteria (10.3.7.53) -Amount of reporting -Reporting interval	 Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present

8.7.8.1.1.5 Test requirements

The SFN-SFN observed time difference type 1 accuracy shall meet the requirements in clause 8.7.8.1.1.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.8.1.1A Measurement accuracy for 1.28 Mcps TDD Option

Void

8.7.8.2 SFN-SFN observed time difference type 2

Void

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030161

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CHANGE REQUEST

⌘ **34.122** **CR** **150** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Introduction of performance requirements for SFN-CFN observed time difference measurement in UTRA TDD
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**F** ***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	Performance requirements and test for the SFN-CFN observed time difference measurement in UTRA TDD are still missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of measurement performance requirements and test for SFN-CFN observed time difference in UTRA TDD
Consequences if not approved:	⌘	Missing performance requirements and test for the SFN-CFN observed time difference measurement in UTRA TDD

Clauses affected:	⌘	8.7.11

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

Other comments:	⌘	-

8.7.11 SFN-CFN observed time difference

~~Void~~

8.7.11.1 Intra frequency measurement requirement

8.7.11.1.1 Definition and applicability

The intra frequency SFN-CFN observed time difference is defined as the SFN-CFN observed time difference from the active cell to a neighbour cell that is in the same frequency. This measurement is specified in clause 5.1.11 of TS 25.225 [22]. The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.11.1.2 Minimum requirements

The accuracy requirement in table 8.7.11.1.1 is valid under the following conditions:

P-CCPCH RSCP1,2 ≥ -102 dBm..

$$\left|\text{P-CCPCH RSCP1}\right|_{in\ dBm} - \text{P-CCPCH RSCP2}\left|_{in\ dBm}\right| \le 20dB$$

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} \ge -13dB$$

where the received P-CCPCH Ec/Io is defined as,

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} = \left(\frac{P-CCPCH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}\Bigg|_{in\ dB}$$

and the received SCH Ec/Io is defined as,

$$\left(\frac{SCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} = \left(\frac{SCH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}\Bigg|_{in\ dB}$$

and SCH Ec/Ior is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

Table 8.7.11.1.1: SFN-CFN observed time difference accuracy for an intra frequency UTRA TDD neighbour cell

Parameter	Unit	Accuracy [chip]	Conditions Io [dBm/3.84 MHz]
SFN-CFN observed time difference	chip	+/-0,5	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.11 and A.9.1.10.

8.7.11.1.3 Test Purpose

The purpose of this test is to verify that the measurement accuracy of SFN-CFN observed time difference is within the limit specified in clause 8.7.11.1.2.

8.7.11.1.4 Method of test

8.7.11.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0…255 frames. The SFN-CFN observed time difference accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.11.1.2.

Table 8.7.11.1.2: SFN-CFN observed time difference intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3.12		-3.12		-3.12	
Ioc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.7	-98.7	-98.7
Îor/Ioc	dB	5	5	7	3	3	3
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.11.1.2.

8.7.11.1.4.2 Procedure

1) SS shall transmit the MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.11 of TS 25.225 [22]. This value shall be compared to the actually set SFN-CFN observed time difference value for each MEASUREMENT REPORT message.

4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Periodical reporting Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE *mode* -Measurement quantity list	Intra-frequency measurement Not Present 0 TDD 1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -Timeslot ISCP reporting indicator -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	 No report TRUE TRUE TDD FALSE TRUE TRUE
-Reporting quantities for monitored set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -Timeslot ISCP reporting indicator -Proposed TGSN reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	 No report TRUE TRUE TDD FALSE FALSE TRUE TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -CHOICE *reported cell* -Maximum number of reported cells -Measurement validity (10.3.7.51) -CHOICE *report criteria* (10.3.7. -Periodical reporting criteria (10.3.7.53) -Amount of reporting -Reporting interval	 Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present

8.7.11.1.5 Test requirements

The SFN-CFN observed time difference accuracy shall meet the requirements in clause 8.7.11.1.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.11.2 Inter frequency measurement requirement

8.7.11.2.1 Definition and applicability

The inter frequency SFN-CFN observed time difference is defined as the SFN-CFN time difference from the active cell to a UTRA TDD neighbour cell that is in a different frequency. This measurement is specified in clause 5.1.11 of TS 25.225 [22]. The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.11.2.2 Minimum requirements

The accuracy requirement in table 8.7.11.2.1 is valid under the following conditions:

P-CCPCH_RSCP1,2 ≥ -102 dBm..

$$\left|\text{P-CCPCH RSCP1}\right|_{in\ dBm} - \text{P-CCPCH RSCP2}\left|_{in\ dBm}\right| \le 20dB$$

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} \ge -13dB$$

where the received P-CCPCH Ec/Io is defined as,

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} = \left(\frac{P-CCPCH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}\Bigg|_{in\ dB}$$

and the received SCH Ec/Io is defined as,

$$\left(\frac{SCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} = \left(\frac{SCH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}\Bigg|_{in\ dB}$$

and SCH Ec/Ior is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

Table 8.7.11.2.1: SFN-CFN observed time difference accuracy for an inter frequency UTRA TDD neighbour cell

Parameter	Unit	Accuracy [chip]	Conditions Io [dBm/3.84 MHz]
SFN-CFN observed time difference	chip	+/-0,5	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.11 and A.9.1.10.

8.7.11.2.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-CFN observed time difference is within the limit specified in clause 8.7.11.2.2.

8.7.11.2.4 Method of test

8.7.11.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case, UTRA TDD cell 1 and UTRA TDD cell 2 are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0…256 frames. The SFN-CFN observed time difference accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.11.2.2.

Table 8.7.11.2.2: SFN-CFN observed time difference inter frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.7	-98.7	-98.7
Îor/Ioc	dB	5	5	7	3	3	3
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.11.2.2.

8.7.11.2.4.2 Procedure

1) SS shall transmit the MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.11 of TS 25.225 [22]. This value shall be compared to the actually set SFN-CFN observed time difference value for each MEASUREMENT REPORT message.

4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.2.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.2.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurements (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE *inter-frequency cell removal*	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE *reporting critera*	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE
-Cell identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE *report criteria* (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.11.2.5 Test requirements

The SFN-CFN observed time difference accuracy shall meet the requirements in clause 8.7.11.2.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030162

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **151** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Introduction of performance requirements for SFN-CFN observed time difference measurement in UTRA TDD (3.84 Mcps Option)
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**A** ***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	Performance requirements and test for the SFN-CFN observed time difference measurement in UTRA TDD (3.84 Mcps Option) are still missing from the current version of TS 34.122.
Summary of change:	⌘	Introduction of measurement performance requirements and test for SFN-CFN observed time difference in UTRA TDD (3.84 Mcps Option)
Consequences if not approved:	⌘	Missing performance requirements and test for the SFN-CFN observed time difference measurement in UTRA TDD (3.84 Mcps Option)

Clauses affected:	⌘	8.7.11

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

Other comments: ⌘ -

8.7.11 SFN-CFN observed time difference

~~Void~~

8.7.11.1 Intra frequency measurement requirement for 3.84 Mcps option

8.7.11.1.1 Definition and applicability

The intra frequency SFN-CFN observed time difference is defined as the SFN-CFN observed time difference from the active cell to a neighbour cell that is in the same frequency. This measurement is specified in clause 5.1.11 of TS 25.225 [22]. The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.11.1.2 Minimum requirements

The accuracy requirement in table 8.7.11.1.1 is valid under the following conditions:

P-CCPCH_RSCP1,2 ≥ -102 dBm..

$$\left| \text{P-CCPCH RSCP1}\big|_{in\ dBm} - \text{P-CCPCH RSCP2}\big|_{in\ dBm} \right| \le 20dB$$

$$\left(\frac{P-CCPCH\_E_c}{I_o} \right)\Big|_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o} \right)\Big|_{in\ dB} \ge -13dB$$

where the received P-CCPCH Ec/Io is defined as,

$$\left(\frac{P-CCPCH\_E_c}{I_o} \right)\Big|_{in\ dB} = \left(\frac{P-CCPCH\_E_c}{I_{or}} \right)\Big|_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}\Big|_{in\ dB}$$

and the received SCH Ec/Io is defined as,

$$\left(\frac{SCH\_E_c}{I_o} \right)\Big|_{in\ dB} = \left(\frac{SCH\_E_c}{I_{or}} \right)\Big|_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}\Big|_{in\ dB}$$

and SCH_Ec/Ior is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

Table 8.7.11.1.1: SFN-CFN observed time difference accuracy for an intra frequency UTRA TDD neighbour cell

Parameter	Unit	Accuracy [chip]	Conditions Io [dBm/3.84 MHz]
SFN-CFN observed time difference	chip	+/-0,5	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.11 and A.9.1.10.

8.7.11.1.3 Test Purpose

The purpose of this test is to verify that the measurement accuracy of SFN-CFN observed time difference is within the limit specified in clause 8.7.11.1.2.

8.7.11.1.4 Method of test

8.7.11.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0…255 frames. The SFN-CFN observed time difference accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.11.1.2.

Table 8.7.11.1.2: SFN-CFN observed time difference intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3.12		-3.12		-3.12	
Ioc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.7	-98.7	-98.7
Îor/Ioc	dB	5	5	7	3	3	3
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.11.1.2.

8.7.11.1.4.2 Procedure

1) SS shall transmit the MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.11 of TS 25.225 [22]. This value shall be compared to the actually set SFN-CFN observed time difference value for each MEASUREMENT REPORT message.

4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Periodical reporting Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE *mode* -Measurement quantity list	Intra-frequency measurement Not Present 0 TDD 1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -Timeslot ISCP reporting indicator -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	 No report TRUE TRUE TDD FALSE TRUE TRUE
-Reporting quantities for monitored set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -Timeslot ISCP reporting indicator -Proposed TGSN reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	 No report TRUE TRUE TDD FALSE FALSE TRUE TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -CHOICE *reported cell* -Maximum number of reported cells -Measurement validity (10.3.7.51) -CHOICE *report criteria* (10.3.7. -Periodical reporting criteria (10.3.7.53) -Amount of reporting -Reporting interval	 Report all active set cells + cells within monitored set on used frequency Virtual/active set cells + 2 Not Present Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present

8.7.11.1.5 Test requirements

The SFN-CFN observed time difference accuracy shall meet the requirements in clause 8.7.11.1.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.11.1A Intra frequency measurement requirement for 1.28 Mcps option

Void

8.7.11.2 Inter frequency measurement requirement for 3.84 Mcps option

8.7.11.2.1 Definition and applicability

The inter frequency SFN-CFN observed time difference is defined as the SFN-CFN time difference from the active cell to a UTRA TDD neighbour cell that is in a different frequency. This measurement is specified in clause 5.1.11 of TS 25.225 [22]. The reference point for the SFN-CFN observed time difference shall be the antenna connector of the UE.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.11.2.2 Minimum requirements

The accuracy requirement in table 8.7.11.2.1 is valid under the following conditions:

P-CCPCH_RSCP1,2 ≥ -102 dBm..

$$\left|\text{P-CCPCH RSCP1}\right|_{in\ dBm} - \text{P-CCPCH RSCP2}\left|_{in\ dBm}\right| \le 20dB$$

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} \ge -13dB$$

where the received P-CCPCH Ec/Io is defined as,

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} = \left(\frac{P-CCPCH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}\Bigg|_{in\ dB}$$

and the received SCH Ec/Io is defined as,

$$\left(\frac{SCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} = \left(\frac{SCH\_E_c}{I_{or}}\right)\Bigg|_{in\ dB} - \frac{I_o}{\left(\hat{I}_{or}\right)}\Bigg|_{in\ dB}$$

and SCH_Ec/Ior is equally divided between primary synchronisation code and the sum of all secondary synchronisation codes, where the secondary synchronisation codes are also equally divided.

Table 8.7.11.2.1: SFN-CFN observed time difference accuracy for an inter frequency UTRA TDD neighbour cell

Parameter	Unit	Accuracy [chip]	Conditions Io [dBm/3.84 MHz]
SFN-CFN observed time difference	chip	+/-0,5	-94...-50

The normative reference for this requirement is TS 25.123 [2] clause 9.1.1.11 and A.9.1.10.

8.7.11.2.3 Test purpose

The purpose of this test is to verify that the measurement accuracy of SFN-CFN observed time difference is within the limit specified in clause 8.7.11.2.2.

8.7.11.2.4 Method of test

8.7.11.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case, UTRA TDD cell 1 and UTRA TDD cell 2 are on different frequencies. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. During the test, the timing difference between cell 1 and cell 2 can be set to any value from 0…256 frames. The SFN-CFN observed time difference accuracy requirements in the intra-frequency case are tested by using test parameters in Table 8.7.11.2.2.

Table 8.7.11.2.2: SFN-CFN observed time difference inter frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.7	-98.7	-98.7
Îor/Ioc	dB	5	5	7	3	3	3
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.11.2.2.

8.7.11.2.4.2 Procedure

1) SS shall transmit the MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check "OFF" and "Tm" values in MEASUREMENT REPORT message and calculate SFN-CFN observed time difference value according to the definition in clause 5.1.11 of TS 25.225 [22]. This value shall be

compared to the actually set SFN-CFN observed time difference value for each MEASUREMENT REPORT message.

4) SS shall count the number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.2.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.11.2.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above are repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for inter frequency measurements (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE *inter-frequency cell removal*	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE *reporting critera*	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE
-Cell identity reporting indicator	TRUE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE *report criteria* (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.11.2.5 Test requirements

The SFN-CFN observed time difference accuracy shall meet the requirements in clause 8.7.11.2.2.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.11.2A Inter frequency measurement requirement for 1.28 Mcps option

Void

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA 10th-14th February 2003

Tdoc ⌘T1-030163

CR-Form-v7

CHANGE REQUEST

⌘ **TS 34.122 CR 152** ⌘**rev** **-** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Addition of TDD-GSM handover case for UTRA TDD
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 17/01/2003
Category:	⌘	**F** ***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	Test Case for TDD-GSM handover is missing from the current version of 34.122
Summary of change:	⌘	Addition of Test Case for TDD-GSM handover
Consequences if not approved:	⌘	34.122 will be inconsistent with 25.123

Clauses affected:	⌘	8.3.3

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

⌘

Other comments: ⌘

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

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

8.3.3 Inter-system Handover from UTRAN TDD to GSM

Void.

8.3.3.1 Definition and applicability

The UTRAN to GSM cell handover interruption time is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission on the channel of the new RAT.

The requirements and this test apply to the combined TDD (3,84 Mcps option) and GSM UE.

8.3.3.2 Minimum requirement

The interruption time shall be less than 40 ms in the case where the UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.3.2 and A.5.3.

8.3.3.3 Test purpose

To verify that the UE meets the minimum requirement.

8.3.3.4 Method of test

8.3.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

[Editor's Note: Annex G.2 must be specified also for GSM; for instance as a reference to TS 51.010-1 clause A1.2]

The test parameters are given in Table 8.3.3.1, 8.3.3.2 and 8.3.3.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a HANDOVER FROM UTRAN COMMAND message with activation time at beginning of T3 with one active cell, cell 2. The HANDOVER FROM UTRAN COMMAND message shall be sent to the UE such that the delay between the last the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [9]. In the GSM Handover command contained in this message, IE starting time shall not be included.

Cell 1 is a UTRA TDD cell and cell 2 is a GSM cell. The Beacon timeslot shall be transmitted in timeslot 0 for cell 1 and no second Beacon timeslot shall be provided for cell 1. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3.

Table 8.3.3.1: General test parameters for TDD/GSM handover

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	UTRA TDD cell
	Neighbour cell	Cell 2	GSM cell
Final condition	Active cell	Cell 2	GSM cell
Inter-RAT measurement quantity		GSM carrier RSSI	
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for Event 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		12 TDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before the start of time period T1.
$T_{identify\ abort}$	s	5	
$T_{reconfirm\ abort}$	s	5	
T1	s	10	
T2	s	10	
T3	s	10	

Table 8.3.3.2: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1					
DL timeslot number		0			1		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1					
PCCPCH_Ec/Ior	dB	-3			n.a.		
SCH_Ec/Ior	dB	-9			n.a.		
SCH_t_{offset}	dB	0			n.a.		
DPCH_Ec/Ior	dB	n.a.			Note 1		n.a.
OCNS_Ec/Ior	dB	-3,12			Note 2		n.a.
$\hat{I}_{or}/I_{oc}$	dB	6			6		
PCCPCH RSCP	dBm	-68			n.a.		
I_{oc}	dBm/ 3,84 MHz	-70					
Propagation Condition		AWGN					

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior .

Table 8.3.3.3: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2, T3
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-85	-75

8.3.3.4.2 Procedure

1) The RF parameters for cell 1 are set up according to T1.

2) The UE is switched on

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4

4) The RF parameters for cell 2 are set up according to T1 and the SS configures a traffic channel

5) SS shall transmit a MEASUREMENT CONTROL message to cell 1

6) After 10 seconds, the SS shall switch the power settings from T1 to T2

7) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C

8) SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time at T3 and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell.

9) After 10 seconds, the SS shall switch the power settings from T2 to T3

10) UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANDOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 40 ms from the beginning of time period T3, then the number of successful tests is increased by one.

[Editor's note: TS 34.108, 7.3.4 shall specify the messages HANDOVER ACCESS, PHYSICAL INFORMATION, SABM, UA and HANDOVER COMPLETE]

11) After 10 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

12) Repeat step 1-11 [TBD] times

Specific Message Contents

All messages indicated belowabove shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

MEASUREMENT CONTROL message (step 5):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	4
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate (10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	1
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	Value/remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Activation time	At T3
RB information elements	
-RAB information list	1
-RAB Info	Not present
Other information elements	
-CHOICE System type	GSM
-Frequency Band	GSM/DCS 1800 Band
-GSM message	
-Single GSM message	[TBD]
-GSM message List	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 TS 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 3

MEASUREMENT REPORT message (step 7)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-RAT Measured results list
-Inter-RAT-frequency measured results (10.3.7.26)	1
-CHOICE System	GSM
-Measured GSM cells	1
-GSM Carrier RSSI	Checked that this IE is present
-CHOICE BSIC	Verified BSIC
-inter-RAT cell id	Checked that this IE is present
-Observed Time difference to GSM cell	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-RAT measurement event results
-Inter-RAT event identity	3C
-Cells to report	1
-CHOICE BSIC	Verified BSIC
-inter-RAT cell id	Checked that this IE is present

8.3.3.5 Test requirements

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA 10th-14th February 2003

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CR-Form-v7

CHANGE REQUEST

⌘ **TS 34.122 CR 153** ⌘**rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Addition of TDD-GSM handover case for UTRA TDD
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 17/01/2003
Category:	⌘ **A**	***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	Test Case for TDD-GSM handover is missing from the current version of 34.122
Summary of change:	⌘	Addition of Test Case for TDD-GSM handover
Consequences if not approved:	⌘	34.122 will be inconsistent with 25.123

Clauses affected:	⌘	8.3.3			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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

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

8.3.3 Inter-system Handover from UTRAN TDD to GSM

Void.

8.3.3.1 Definition and applicability

8.3.3.1.1 3,84 Mcps option

The UTRAN to GSM cell handover interruption time is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission on the channel of the new RAT.

The requirements and this test apply to the combined TDD (3,84 Mcps option) and GSM UE.

8.3.3.1.2 1,28 Mcps option

Void.

8.3.3.2 Minimum requirement

8.3.3.2.1 3,84 Mcps option

The interruption time shall be less than 40 ms in the case where the UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.3.2 and A.5.3.

8.3.3.2.2 1,28 Mcps option

Void.

8.3.3.3 Test purpose

8.3.3.3.1 3,84 Mcps option

To verify that the UE meets the minimum requirement.

8.3.3.3.2 1,28 Mcps option

Void.

8.3.3.4 Method of test

8.3.3.4.1 3,84 Mcps option

8.3.3.4.1.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

[Editor's Note: Annex G.2 must be specified also for GSM; for instance as a reference to TS 51.010-1 clause A1.2]

The test parameters are given in Table 8.3.3.1, 8.3.3.2 and 8.3.3.3 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 3C shall be used. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a HANDOVER FROM UTRAN COMMAND message with activation time at beginning of T3 with one active cell, cell 2. The HANDOVER FROM UTRAN COMMAND message shall be sent to the UE such that the delay between the last the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [9]. In the GSM Handover command contained in this message, IE starting time shall not be included.

Cell 1 is a UTRA TDD cell and cell 2 is a GSM cell. The Beacon timeslot shall be transmitted in timeslot 0 for cell 1 and no second Beacon timeslot shall be provided for cell 1. The DL DPCH shall be transmitted in timeslot 1 and the UL DPCH shall be transmitted in timeslot 3.

Table 8.3.3.1: General test parameters for TDD/GSM handover

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.2.2
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Initial conditions	Active cell	Cell 1	UTRA TDD cell
	Neighbour cell	Cell 2	GSM cell
Final condition	Active cell	Cell 2	GSM cell
Inter-RAT measurement quantity		GSM carrier RSSI	
BSIC verification required		Required	
Threshold other system	dBm	-80	Absolute GSM carrier RSSI threshold for Event 3C.
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		12 TDD neighbours on Channel 1 6 GSM neighbours including ARFCN 1	Measurement control information is sent before the start of time period T1.
$T_{identify\ abort}$	s	5	
$T_{reconfirm\ abort}$	s	5	
T1	s	10	
T2	s	10	
T3	s	10	

Table 8.3.3.2: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 1)

Parameter	Unit	Cell 1					
DL timeslot number		0			1		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1					
PCCPCH Ec/Ior	dB	-3			n.a.		
SCH Ec/Ior	dB	-9			n.a.		
SCH t_{offset}	dB	0			n.a.		
DPCH Ec/Ior	dB	n.a.			Note 1		n.a.
OCNS Ec/Ior	dB	-3,12			Note 2		n.a.
$\hat{I}_{or}/I_{oc}$	dB	6			6		
PCCPCH RSCP	dBm	-68			n.a.		
I_{oc}	dBm/ 3,84 MHz	-70					
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior .							

Table 8.3.3.3: Cell Specific Parameters for Handover UTRAN to GSM cell case (cell 2)

Parameter	Unit	Cell 2	
		T1	T2, T3
Absolute RF Channel Number		ARFCN 1	
RXLEV	dBm	-85	-75

8.3.3.4.1.2 Procedure

1) The RF parameters for cell 1 are set up according to T1.

2) The UE is switched on

3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4

4) The RF parameters for cell 2 are set up according to T1 and the SS configures a traffic channel

5) SS shall transmit a MEASUREMENT CONTROL message to cell 1

6) After 10 seconds, the SS shall switch the power settings from T1 to T2

7) UE shall transmit a MEASUREMENT REPORT message triggered by event 3C

8) SS shall transmit a HANDOVER FROM UTRAN COMMAND message with activation time at T3 and indicating the traffic channel of the target GSM cell to the UE through DCCH of the serving UTRAN cell.

9) After 10 seconds, the SS shall switch the power settings from T2 to T3

10) UE shall transmit a burst on the traffic channel of cell 2 implying that it has switched to the GSM cell. The UE sends a HANDOVER ACCESS message. If the UE transmits access bursts on the new DCCH of the target cell less than 40 ms from the beginning of time period T3, then the number of successful tests is increased by one.

[Editor's note: TS 34.108, 7.3.4 shall specify the messages HANDOVER ACCESS, PHYSICAL INFORMATION, SABM, UA and HANDOVER COMPLETE]

11) After 10 seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

12) Repeat step 1-11 [TBD] times

Specific Message Contents

All messages indicated belowabove shall use the same content as described in the default message content in clause 9 of 34.108 [3] ~~and in Annex A of 34.123-1 [21],~~ with the following exceptions:

MEASUREMENT CONTROL message (step 5):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	4
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-RAT measurement
-Inter-RAT measurement (10.3.7.27)	
-Inter-RAT measurement objects list (10.3.7.23)	Not Present
-Inter-RAT measurement quantity (10.3.7.29)	
-Measurement quantity for UTRAN quality estimate (10.3.7.38)	
-Filter coefficient	0
-CHOICE mode	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-CHOICE system	GSM
-Measurement quantity	GSM Carrier RSSI
-Filter coefficient	0
-BSIC verification required	Required
-Inter-RAT reporting quantity (10.3.7.32)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report cells within active set or within virtual active set or of the other RAT
-Maximum number of reported cells	2
-CHOICE report criteria	Inter-RAT measurement reporting criteria
-Inter-RAT measurement reporting criteria (10.3.7.30)	
-Parameters required for each event	1
-Inter-RAT event identity (10.3.7.24)	Event 3C
-Threshold own system	Not Present
-W	Not Present
-Threshold other system	-80 dBm
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

HANDOVER FROM UTRAN COMMAND message (step 8):

Information Element	Value/remark
Message Type	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Activation time	At T3
RB information elements	
-RAB information list	1
-RAB Info	Not present
Other information elements	
-CHOICE System type	GSM
-Frequency Band	GSM/DCS 1800 Band
-GSM message	
-Single GSM message	[TBD]
-GSM message List	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 TS 51.010, except that the CHANNEL MODE IE is included with value = speech full rate or half rate version 3

MEASUREMENT REPORT message (step 7)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-RAT Measured results list
-Inter-RAT-frequency measured results (10.3.7.26)	1
-CHOICE System	GSM
-Measured GSM cells	1
-GSM Carrier RSSI	Checked that this IE is present
-CHOICE BSIC	Verified BSIC
-inter-RAT cell id	Checked that this IE is present
-Observed Time difference to GSM cell	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-RAT measurement event results
-Inter-RAT event identity	3C
-Cells to report	1
-CHOICE BSIC	Verified BSIC
-inter-RAT cell id	Checked that this IE is present

8.3.3.4.2 1,28 Mcps option

Void.

8.3.3.5 Test requirements

8.3.3.5.1 3,84 Mcps option

For the test to pass, the total number of successful tests shall be more than 90% with a confidence level of [FFS]% of the cases.

Note: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.3.5.2 1,28 Mcps option

Void.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘ T1-030165

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **154** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Correction to Cell Re-selection in CELL_PCH and URA_PCH test cases
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 17/01/2003
Category:	⌘ **F**	***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change: ⌘ 1.) It is not clear in the procedure what should happen in the event of an error
2.) The RRC procedure delay of system information blocks defined in 25.331 is not accounted for in 25.123 or in 34.122.

3.) Periodical Location Updating timer and periodical Routing Area Updating timer is set up in the generic set-up procedure described in TS 34.108 subclause 7.4.2. Hence the UE may perform a Location Updating or Routing Area Updating procedure that is not expected in test procedure since UE is in CELL_PCH/URA_UPDATE states, and so the test procedure is not executed correctly. Periodical cell update/ura update procedures are also initiated in CELL_PCH/URA_PCH states according to T305.

4) The beginning of time period T1 isn't clear in “Procedure”.

5)It is not clear how random access procedure is terminated in test procedure.

Summary of change: ⌘ 1) An error recovery process is proposed that avoids the possibility of double counting errors.

2) T_{SI} of 1280 ms is increased by the maximum RRC procedure delay for Broadcast of system information described in TS25.331 13.5.2. This is 100 ms as maximum. Therefore Tsi is set to 1380ms. Tsi is explained in test procedure.

3) Test procedure described in TS34.108 7.3.3 in which periodical AS and NAS timers are deactivated is used in this test case with a modification as IE ”RRC State Indicator” in RADIO BEARER SETUP (STEP3) is set to “CELL_PCH”/”URA_PCH”.
4) The timing when call set up has completed at step 3 is made the beginning of time period T1.
5) CELL UPDATE CONFIRM/URA UPDATE CONFIRM message is used to

		terminate the random access procedure.
Consequences if not approved:	⌘	1) This test case may give false readings which may unfairly penalise a good UE. 34.122 and 25.123 will be inconsistent. 2) The test procedure cannot be executed properly with a compliant UE and test requirement cannot be met. 3) Ability beyond Minimum requirement is required. Even “Good UE” may not pass this test. 4) Test procedure will not terminate properly

Clauses affected:	⌘	8.3.5 and 8.3.6			
Other specs affected:	⌘	**Y**	**N**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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

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

8.3.5 Cell Re-selection in CELL_PCH

8.3.5.1 Scenario 1: TDD/TDD cell re-selection single carrier case

8.3.5.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell , and starts to send the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the TDD UE.

8.3.5.1.2 Minimum requirement

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{evaluateTDD} + T_{SI}$, where:

$T_{evaluateTDD}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{evaluate\ TDD}$ of 6.4s according to TS 25.123 [2] table 4.1 in clause 4.2.2.7.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.5 and A.5.5.1.

8.3.5.1.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in CELL_PCH for the single carrier case

8.3.5.1.4 Method of test

8.3.5.1.4.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.5.1.1, and 8.3.5.1.1.2.

Table 8.3.5.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T_{SI}		s	1.28	The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.3.5.1.2: Cell re-selection single carrier multi-cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
Timeslot Number		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1$_{s,n}$	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1, C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1$_s$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
		Cell 4				**Cell 5**				**Cell 6**			
Timeslot		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1$_{s,n}$	dB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1$_s$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/3, 84 MHz	-70											
Propagation Condition		AWGN											

8.3.5.1.4.2 Procedure

a) The SS activates cell 1-6 with T1 defined parameters.

b) The UE is switched on.

c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.1 to place the UE in the CELL_PCH state on Cell 1 and then the SS waits for this process to complete.

d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.

e) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause “cell reselection”) within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step g). ~~The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.~~

f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step g) ~~The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "CELL_PCH"~~.

g) After a total of ~~another~~ 15 s from the beginning of T2, the parameters are changed as described for T1.

h) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause “cell reselection”) within 8s, then a success is recorded and the procedure moves to step j)~~The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE~~.

i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step j).

j) ~~–~~Repeat steps d) to ~~g)~~i) [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

RADIO BEARER SETUP (STEP3)

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	7

8.3.5.1.5 Test Requirements

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

~~1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).~~

~~2) In step e), the UE shall respond on cell 2 within 8 s.~~

~~3) In step h), the UE shall respond on cell 1 within 8 s.~~

~~For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.~~

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

8.3.5.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell , and starts to send the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the option TDD UE.

8.3.5.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{evaluateTDD} + T_{SI}$, where:

$T_{evaluateTDD}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{evaluate\ TDD}$ of 6.4s according to TS 25.123 [2] table 4.1 in clause 4.2.2.7.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.5 and A.5.5.2.

8.3.5.2.3 Test purpose

This test verifies that the UE meets the requirement for the cell re-selection delay in CELL_PCH for the multi carrier case.

8.3.5.2.4 Method of test

8.3.5.2.4.1.1 Initial conditions

This scenario contains 6 cells and 2 carrier frequencies. The test parameters are given in Tables 8.3.5.2.1 and 8.3.5.2.2.

Table 8.3.5.2.1: General test parameters for Cell Re-selection in Multi carrier case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T_{SI}		s	1.28	The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	30	
T2		s	15	

Table 8.3.5.2.2: Cell re-selection multi carrier multi cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
Timeslot Number		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3
PCCPCH RSCP	dBm	-67	-73			-73	-67			-76	-76		
Qoffset1$_{s,n}$	dB	C1, C2: 0; C1, C3:0; C1,C4:0C1, C5:0; C1, C6:0				C2, C1: 0; C2, C3:0; C2,C4:0C2, C5:0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			
Qhyst1$_s$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
		Cell 4				**Cell 5**				**Cell 6**			
Timeslot		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 2				Channel 2			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76		
Qoffset1$_{s,n}$	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1$_s$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/3, 84 MHz	-70											
Propagation Condition		AWGN											

8.3.5.2.4.2 Procedure

a) The SS activates cell 1-6 with T1 defined parameters.

b) The UE is switched on.

c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.1 to place the UE in the CELL_PCH state on Cell 1 and then the SS waits for this process to complete.

d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.

e) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause “cell reselection”) within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step g). ~~The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.~~

f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step g) ~~The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "CELL_PCH"~~.

g) After a total of~~another~~ 15 s from the beginning of T2, the parameters are changed as described for T1.

h) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause “cell reselection”) within 8s, then a success is recorded and the procedure moves to step j)~~The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE~~.

i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step j).

j) Repeat steps d) to i~~g~~) [TBD] times.

NOTE: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (STEP3)

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	7

8.3.5.2.5 Test Requirements

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

~~1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).~~

~~2) In step e), the UE shall respond on cell 1 within 8 s.~~

~~3) In step h), the UE shall respond on cell 2 within 8 s.~~

~~For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.~~

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6 Cell Re-selection in URA_PCH

8.3.6.1 Scenario 1: TDD/TDD cell re-selection single carrier case

8.3.6.1.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell , and starts to send the URA UPDATE message with cause value "change of URA" in the new cell.

The requirements and this test apply to the TDD UE.

8.3.6.1.2 Minimum requirement

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{evaluateTDD} + T_{SI}$, where:

$T_{evaluateTDD}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{evaluate\ TDD}$ of 6.4s according to TS25.123 [2] table 4.1 in clause 4.2.2.7.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.6 and A.5.6.1.

8.3.6.1.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in URA_PCH for the single carrier case.

8.3.6.1.4 Method of test

8.3.6.1.4.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.6.1.1, and 8.3.6.1.2.

Table 8.3.6.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T_{SI}		s	1.28	The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.3.6.1.2: Cell re-selection single carrier multi-cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
Timeslot Number		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1$_{s,n}$	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1$_s$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
		Cell 4				**Cell 5**				**Cell 6**			
Timeslot		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	DBm	-74	-74			-74	-74			-74	-74		
Qoffset1$_{s,n}$	DB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1$_s$	DB	0				0				0			
Treselection	S	0				0				0			
Sintrasearch	DB	not sent				not sent				not sent			
I_{oc}	dBm/3, 84 MHz	-70											
Propagation Condition		AWGN											

8.3.6.1.4.2 Procedure

a) The SS activates cell 1-6 with T1 defined parameters.

b) The UE is switched on.

c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.2 to place the UE in the URA_PCH state on Cell 1 and then the SS waits for this process to complete.

d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.

e) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause “change of URA”) within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step g)~~The SS waits for URA UPDATE message with cause value "change of URA" from the UE~~.

f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step g).~~The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "URA_PCH".~~

g) After a total of ~~another~~ 15 s from the beginning of T2, the parameters are changed as described for T1.

h) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause “change of URA”) within 8s, then a success is recorded and the procedure moves to step j).~~The SS waits for URA UPDATE message with cause value "change of URA" from the UE.~~

i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step j).

j) Repeat steps d) to i~~g~~) [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (STEP3)

Information Element	Value/remark
RRC State Indicator	URA PCH
UTRAN DRX cycle length coefficient	7

8.3.6.1.5 Test Requirements

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

~~1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).~~

~~2) In step e), the UE shall respond on cell 2 within 8 s.~~

~~3) In step h), the UE shall respond on cell 1 within 8 s.~~

~~For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.~~

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

8.3.6.2.1 Definition and applicability

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell , and starts to send the URA UPDATE message with cause value "change of URA" in the new cell.

The requirements and this test apply to the TDD UE.

8.3.6.2.2 Minimum requirement

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{evaluateTDD} + T_{SI}$, where:

$T_{evaluateTDD}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{evaluate\ TDD}$ of 6.4s according to TS25.123 [2] table 4.1 in clause 4.2.2.7.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.6 and A.5.6.1.

8.3.6.2.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in URA_PCH for the single carrier case

8.3.6.2.4 Method of test

8.3.6.2.4.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.6.2.1, and 8.3.6.2.2.

Table 8.3.6.2.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T_{SI}		s	1.28	The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.3.6.2.2: Cell re-selection single carrier multi-cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
Timeslot Number		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1$_{s,n}$	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1$_s$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
		Cell 4				**Cell 5**				**Cell 6**			
Timeslot		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1$_{s,n}$	dB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1$_s$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/3, 84 MHz	-70											
Propagation Condition		AWGN											

8.3.6.2.4.2 Procedure

a) The SS activates cell 1-6 with T1 defined parameters.

b) The UE is switched on.

c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.2 to place the UE in the URA_PCH state on Cell 1 and then the SS waits for this process to complete.

d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.

e) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause “change of URA”) within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step g)~~The SS waits for URA UPDATE message with cause value "change of URA" from the UE~~.

f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step g)~~The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "URA_PCH"~~.

g) After a total of~~another~~ 15 s from the beginning of T2, the parameters are changed as described for T1.

h) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause “change of URA”) within 8s, then a success is recorded and the procedure moves to step j).~~The SS waits for URA UPDATE message with cause value "change of URA" from the UE~~.

i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step j).

j) Repeat steps d) to i~~g~~) [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (STEP3)

Information Element	Value/remark
RRC State Indicator	URA PCH
UTRAN DRX cycle length coefficient	7

8.3.6.2.5 Test Requirements

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

~~1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).~~

~~2) In step e), the UE shall respond on cell 2 within 8 s.~~

~~3) In step h), the UE shall respond on cell 1 within 8 s.~~

~~For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.~~

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘ T1-030166

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **155** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Correction to Cell Re-selection in CELL_PCH and URA_PCH test cases
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 15/01/2003
Category:	⌘ **A**	***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change: ⌘

1.) It is not clear in the procedure what should happen in the event of an error
2.) The RRC procedure delay of system information blocks defined in 25.331 is not accounted for in 25.123 or in 34.122.

3.) Periodical Location Updating timer and periodical Routing Area Updating timer is set up in the generic set-up procedure described in TS 34.108 subclause 7.4.2. Hence the UE may perform a Location Updating or Routing Area Updating procedure that is not expected in test procedure since UE is in CELL_PCH/URA_UPDATE states, and so the test procedure is not executed correctly. Periodical cell update/ura update procedures are also initiated in CELL_PCH/URA_PCH states according to T305.

4) The beginning of time period T1 isn't clear in “Procedure”.

5)It is not clear how random access procedure is terminated in test procedure.

Summary of change: ⌘

1) An error recovery process is proposed that avoids the possibility of double counting errors.

2) T_{SI} of 1280 ms is increased by the maximum RRC procedure delay for Broadcast of system information described in TS25.331 13.5.2. This is 100 ms as maximum. Therefore Tsi is set to 1380ms. Tsi is explained in test procedure.

3) Test procedure described in TS34.108 7.3.3 in which periodical AS and NAS timers are deactivated is used in this test case with a modification as IE ”RRC State Indicator” in RADIO BEARER SETUP (STEP3) is set to “CELL_PCH”/”URA_PCH”.
4) The timing when call set up has completed at step 3 is made the beginning of time period T1.
5) CELL UPDATE CONFIRM/URA UPDATE CONFIRM message is used to

		terminate the random access procedure. 6) Corrected misnumbered sub-clauses in 8.3.6.2
Consequences if not approved:	⌘	1) This test case may give false readings which may unfairly penalise a good UE. 34.122 and 25.123 will be inconsistent. 2) The test procedure cannot be executed properly with a compliant UE and test requirement cannot be met. 3) Ability beyond Minimum requirement is required. Even "Good UE" may not pass this test. 4) Test procedure will not terminate properly

Clauses affected:	⌘	8.3.5 and 8.3.6			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

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

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

8.3.5 Cell Re-selection in CELL_PCH

8.3.5.1 Scenario 1: TDD/TDD cell re-selection single carrier case

8.3.5.1.1 Definition and applicability

8.3.5.1.1.1 3,84 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell , and starts to send the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the 3,84 Mcps TDD UE.

8.3.5.1.1.2 1,28 Mcps TDD option

Void.

8.3.5.1.2 Minimum requirement

8.3.5.1.2.1 3,84 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{evaluateTDD} + T_{SI}$, where:

$T_{evaluateTDD}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{evaluate\ TDD}$ of 6.4s according to TS 25.123 [2] table 4.1 in clause 4.2.2.7.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.5 and A.5.5.1.

8.3.5.1.2.2 1,28 Mcps TDD option

Void.

8.3.5.1.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in CELL_PCH for the single carrier case

8.3.5.1.4 Method of test

8.3.5.1.4.1 3,84 Mcps TDD option

8.3.5.1.4.1.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.5.1.1.1, and 8.3.5.1.1.2.

Table 8.3.5.1.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T_{SI}		s	1.28	The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.3.5.1.1.2: Cell re-selection single carrier multi-cell case

Parameter	**Unit**	**Cell 1**				**Cell 2**				**Cell 3**			
Timeslot Number		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1$_{s,n}$	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1, C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1$_s$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
		Cell 4				**Cell 5**				**Cell 6**			
Timeslot		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1$_{s,n}$	dB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1$_s$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/3, 84 MHz	-70											
Propagation Condition		AWGN											

8.3.5.1.4.1.2 Procedure

a) The SS activates cell 1-6 with T1 defined parameters.

b) The UE is switched on.

c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.1 to place the UE in the CELL_PCH state on Cell 1 and then the SS waits for this process to complete.

d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.

e) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step g). ~~The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.~~

f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step g) ~~The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "CELL_PCH"~~.

g) After a total of ~~another~~ 15 s from the beginning of T2, the parameters are changed as described for T1.

h) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause "cell reselection") within 8s, then a success is recorded and the procedure moves to step j) ~~The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE~~.

i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step j).

j) ~~–~~Repeat steps d) to ~~g)~~i) [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

RADIO BEARER SETUP (STEP3)

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	7

8.3.5.1.4.2 1,28 Mcps TDD option

Void.

8.3.5.1.5 Test Requirements

8.3.5.1.5.1 3,84 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

~~1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).~~

~~2) In step e), the UE shall respond on cell 2 within 8 s.~~

~~3) In step h), the UE shall respond on cell 1 within 8 s.~~

~~For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.~~

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.1.5.2 1,28 Mcps TDD option

Void.

8.3.5.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

8.3.5.2.1 Definition and applicability

8.3.5.2.1.1 3,84 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell , and starts to send the CELL UPDATE message with cause value "cell reselection" in the new cell.

The requirements and this test apply to the 3,84 Mcps option TDD UE.

8.3.5.2.1.2 1,28 Mcps TDD option

Void.

8.3.5.2.2 Minimum requirement

8.3.5.2.2.1 3,84 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{evaluateTDD} + T_{SI}$, where:

$T_{evaluateTDD}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{evaluate\ TDD}$ of 6.4s according to TS 25.123 [2] table 4.1 in clause 4.2.2.7.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.5 and A.5.5.2.

8.3.5.2.2.2 3,84 Mcps TDD option

Void.

8.3.5.2.3 Test purpose

This test verifies that the UE meets the requirement for the cell re-selection delay in CELL_PCH for the multi carrier case.

8.3.5.2.4 Method of test

8.3.5.2.4.1 3,84 Mcps TDD option

8.3.5.2.4.1.1 Initial conditions

This scenario contains 6 cells and 2 carrier frequencies. The test parameters are given in Tables 8.3.5.2.1.1 and 8.3.5.2.1.2.

Table 8.3.5.2.1.1: General test parameters for Cell Re-selection in Multi carrier case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T_{SI}		s	1.28	The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	30	
T2		s	15	

Table 8.3.5.2.1.2: Cell re-selection multi carrier multi cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
Timeslot Number		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 2				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	6	0	6	0	0	6	0	6	-3	-3	-3	-3
PCCPCH RSCP	dBm	-67	-73			-73	-67			-76	-76		
Qoffset1$_{s,n}$	dB	C1, C2: 0; C1, C3:0; C1,C4:0C1, C5:0; C1, C6:0				C2, C1: 0; C2, C3:0; C2,C4:0C2, C5:0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5:0; C3, C6:0			
Qhyst1$_s$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
		Cell 4				**Cell 5**				**Cell 6**			
Timeslot		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 2				Channel 2			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28	-4,28
$\hat{I}_{or}/I_{oc}$	dB	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3	-3
PCCPCH RSCP	dBm	-76	-76			-76	-76			-76	-76		
Qoffset1$_{s,n}$	dB	C4, C1: 0; C4, C2:0; C4,C3:0 C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1$_s$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
Sintersearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/3, 84 MHz	-70											
Propagation Condition		AWGN											

8.3.5.2.4.1.2 Procedure

a) The SS activates cell 1-6 with T1 defined parameters.

b) The UE is switched on.

c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.1 to place the UE in the CELL_PCH state on Cell 1 and then the SS waits for this process to complete.

d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.

e) If the UE responds on Cell 2 with a PRACH (CELL UPDATE message cause “cell reselection”) within 8s, then a success is recorded, the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure moves to step g). ~~The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE.~~

f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step g) ~~The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "CELL_PCH"~~.

g) After a total of~~another~~ 15 s from the beginning of T2, the parameters are changed as described for T1.

h) If the UE responds on Cell 1 with a PRACH (CELL UPDATE message cause “cell reselection”) within 8s, then a success is recorded and the procedure moves to step j)~~The SS waits for CELL UPDATE message with cause value "cell reselection" from the UE~~.

i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a CELL UPDATE CONFIRM message and then the procedure continues with step j).

j) Repeat steps d) to i~~g~~) [TBD] times.

NOTE: T1 is initially 30 s to allow enough time for the UE to search for cells as it has no prior knowledge of these.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (STEP3)

Information Element	Value/remark
RRC State Indicator	CELL PCH
UTRAN DRX cycle length coefficient	7

8.3.5.2.~~5~~4.2 1,28 Mcps TDD option

Void.

8.3.5.2.5 Test Requirements

8.3.5.2.5.1 3,84 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

~~1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).~~

~~2) In step e), the UE shall respond on cell 1 within 8 s.~~

~~3) In step h), the UE shall respond on cell 2 within 8 s.~~

~~For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.~~

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.5.2.5.2 1,28 Mcps TDD option

Void.

8.3.6 Cell Re-selection in URA_PCH

8.3.6.1 Scenario 1: TDD/TDD cell re-selection single carrier case

8.3.6.1.1 Definition and applicability

8.3.6.1.1.1 3,84 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell , and starts to send the URA UPDATE message with cause value "change of URA" in the new cell.

The requirements and this test apply to the 3,84 Mcps TDD UE.

8.3.6.1.1.2 1,28 Mcps TDD option

Void.

8.3.6.1.2 Minimum requirement

8.3.6.1.2.1 3,84 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{evaluateTDD} + T_{SI}$, where:

$T_{evaluateTDD}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{evaluate\ TDD}$ of 6.4s according to TS25.123 [2] table 4.1 in clause 4.2.2.7.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.6 and A.5.6.1.

8.3.6.1.2.2 1,28 Mcps TDD option

Void.

8.3.6.1.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in URA_PCH for the single carrier case.

8.3.6.1.4 Method of test

8.3.6.1.4.1 3,84 Mcps TDD option

8.3.6.1.4.1.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.6.1.1.1, and 8.3.6.1.1.2.

Table 8.3.6.1.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T_{SI}		s	1.28	The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.3.6.1.1.2: Cell re-selection single carrier multi-cell case

Parameter	**Unit**	**Cell 1**				**Cell 2**				**Cell 3**			
Timeslot Number		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1$_{s,n}$	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1$_s$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
		Cell 4				**Cell 5**				**Cell 6**			
Timeslot		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	DBm	-74	-74			-74	-74			-74	-74		
Qoffset1$_{s,n}$	DB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1$_s$	DB	0				0				0			
Treselection	S	0				0				0			
Sintrasearch	DB	not sent				not sent				not sent			
I_{oc}	dBm/3, 84 MHz	-70											
Propagation Condition		AWGN											

8.3.6.1.4.1.2 Procedure

a) The SS activates cell 1-6 with T1 defined parameters.

b) The UE is switched on.

c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.2 to place the UE in the URA_PCH state on Cell 1 and then the SS waits for this process to complete.

d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.

e) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step g)~~The SS waits for URA UPDATE message with cause value "change of URA" from the UE~~.

f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step g).~~The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "URA_PCH".~~

g) After a total of ~~another~~ 15 s from the beginning of T2, the parameters are changed as described for T1.

h) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause "change of URA") within 8s, then a success is recorded and the procedure moves to step j).~~The SS waits for URA UPDATE message with cause value "change of URA" from the UE.~~

i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step j).

j) Repeat steps d) to i~~g~~) [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (STEP3)

Information Element	Value/remark
RRC State Indicator	URA PCH
UTRAN DRX cycle length coefficient	7

8.3.6.1.4.2 1,28 Mcps TDD option

Void.

8.3.6.1.5 Test Requirements

8.3.6.1.5.1 3,84 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

~~1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).~~

~~2) In step e), the UE shall respond on cell 2 within 8 s.~~

~~3) In step h), the UE shall respond on cell 1 within 8 s.~~

~~For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.~~

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6.1.5.2 1,28 Mcps TDD option

Void.

8.3.6.2 Scenario 2: TDD/TDD cell re-selection multi carrier case

8.3.6.~~1~~2.1 Definition and applicability

8.3.6.~~1~~2.1.1 3,84 Mcps TDD option

The cell re-selection delay is defined as the time from a change of cell levels to the moment when this change causes the UE to camp on a new cell , and starts to send the URA UPDATE message with cause value "change of URA" in the new cell.

The requirements and this test apply to the 3,84 Mcps TDD UE.

8.3.6.~~1~~2.1.2 1,28 Mcps TDD option

Void.

8.3.6.~~1~~2.2 Minimum requirement

8.3.6.~~1~~2.2.1 3,84 Mcps TDD option

The cell re-selection delay shall be less than 8 s.

NOTE:

The cell re-selection delay can be expressed as: $T_{evaluateTDD} + T_{SI}$, where:

$T_{evaluateTDD}$ A DRX cycle length of 1280ms is assumed for this test case, this leads to a $T_{evaluate\ TDD}$ of 6.4s according to TS25.123 [2] table 4.1 in clause 4.2.2.7.

T_{SI} Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

The normative reference for this requirement is TS 25.123 [2] clauses 5.6 and A.5.6.1.

8.3.6.~~1~~2.2.2 1,28 Mcps TDD option

Void.

8.3.6.~~1~~2.3 Test purpose

This test verifies that the UE meets the minimum requirement for the cell re-selection delay in URA_PCH for the single carrier case

8.3.6.~~1~~2.4 Method of test

8.3.6.~~1~~2.4.1 3,84 Mcps TDD option

8.3.6.~~1~~2.4.1.1 Initial conditions

This scenario contains 6 cells operating on the same carrier frequency. The test parameters are given in Tables 8.3.6.~~1~~2.1.1, and 8.3.6.~~1~~2.1.2.

Table 8.3.6.~~1~~2.1.1: General test parameters for Cell Re-selection single carrier multi-cell case

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	
	Neighbour cells		Cell2, Cell3,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell2	
HCS			Not used	
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Qrxlevmin		dBm	-102	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
T_{SI}		s	1.28	The value shall be used for all cells in the test.
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table 8.3.6.~~1~~2.1.2: Cell re-selection single carrier multi-cell case

Parameter	Unit	Cell 1				Cell 2				Cell 3			
Timeslot Number		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		0	0	0	0	5	5	5	5	10	10	10	10
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	9	7	9	7	7	9	7	9	-1	-1	-1	-1
PCCPCH RSCP	dBm	-64	-66			-66	-64			-74	-74		
Qoffset1$_{s,n}$	dB	C1, C2: 0; C1, C3:0; C1,C4:0 C1, C5:0; C1,C6:0				C2, C1: 0; C2, C3:0; C2,C4:0 C2, C5: 0; C2, C6:0				C3, C1: 0; C3, C2:0; C3,C4:0 C3, C5: 0; C3, C6:0			
Qhyst1$_s$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
		Cell 4				**Cell 5**				**Cell 6**			
Timeslot		**0**		**8**		**0**		**8**		**0**		**8**	
		T1	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**	**T1**	**T2**
UTRA RF Channel Number		Channel 1				Channel 1				Channel 1			
PCCPCH_Ec/Ior	dB	-3	-3			-3	-3			-3	-3		
SCH_Ec/Ior	dB	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9
SCH_t_{offset}		15	15	15	15	20	20	20	20	25	25	25	25
PICH_Ec/Ior	dB			-3	-3			-3	-3			-3	-3
OCNS_Ec/Ior	dB	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12	-3,12
$\hat{I}_{or}/I_{oc}$	dB	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
PCCPCH RSCP	dBm	-74	-74			-74	-74			-74	-74		
Qoffset1$_{s,n}$	dB	C4, C1: 0; C4, C2:0; C4,C3:0C4, C5:0; C4, C6:0				C5, C1: 0; C5, C2:0; C5,C3:0 C5, C4:0; C5, C6:0				C6, C1: 0; C6, C2:0; C6,C3:0 C6, C4:0; C6, C5:0			
Qhyst1$_s$	dB	0				0				0			
Treselection	s	0				0				0			
Sintrasearch	dB	not sent				not sent				not sent			
I_{oc}	dBm/3, 84 MHz	-70											
Propagation Condition		AWGN											

8.3.6.~~1~~2.4.1.2 Procedure

a) The SS activates cell 1-6 with T1 defined parameters.

b) The UE is switched on.

c) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.4.2.7.2 to place the UE in the URA_PCH state on Cell 1 and then the SS waits for this process to complete.

d) After 15 s from the completion of step c) or the beginning of T1, the parameters are changed as described for T2.

e) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause “change of URA”) within 8s, then a success is recorded, the SS shall transmit a URA UPDATE CONFIRM message and then the procedure moves to step g)~~The SS waits for URA UPDATE message with cause value "change of URA" from the UE~~.

f) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T2 and if no response is received, the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step g)~~The SS sends the UE CELL UPDATE CONFIRM message with "RRC State Indicater" = "URA_PCH"~~.

g) After a total of~~another~~ 15 s from the beginning of T2, the parameters are changed as described for T1.

h) If the UE responds on Cell 1 with a PRACH (URA UPDATE message cause “change of URA”) within 8s, then a success is recorded and the procedure moves to step j).~~The SS waits for URA UPDATE message with cause value "change of URA" from the UE~~.

i) Since the UE has failed to respond with the correct message within the allowed time, a failure is recorded. The SS shall then wait for a total of 15s from the beginning of T1 and if no response is received the UE shall be switched off and the procedure returns to step a). Otherwise the SS shall transmit a URA UPDATE CONFIRM message and then the procedure continues with step j).

j) Repeat steps d) to i~~g~~) [TBD] times.

NOTE: The time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in 25.331 for a UTRAN cell. Since the maximum repetition period of the relevant system info blocks that needs to be received by the UE to camp on a cell is 1280ms and the maximum RRC procedure delay for reception system information block is 100ms, 1380 ms is assumed in this test case. Therefore this gives a total of 7.78s(Minimum requirement + 100ms), allow 8s in the test case.

RADIO BEARER SETUP (STEP3)

Information Element	Value/remark
RRC State Indicator	URA PCH
UTRAN DRX cycle length coefficient	7

8.3.6.~~1~~2.4.2 1,28 Mcps TDD option

Void.

8.3.6.~~1~~2.5 Test Requirements

8.3.6.~~1~~2.5.1 3,84 Mcps TDD option

For the test to pass, the total number of successful attempts shall be more than 90% with a confidence level of [FFS]% of the cases.

~~1) In step d), after the UE has responded on cell 1, it shall not respond on any other cell (cell selection).~~

~~2) In step e), the UE shall respond on cell 2 within 8 s.~~

~~3) In step h), the UE shall respond on cell 1 within 8 s.~~

~~For the test to pass, the total number of fulfilled test requirements 2) and 3) shall be more than [FFS]% of the cases.~~

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.6.~~1~~2.5.2 1,28 Mcps TDD option

Void.

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030167

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **156** ⌘**rev** **-** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Reference and Measurement Performance Sub-sections Updates
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘ **F**	***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	Section titles and numbering in 34.122 do not match with the latest status in 25.123. Several sub-section are still missing in 34.122. Several more references are needed in Section 3.
Summary of change:	⌘	Update of section 8.7 according to 25.123. References added in Section 2.
Consequences if not approved:	⌘	Inconsistency 25.123 and 34.122

Clauses affected:	⌘	2, 8.7

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

Other comments: ⌘ -

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TS 25.102 (V4.0.0): "UTRA (UE) TDD; Radio Transmission and Reception (TDD)".

[2] 3GPP TS 25.123: "Requirements for Support of Radio Resource Management (TDD)".

[3] 3GPP TS 34.108 "Common Test Environments for User Equipment (UE) Conformance Testing"

[4] 3GPP TS 34.109: "Terminal logical test interface; Special conformance testing functions".

[5] 3GPP TS 25.224: "Physical Layer Procedures (TDD)".

[6] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[7] 3GPP TR 25.990: "Vocabulary".

[8] ITU-R Recommendation SM.328-9: "Spectra and bandwidth of emissions".

[9] 3GPP TS 25.331: "Radio Resource Control (RRC) Protocol Specification".

[10] 3GPP TS 25.433 "UTRAN Iub Interface NBAP Signalling".

[11] ITU-R Recommendation SM.329: "Spurious emissions".

[12] 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".

[13] 3GPP TS 25.303: "Interlayer Procedures in Connected Mode".

[14] 3GPP TS 25.321: "Medium Access Control (MAC) protocol specification".

[15] 3GPP TS 25.223: "Spreading and modulation (TDD)".

[16] ETSI ETR 273-1-2: "Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measuremement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".

[17] 3GPP TR 25.926: "UE Radio Access Capabilities".

[18] 3GPP TR 21.904: "UE capability requirements".

[19] 3GPP TS 25.221: "Physical channels and mapping of transport channels onto physical channels (TDD)".

[20] 3GPP TS 05.08: "Digital cellular telecommunications system (Phase 2+); Radio subsystem link control".

[21] 3GPP TS 34.123-1: "User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance Specification".

[22] 3GPP TS 25.225: "Physical Layer – Measurements (TDD)".

< Next changed section >

8.7 Measurements Performance Requirements

Unless explicitly stated:

- Measurement channel is 12.2 kbps as defined in ~~TS 25.102 annex A~~ annex C, sub-clause C.3.1. This measurement channel is used ~~both~~ in active cell and cells to be measured.
- Cell 1 is the active cell.
- Single task reporting.
- Power control is active.

8.7.1 P-CCPCH RSCP

8.7.1.1 Intra frequency measurement accuracy

8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP meaasured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.1.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -13dB$$

Table 8.7.1.1.1.1: P-CCPCH_RSCP absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.1 and A.9.1.1.1.1.

8.7.1.1.1.3 Test Purpose

The purpose of this test is to verify that the absolute P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1.1.4 Method of test

8.7.1.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: P-CCPCH RSCP Intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	0	0	0	0	0
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.7		-59.8		-98.7	
Îor/Ioc	dB	5	2	9	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.7	-76.7	-53.8	-60.8	-98.7	-101.7
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.1.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check PCCPCH_RSCP value in MEASUREMENT REPORT messages. PCCPCH_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH_RSCP power for each MEASUREMENT REPORT message.

4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.1.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1.2 Relative accuracy requirement

8.7.1.1.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.1.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P-CCPCH\_E_c}{I_o} \right)\Big|_{in\ dB} \geq -8dB$$

$$\left(\frac{SCH\_E_c}{I_o} \right)\Big|_{in\ dB} \geq -13dB$$

$$\left| \text{P - CCPCH RSCP1}\big|_{in\ dB} - \text{P - CCPCH RSCP2}\big|_{in\ dB} \right| \leq 20dB$$

Relative Io difference [dB] ≤ relative RSCP difference [dB]

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1.2.1: P-CCPCH_RSCP intra-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions	
		Normal condition	Extreme condition	Io [dBm]	relative RSCP difference [dbB]
P-CCPCH_RSCP	dBm	±1	±1	-94...-50	<2
		±2	±2		2...14
		±3	± 3		>14

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.1.1.

8.7.1.1.2.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1.2.4 Method of test

8.7.1.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

4) The result of step 3) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.

5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated.

6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.1.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.2.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.2 Inter frequency measurement accuracy

8.7.1.2.1 Relative accuracy requirement

8.7.1.2.1.1 Definition and applicability

The P-CCPCH_RSCP inter-frequency relative accuracy is defined as the P-CCPCH_RSCP measured from one cell compared to the P-CCPCH_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.2.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left|\text{P - CCPCH RSCP1}\right|_{in\ dB} - \text{P - CCPCH RSCP2}\left|_{in\ dB}\right| \le 20dB$$

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} \ge -13dB$$

Table 8.7.1.2.1.1: P-CCPCH_RSCP inter-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
P-CCPCH_RSCP	dBm	± 6	± 6	-94...-50

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.

8.7.1.2.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

8.7.1.2.1.4 Method of test

8.7.1.2.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Table 8.7.1.2.1.2: P-CCPCH RSCP Intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.1	-98.7	-97
Îor/Ioc	dB	5	5	7	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.2	-73.2	-54.8	-55.1	-98.7	-100
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2.1.2.

8.7.1.2.1.4.2 Procedure

1) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.
2) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.
3) SS shall transmit MEASUREMENT CONTROL message.
4) UE shall transmit periodically MEASUREMENT REPORT messages.
5) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.
6) The result of step 5) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.
7) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 5) and 6) above are repeated.
8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.
9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.2.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2 CPICH measurements (FDD)

8.7.2.1 CPICH RSCP

Void

8.7.2.2 CPICH Ec/Io

Void

8.7.3 Timeslot ISCP

Void

8.7.4 UTRA carrier RSSI

Void

8.7.5 GSM carrier RSSI

Void

8.7.6 SIR

Void

8.7.7 Transport Channel BLER

Void

8.7.8 SFN-SFN observed time difference

8.7.8.1 SFN-SFN observed time difference type 1

Void

8.7.8.2 SFN-SFN observed time difference type 2

Void

8.7.9 Observed time difference to GSM cell

Void

8.7.10 UE GPS Timing of Cell Frames for UP

Void

8.7.11 SFN-CFN observed time difference

Void

8.7.12 UE transmitted power

Void

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030168

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **157** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Update to section 2 and section 8.7
Source:	⌘	T1-RF
Work item code:	⌘	
Date:	⌘	13/01/2003
Category:	⌘	**A**
Release:	⌘	Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	Section titles and numbering in 34.122 do not match with the latest status in 25.123. Several sub-section are still missing in 34.122. Several more references are needed in Section 3.
Summary of change:	⌘	Update of section 8.7 according to 25.123. References added in Section 2.
Consequences if not approved:	⌘	Inconsistency 25.123 and 34.122

Clauses affected:	⌘	3; 8.7

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

Other comments:	⌘	-

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
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[1] 3GPP TS 25.102 (V4.0.0): "UTRA (UE) TDD; Radio Transmission and Reception (TDD)".

[2] 3GPP TS 25.123: "Requirements for Support of Radio Resource Management (TDD)".

[3] 3GPP TS 34.108 "Common Test Environments for User Equipment (UE) Conformance Testing"

[4] 3GPP TS 34.109: "Terminal logical test interface; Special conformance testing functions".

[5] 3GPP TS 25.224: "Physical Layer Procedures (TDD)".

[6] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[7] 3GPP TR 25.990: "Vocabulary".

[8] ITU-R Recommendation SM.328-9: "Spectra and bandwidth of emissions".

[9] 3GPP TS 25.331: "Radio Resource Control (RRC) Protocol Specification".

[10] 3GPP TS 25.433 "UTRAN Iub Interface NBAP Signalling".

[11] ITU-R Recommendation SM.329: "Spurious emissions".

[12] 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".

[13] 3GPP TS 25.303: "Interlayer Procedures in Connected Mode".

[14] 3GPP TS 25.321: "Medium Access Control (MAC) protocol specification".

[15] 3GPP TS 25.223: "Spreading and modulation (TDD)".

[16] ETSI ETR 273-1-2: "Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measuremement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes".

[17] 3GPP TR 25.926: "UE Radio Access Capabilities".

[18] 3GPP TR 21.904: "UE capability requirements".

[19] 3GPP TS 25.221: "Physical channels and mapping of transport channels onto physical channels (TDD)".

[20] 3GPP TS 45.008: "Digital cellular telecommunications system (Phase 2+); Radio subsystem link control".

[21] 3GPP TS 34.123-1: "User Equipment (UE) Conformance Specification; Part 1: Protocol Conformance Specification".

[22] 3GPP TS 25.225: "Physical Layer – Measurements (TDD)".

< Next changed section >

8.7 Measurements Performance Requirements

Unless explicitly stated:

- Measurement channel is 12.2 kbps as defined in ~~TS 25.102 annex A~~ annex C, sub-clause C.3.1. This measurement channel is used ~~both~~ in active cell and cells to be measured.
- Cell 1 is the active cell.
- Single task reporting.
- Power control is active.

8.7.1 P-CCPCH RSCP

8.7.1.1 Intra frequency measurement accuracy for 3,84 Mcps TDD Option

8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP meaasured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.1.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -13dB$$

Table 8.7.1.1.1.1: P-CCPCH_RSCP absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.1 and A.9.1.1.1.1.

8.7.1.1.1.3 Test Purpose

The purpose of this test is to verify that the absolute P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1.1.4 Method of test

8.7.1.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: P-CCPCH RSCP Intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	0	0	0	0	0
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.7		-59.8		-98.7	
Îor/Ioc	dB	5	2	9	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.7	-76.7	-53.8	-60.8	-98.7	-101.7
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.1.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check PCCPCH_RSCP value in MEASUREMENT REPORT messages. PCCPCH_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH_RSCP power for each MEASUREMENT REPORT message.

4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.1.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1.2 Relative accuracy requirement for 3,84 Mcps TDD Option

8.7.1.1.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.1.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P-CCPCH\_E_c}{I_o} \right)\Big|_{in\ dB} \geq -8dB$$

$$\left(\frac{SCH\_E_c}{I_o} \right)\Big|_{in\ dB} \geq -13dB$$

$$\left| \text{P - CCPCH RSCP1}\big|_{in\ dB} - \text{P - CCPCH RSCP2}\big|_{in\ dB} \right| \leq 20dB$$

Relative Io difference [dB] ≤ relative RSCP difference [dB]

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1.2.1: P-CCPCH_RSCP intra-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions	
		Normal condition	Extreme condition	Io [dBm]	relative RSCP difference [dbB]
P-CCPCH_RSCP	dBm	±1	±1	-94...-50	<2
		±2	±2		2...14
		±3	± 3		>14

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.1.1.

8.7.1.1.2.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1.2.4 Method of test

8.7.1.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

4) The result of step 3) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.

5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated.

6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.1.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.2.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1A Intra frequency measurement accuracy for 1.28 Mcps TDD Option

8.7.1.1A.1 Absolute accuracy requirement

8.7.1.1A.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE 1.28 Mcps option.

8.7.1.1A.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1A.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P-CCPCH\_E_c}{I_o} \right) \Big|_{in\ dB} \geq -8dB$$

$$\left(\frac{DwPCH\_E_c}{I_o} \right) \Big|_{in\ dB} \geq -5dB$$

Table 8.7.1.1A.1.1: P-CCPCH_RSCP absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.1 and A.9.2.1.1.1.

8.7.1.1A.1.3 Test Purpose

The purpose of this test is to verify that the absolute P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1A.1.4 Method of test

8.7.1.1A.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 5 and the UL DPCH shall be transmitted in timeslot 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1A.1.2.

Table 8.7.1.1A.1.2: P-CCPCH RSCP Intra frequency test parameters

	Test 1				
Parameter	**Unit**	**Cell 1**		**Cell 2**	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3	
DwPCH_Ec/Ior	dB		0		0
OCNS_Ec/Ior	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB	5		2	
I_{oc}	dBm/ 1.28 MHz	-76.6			
PCCPCH RSCP, Note 1	dBm	-74.6		-77.6	
Io, Note 1	dBm/ 1.28 MHz	-69			
Propagation condition		AWGN			
	Test 2				
Parameter	**Unit**	**Cell 1**		**Cell 2**	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3	
DwPCH_Ec/Ior	dB		0		0
OCNS_Ec/Ior	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB	9		2	
I_{oc}	dBm/ 1.28 MHz	-60.2			
PCCPCH RSCP, Note 1	dBm	-54.2		-61.2	
Io, Note 1	dBm/ 1.28 MHz	-50			
Propagation condition		AWGN			
	Test 3				
Parameter	**Unit**	**Cell 1**		**Cell 2**	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3	
DwPCH_Ec/Ior	dB		0		0
OCNS_Ec/Ior	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB	5		3	
I_{oc}	dBm/ 1.28 MHz	-101.9			
PCCPCH RSCP, Note 1	dBm	-99.9		-101.9	
Io, Note 1	dBm/ 1.28 MHz	-94			
Propagation condition		AWGN			
NOTE 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.					

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1A.1.2.

8.7.1.1A.1.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check PCCPCH_RSCP value in MEASUREMENT REPORT messages. PCCPCH_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH_RSCP power for each MEASUREMENT REPORT message.

4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1A.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1A.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.1A.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1A.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1A.2 Relative accuracy requirement for 1.28 Mcps TDD Option

8.7.1.1A.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE 1.28 Mcps option.

8.7.1.1A.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1A.2.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -8dB$$

$$\left(\frac{DwPCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -5dB$$

$$\left|\text{P - CCPCH RSCP1}\Big|_{in\ dB} - \text{P - CCPCH RSCP2}\Big|_{in\ dB}\right| \leq 20dB$$

Relative Io difference [dB] ≤ relative RSCP difference [dB]

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1A.2.1: P-CCPCH_RSCP intra-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions	
		Normal condition	Extreme condition	Io [dBm]	relative RSCP difference [dbB]
P-CCPCH_RSCP	dBm	±1	±1	-94...-50	<2
		±2	±2		2...14
		±3	± 3		>14

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.2.1.1.1.

8.7.1.1A.2.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1A.2.4 Method of test

8.7.1.1A.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 5 and the UL DPCH shall be transmitted in timeslot 2. P-CCPCH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1A.1.2.

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1A.1.2.

8.7.1.1A.2.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

4) The result of step 3) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.

5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1A.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1A.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated.

6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.1A.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1A.2.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.2 Inter frequency measurement accuracy for 3,84 Mcps TDD Option

8.7.1.2.1 Relative accuracy requirement

8.7.1.2.1.1 Definition and applicability

The P-CCPCH_RSCP inter-frequency relative accuracy is defined as the P-CCPCH_RSCP measured from one cell compared to the P-CCPCH_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.2.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left| \text{P - CCPCH RSCP1}\big|_{in\ dB} - \text{P - CCPCH RSCP2}\big|_{in\ dB} \right| \le 20dB$$

$$\left(\frac{P-CCPCH\_E_c}{I_o} \right)\Big|_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o} \right)\Big|_{in\ dB} \ge -13dB$$

Table 8.7.1.2.1.1 P-CCPCH_RSCP inter-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
P-CCPCH_RSCP	dBm	± 6	± 6	-94...-50

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.

8.7.1.2.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

8.7.1.2.1.4 Method of test

8.7.1.2.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Table 8.7.1.2.1.2: P-CCPCH RSCP Intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.1	-98.7	-97
$\hat{I}$or/Ioc	dB	5	5	7	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.2	-73.2	-54.8	-55.1	-98.7	-100
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2.1.2.

8.7.1.2.1.4.2 Procedure

1) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

2) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

3) SS shall transmit MEASUREMENT CONTROL message.

4) UE shall transmit periodically MEASUREMENT REPORT messages.

5) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

6) The result of step 5) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.

7) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 5) and 6) above are repeated.

8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.2.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.2A Inter frequency measurement accuracy for 1.28 Mcps TDD Option

8.7.1.2A.1 Relative accuracy requirement

8.7.1.2A.1.1 Definition and applicability

The P-CCPCH_RSCP inter-frequency relative accuracy is defined as the P-CCPCH_RSCP measured from one cell compared to the P-CCPCH_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE 1.28 Mcps option.

8.7.1.2A.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2A.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left|\text{P - CCPCH RSCP1}\big|_{in\ dB} - \text{P - CCPCH RSCP2}\big|_{in\ dB}\right| \le 20dB$$

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Big|_{in\ dB} \ge -8dB$$

$$\left(\frac{DwPCH\_E_c}{I_o}\right)\Big|_{in\ dB} \ge -5dB$$

Table 8.7.1.2A.1.1 P-CCPCH_RSCP inter-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
P-CCPCH_RSCP	dBm	± 6	± 6	-94...-50

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.2.1.

8.7.1.2A.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

8.7.1.2A.1.4 Method of test

8.7.1.2A.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2A.1.2.

Table 8.7.1.2A.1.2: P-CCPCH RSCP Intra frequency test parameters

	Test 1				
Parameter	**Unit**	**Cell 1**		**Cell 2**	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/Ior	dB	-3		-3	
DwPCH_Ec/Ior	dB		0		0
OCNS_Ec/Ior	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB	5		5	
I_{oc}	dBm/ 1.28 MHz	-75.2		-75.2	
PCCPCH RSCP, Note 1	dBm	-73.2		-73.2	
Io, Note 1	dBm/ 1.28 MHz	-69			
Propagation condition		AWGN			
	Test 2				
Parameter	**Unit**	**Cell 1**		**Cell 2**	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/Ior	dB	-3		-3	
DwPCH_Ec/Ior	dB		0		0
OCNS_Ec/Ior	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB	7		2	
I_{oc}	dBm/ 1.28 MHz	-57.8		-54.1	
PCCPCH RSCP, Note 1	dBm	-53.8		-55.1	
Io, Note 1	dBm/ 1.28 MHz	-50			
Propagation condition		AWGN			
	Test 3				
Parameter	**Unit**	**Cell 1**		**Cell 2**	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/Ior	dB	-3		-3	
DwPCH_Ec/Ior	dB		0		0
OCNS_Ec/Ior	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB	3		0	
I_{oc}	dBm/ 1.28 MHz	-98.7		-97	
PCCPCH RSCP, Note 1	dBm	-98.7		-100	
Io, Note 1	dBm/ 1.28 MHz	-94			
Propagation condition		AWGN			
NOTE 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.					

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2A.1.2.

8.7.1.2A.1.4.2 Procedure

1) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

2) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

3) SS shall transmit MEASUREMENT CONTROL message.

4) UE shall transmit periodically MEASUREMENT REPORT messages.

5) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

6) The result of step 5) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.

7) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2A.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 5) and 6) above are repeated.

8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.2A.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2A.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.2 CPICH measurements (FDD)

8.7.2.1 CPICH RSCP

Void

8.7.2.2 CPICH Ec/Io

Void

8.7.3 Timeslot ISCP

Void

8.7.4 UTRA carrier RSSI

Void

8.7.5 GSM carrier RSSI

Void

8.7.6 SIR

Void

8.7.7 Transport Channel BLER

Void

8.7.8 SFN-SFN observed time difference

8.7.8.1 SFN-SFN observed time difference type 1

Void

8.7.8.2 SFN-SFN observed time difference type 2

Void

8.7.9 Observed time difference to GSM cell

Void

8.7.10 UE GPS Timing of Cell Frames for UP

Void

8.7.11 SFN-CFN observed time difference

Void

8.7.12 UE transmitted power

Void

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030169

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **158** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

Proposed change affects: UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Corrections to P-CCPCH RSCP Measurement Performance Requirements for UTRA TDD
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**F** ***Release:*** ⌘ R99

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

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

Reason for change:	⌘	Test-specific RRC message contents of MEASURMENT CONTROL for the P-CCPCH RSCP measurement performance requirements in UTRA TDD are missing from the current version of TS 34.122. PHYSICAL CHANNEL RECONFIGURATION can be removed from test procedure for P-CCPCH RSCP inter-frequency accuracy test because not used in TDD context.
Summary of change:	⌘	Introduction of test-specific RRC message contents for MEASURMENT CONTROL for the P-CCPCH RSCP measurement performance requirements in UTRA TDD. PHYSICAL CHANNEL RECONFIGURATION removed from test procedure step 1 and 2 for P-CCPCH RSCP inter-frequency accuracy test because not used in TDD context.
Consequences if not approved:	⌘	P-CCPCH RSCP measurement performance test not feasible.

Clauses affected:	⌘	8.7.1

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

Other comments: ⌘ -

8.7 Measurements Performance Requirements

Unless explicitly stated:

- Reported measurements shall be within defined range in 90 % of the cases.
- Measurement channel is 12.2 kbps as defined in TS 25.102 annex A. This measurement channel is used both in active cell and cells to be measured.
- Cell 1 is the active cell.
- Single task reporting.
- Power control is active.

8.7.1 P-CCPCH RSCP

8.7.1.1 Intra frequency measurement accuracy

8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP meaasured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.1.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -13dB$$

Table 8.7.1.1.1.1: P-CCPCH_RSCP absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

~~The rate of correct measurements observed during repeated tests shall be at least 90%.~~

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.1 and A.9.1.1.1.1.

8.7.1.1.1.3 Test Purpose

The purpose of this test is to verify that the absolute P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1.1.4 Method of test

8.7.1.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: P-CCPCH RSCP ~~I~~intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	0	0	0	0	0
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.7		-59.8		-98.7	
Îor/Ioc	dB	5	2	9	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.7	-76.7	-53.8	-60.8	-98.7	-101.7
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.1.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check PCCPCH_RSCP value in MEASUREMENT REPORT messages. PCCPCH_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH_RSCP power for each MEASUREMENT REPORT message.

4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above ~~is~~ are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above ~~is~~ are repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Periodical reporting Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE *mode* -Measurement quantity list	Intra-frequency measurement Not Present 0 TDD 1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -Timeslot ISCP reporting indicator -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	 No report FALSE TRUE TDD FALSE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -Timeslot ISCP reporting indicator -Proposed TGSN reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	 No report FALSE TRUE TDD FALSE FALSE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -CHOICE *reported cell* -Maximum number of reported cells -Measurement validity (10.3.7.51) -CHOICE *report criteria* (10.3.7. -Periodical reporting criteria (10.3.7.53) -Amount of reporting -Reporting interval	 Report all active set cells + cells within monitored set on used frequency 1 Not Present Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present

8.7.1.1.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1.2 Relative accuracy requirement

8.7.1.1.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.1.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -13dB$$

$$\left|\text{P - CCPCH RSCP1}\big|_{in\ dB} - \text{P - CCPCH RSCP2}\big|_{in\ dB}\right| \leq 20dB$$

Relative Io difference [dB] ≤ relative RSCP difference [dB]

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1.2.1: P-CCPCH_RSCP intra-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions	
		Normal condition	Extreme condition	Io [dBm]	relative RSCP difference [dbB]
P-CCPCH_RSCP	dBm	±1	±1	-94...-50	<2
		±2	±2		2...14
		±3	± 3		>14

~~The rate of correct measurements observed during repeated tests shall be at least 90%.~~

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.1.1.

8.7.1.1.2.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1.2.4 Method of test

8.7.1.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12.

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

4) The result of step 3) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.

5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated.

6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for intra frequency measurement in clause 8.7.1.1.1.4.2 shall be used.

8.7.1.1.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.2.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.2 Inter frequency measurement accuracy

8.7.1.2.1 Relative accuracy requirement

8.7.1.2.1.1 Definition and applicability

The P-CCPCH_RSCP inter-frequency relative accuracy is defined as the P-CCPCH_RSCP measured from one cell compared to the P-CCPCH_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.2.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left|\text{P - CCPCH RSCP1}\right|_{in\ dB} - \text{P - CCPCH RSCP2}\left|_{in\ dB}\right| \leq 20dB$$

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} \geq -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)\Bigg|_{in\ dB} \geq -13dB$$

Table 8.7.1.2.1.1: P-CCPCH_RSCP inter-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
P-CCPCH_RSCP	dBm	± 6	± 6	-94...-50

~~The rate of correct measurements observed during repeated tests shall be at least 90%.~~

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.

8.7.1.2.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

8.7.1.2.1.4 Method of test

8.7.1.2.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Table 8.7.1.2.1.2: P-CCPCH RSCP inter ~~intra~~ frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.1	-98.7	-97
Îor/Ioc	dB	5	5	7	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.2	-73.2	-54.8	-55.1	-98.7	-100
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2.1.2.

8.7.1.2.1.4.2 Procedure

~~1) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.~~

~~2) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.~~

~~3~~1) SS shall transmit MEASUREMENT CONTROL message.

~~4~~2) UE shall transmit periodically MEASUREMENT REPORT messages for intra frequency and inter frequency measurements.

~~5~~3) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

~~6~~4) The result of step 5) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.

~~7~~5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~5~~3) and ~~6~~4) above are repeated.

~~8~~6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~9~~7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

First MEASUREMENT CONTROL message for intra frequency measurements (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria* (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

Second MEASUREMENT CONTROL message for inter frequency measurements (Step 1): /

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE *inter-frequency cell removal*	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE *reporting critera*	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE *report criteria* (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.1.2.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

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CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **159** ⌘**rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Corrections to P-CCPCH RSCP Measurement Performance Requirements for UTRA TDD (3.84 Mcps Option)
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**A**

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

Release: ⌘ Rel-4

Use one of the following releases:

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

Reason for change:	⌘	Test-specific RRC message contents of MEASURMENT CONTROL for the P-CCPCH RSCP measurement performance requirements in UTRA TDD (3.84 Mcps Option) are missing from the current version of TS 34.122. PHYSICAL CHANNEL RECONFIGURATION can be removed from test procedure for P-CCPCH RSCP inter-frequency accuracy test because not used in TDD context.
Summary of change:	⌘	Introduction of test-specific RRC message contents for MEASURMENT CONTROL for the P-CCPCH RSCP measurement performance requirements in UTRA TDD (3.84 Mcps Option). PHYSICAL CHANNEL RECONFIGURATION removed from test procedure step 1 and 2 for P-CCPCH RSCP inter-frequency accuracy test because not used in TDD context.
Consequences if not approved:	⌘	P-CCPCH RSCP measurement performance test not feasible.

Clauses affected:	⌘	8.7.1

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

⌘

Other comments: ⌘ -

8.7 Measurements Performance Requirements

Unless explicitly stated:

– Reported measurements shall be within defined range in 90 % of the cases.

Measurement channel is 12.2 kbps as defined in TS 25.102 annex A. This measurement channel is used both in active cell and cells to be measured.

– Cell 1 is the active cell.

– Single task reporting.

– Power control is active.

8.7.1 P-CCPCH RSCP

8.7.1.1 Intra frequency measurement accuracy for 3,84 Mcps TDD Option

8.7.1.1.1 Absolute accuracy requirement

8.7.1.1.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP meaasured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.1.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -13dB$$

Table 8.7.1.1.1.1: P-CCPCH_RSCP absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

~~The rate of correct measurements observed during repeated tests shall be at least 90%.~~

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.1 and A.9.1.1.1.1.

8.7.1.1.1.3 Test Purpose

The purpose of this test is to verify that the absolute P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1.1.4 Method of test

8.7.1.1.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12. The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

Table 8.7.1.1.1.2: P-CCPCH RSCP ~~I~~intra frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	0	0	0	0	0
UTRA RF Channel number		Channel 1		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.7		-59.8		-98.7	
Îor/Ioc	dB	5	2	9	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.7	-76.7	-53.8	-60.8	-98.7	-101.7
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.1.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check PCCPCH_RSCP value in MEASUREMENT REPORT messages. PCCPCH_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH_RSCP power for each MEASUREMENT REPORT message.

4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above ~~is~~ are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 2) and 3) above ~~is~~ are repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements -RRC transaction identifier -Integrity check info	 0 Not Present
Measurement Information elements -Measurement Identity -Measurement Command (10.3.7.46) -Measurement Reporting Mode (10.3.7.49) -Measurement Report Transfer Mode -Periodical Reporting / Event Trigger Reporting Mode -Additional measurements list (10.3.7.1)	 1 Modify AM RLC Periodical reporting Not Present
-CHOICE *Measurement type* -Intra-frequency measurement (10.3.7.36) -Intra-frequency measurement objects list (10.3.7.33) -Intra-frequency measurement quantity (10.3.7.38) -Filter coefficient (10.3.7.9) -CHOICE *mode* -Measurement quantity list	Intra-frequency measurement Not Present 0 TDD 1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -Timeslot ISCP reporting indicator -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	 No report FALSE TRUE TDD FALSE TRUE FALSE
-Reporting quantities for monitored set cells (10.3.7.5) -SFN-SFN observed time difference reporting indicator -Cell synchronisation information reporting indicator -Cell Identity reporting indicator -CHOICE *mode* -Timeslot ISCP reporting indicator -Proposed TGSN reporting required -Primary CCPCH RSCP reporting indicator -Pathloss reporting indicator	 No report FALSE TRUE TDD FALSE FALSE TRUE FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61) -CHOICE *reported cell* -Maximum number of reported cells -Measurement validity (10.3.7.51) -CHOICE *report criteria* (10.3.7. -Periodical reporting criteria (10.3.7.53) -Amount of reporting -Reporting interval	 Report all active set cells + cells within monitored set on used frequency 1 Not Present Infinity 250 ms
Physical channel information elements -DPCH compressed mode status info (10.3.6.34)	 Not Present

8.7.1.1.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1.2 Relative accuracy requirement ~~for 3,84 Mcps TDD Option~~

8.7.1.1.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.1.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1.2.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -8dB$$

$$\left(\frac{SCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -13dB$$

$$\left|\text{P - CCPCH RSCP1}\big|_{in\ dB} - \text{P - CCPCH RSCP2}\big|_{in\ dB}\right| \leq 20dB$$

Relative Io difference [dB] ≤ relative RSCP difference [dB]

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1.2.1: P-CCPCH_RSCP intra-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions	
		Normal condition	Extreme condition	Io [dBm]	relative RSCP difference [dbB]
P-CCPCH_RSCP	dBm	±1	±1	-94...-50	<2
		±2	±2		2...14
		±3	± 3		>14

~~The rate of correct measurements observed during repeated tests shall be at least 90%.~~

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.1.1.

8.7.1.1.2.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1.2.4 Method of test

8.7.1.1.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 4 and the UL DPCH shall be transmitted in timeslot 12.

The second Beacon timeslot shall be provided in timeslot 8 for both cell 1 and cell 2. P-CCPCH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1.1.2.

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1.1.2.

8.7.1.1.2.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

4) The result of step 3) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.

5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated.

6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

MEASUREMENT CONTROL message for intra frequency measurement in clause 8.7.1.1.1.4.2 shall be used.

8.7.1.1.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1.2.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1A Intra frequency measurement accuracy for 1.28 Mcps TDD Option

8.7.1.1A.1 Absolute accuracy requirement

8.7.1.1A.1.1 Definition and applicability

The absolute accuracy of P-CCPCH RSCP is defined as the P-CCPCH RSCP measured from one cell compared to the actual P-CCPCH RSCP power from the same cell.

The requirements and this test apply to all types of UTRA TDD UE 1.28 Mcps option.

8.7.1.1A.1.2 Minimum Requirements

The absolute accuracy requirements in table 8.7.1.1A.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P-CCPCH\_E_c}{I_o} \right) \Big|_{in\ dB} \geq -8dB$$

$$\left(\frac{DwPCH\_E_c}{I_o} \right) \Big|_{in\ dB} \geq -5dB$$

Table 8.7.1.1A.1.1: P-CCPCH_RSCP absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.1 and A.9.2.1.1.1.

8.7.1.1A.1.3 Test Purpose

The purpose of this test is to verify that the absolute P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1A.1.4 Method of test

8.7.1.1A.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 5 and the UL DPCH shall be transmitted in timeslot 2. P-CCPCH RSCP intra frequency absolute accuracy requirements are tested by using test parameters in table 8.7.1.1A.1.2.

Table 8.7.1.1A.1.2: P-CCPCH RSCP Intra frequency test parameters

	Test 1				
Parameter	**Unit**	**Cell 1**		**Cell 2**	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3	
DwPCH_Ec/Ior	dB		0		0
OCNS_Ec/Ior	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB	5		2	
I_{oc}	dBm/ 1.28 MHz	-76.6			
PCCPCH RSCP, Note 1	dBm	-74.6		-77.6	
Io, Note 1	dBm/ 1.28 MHz	-69			
Propagation condition		AWGN			
	Test 2				
Parameter	**Unit**	**Cell 1**		**Cell 2**	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3	
DwPCH_Ec/Ior	dB		0		0
OCNS_Ec/Ior	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB	9		2	
I_{oc}	dBm/ 1.28 MHz	-60.2			
PCCPCH RSCP, Note 1	dBm	-54.2		-61.2	
Io, Note 1	dBm/ 1.28 MHz	-50			
Propagation condition		AWGN			
	Test 3				
Parameter	**Unit**	**Cell 1**		**Cell 2**	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 1	
PCCPCH_Ec/Ior	dB	-3		-3	
DwPCH_Ec/Ior	dB		0		0
OCNS_Ec/Ior	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB	5		3	
I_{oc}	dBm/ 1.28 MHz	-101.9			
PCCPCH RSCP, Note 1	dBm	-99.9		-101.9	
Io, Note 1	dBm/ 1.28 MHz	-94			
Propagation condition		AWGN			
NOTE 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.					

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1A.1.2.

8.7.1.1A.1.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check PCCPCH_RSCP value in MEASUREMENT REPORT messages. PCCPCH_RSCP power of Cell 1 reported by UE is compared to actual PCCPCH_RSCP power for each MEASUREMENT REPORT message.

4) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1A.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1A.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, step 3) above is repeated.

5) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

6) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.1A.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1A.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.1A.2 Relative accuracy requirement ~~for 1.28 Mcps TDD Option~~

8.7.1.1A.2.1 Definition and applicability

The relative accuracy of PCCPCH RSCP is defined as the PCCPCH RSCP measured from one cell compared to the PCCPCH RSCP measured from another cell on the same frequency.

The requirements and this test apply to all types of UTRA TDD UE 1.28 Mcps option.

8.7.1.1A.2.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.1A.2.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -8dB$$

$$\left(\frac{DwPCH\_E_c}{I_o}\right)\Big|_{in\ dB} \geq -5dB$$

$$\left|\text{P - CCPCH RSCP1}\big|_{in\ dB} - \text{P - CCPCH RSCP2}\big|_{in\ dB}\right| \leq 20dB$$

Relative Io difference [dB] ≤ relative RSCP difference [dB]

It is assumed that the measurements of P-CCPCH RSCP1 and P-CCPCH RSCP2 can be performed within 20ms due to slot allocations in the cells concerned.

Table 8.7.1.1A.2.1: P-CCPCH_RSCP intra-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions	
		Normal condition	Extreme condition	Io [dBm]	relative RSCP difference [dbB]
P-CCPCH_RSCP	dBm	±1	±1	-94...-50	<2
		±2	±2		2...14
		±3	± 3		>14

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.2.1.1.1.

8.7.1.1A.2.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits.

8.7.1.1A.2.4 Method of test

8.7.1.1A.2.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case all cells are on the same frequency. Cell 1 and cell 2 shall be synchronised, i.e. share the same frame and timeslot timing. The DL DPCH shall be transmitted in timeslot 5 and the UL DPCH shall be transmitted in timeslot 2. P-CCPCH RSCP intra frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.1A.1.2.

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.1A.1.2.

8.7.1.1A.2.4.2 Procedure

1) SS shall transmit MEASUREMENT CONTROL message.

2) UE shall transmit periodically MEASUREMENT REPORT messages.

3) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

4) The result of step 3) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.

5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1A.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated. After further 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.1A.1.2 for Test 3. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 3) and 4) above are repeated.

6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.1A.2.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.1A.2.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.2 Inter frequency measurement accuracy for 3,84 Mcps TDD Option

8.7.1.2.1 Relative accuracy requirement

8.7.1.2.1.1 Definition and applicability

The P-CCPCH_RSCP inter-frequency relative accuracy is defined as the P-CCPCH_RSCP measured from one cell compared to the P-CCPCH_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE.

8.7.1.2.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left| \text{P - CCPCH RSCP1}\big|_{in\ dB} - \text{P - CCPCH RSCP2}\big|_{in\ dB} \right| \le 20dB$$

$$\left(\frac{P-CCPCH\_E_c}{I_o} \right)\Big|_{in\ dB} \ge -8dB$$

$$\left(\frac{SCH\_E_c}{I_o} \right)\Big|_{in\ dB} \ge -13dB$$

Table 8.7.1.2.1.1 P-CCPCH_RSCP inter-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
P-CCPCH_RSCP	dBm	± 6	± 6	-94...-50

~~The rate of correct measurements observed during repeated tests shall be at least 90%.~~

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.1.1.

8.7.1.2.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

8.7.1.2.1.4 Method of test

8.7.1.2.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. The second Beacon timeslot shall be provided in timeslot 8 for cell 1 and in timeslot 10 for cell 2. P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2.1.2.

Table 8.7.1.2.1.2: P-CCPCH RSCP inter~~intra~~ frequency test parameters

Parameter	Unit	Test 1		Test 2		Test 3	
		Cell 1	Cell 2	Cell 1	Cell 2	Cell 1	Cell 2
DL timeslot number		0	2	0	2	0	2
UTRA RF Channel number		Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
PCCPCH_Ec/Ior	dB	-3		-3		-3	
SCH_Ec/Ior	dB	-9		-9		-9	
SCH_t_{offset}		0	5	0	5	0	5
OCNS_Ec/Ior	dB	-3,12		-3,12		-3,12	
Ioc	dBm / 3.84 MHz	-75.2	-75.2	-57.8	-54.1	-98.7	-97
Îor/Ioc	dB	5	5	7	2	3	0
PCCPCH RSCP, Note 1	dBm	-73.2	-73.2	-54.8	-55.1	-98.7	-100
Io, Note 1	dBm / 3.84 MHz	-69		-50		-94	
Propagation condition		AWGN		AWGN		AWGN	
NOTE 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2.1.2.

8.7.1.2.1.4.2 Procedure

~~1) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.~~

~~2) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.~~

~~3~~1) SS shall transmit the MEASUREMENT CONTROL messages for intra frequency and inter frequency measurements.

~~4~~2) UE shall transmit periodically MEASUREMENT REPORT messages.

~~5~~3) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

~~6~~4) The result of step 5) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.

~~7~~5) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps ~~5~~3) and ~~6~~4) above are repeated.

~~8~~6) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

~~9~~7) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex I, with the following exceptions:

First MEASUREMENT CONTROL message for intra frequency measurements (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH RSCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria* (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	250 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

Second MEASUREMENT CONTROL message for inter frequency measurements (Step 1):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	2
-Measurement Command (10.3.7.46)	Setup
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Periodical reporting
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE *inter-frequency cell removal*	Not present
-New inter-frequency cells	Cell 2 information is included
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE *reporting critera*	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	FALSE
-Frequency quality estimate	TRUE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	
-CHOICE reported cell	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	Virtual/active set cells + 2
-Measurement validity (10.3.7.51)	Not present
-Inter-frequency set update	Not present
-CHOICE *report criteria* (10.3.7.	
-Periodical reporting criteria (10.3.7.53)	
-Amount of reporting	Infinity
-Reporting interval	500 ms
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

8.7.1.2.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.7.1.2A Inter frequency measurement accuracy for 1.28 Mcps TDD Option

8.7.1.2A.1 Relative accuracy requirement

8.7.1.2A.1.1 Definition and applicability

The P-CCPCH_RSCP inter-frequency relative accuracy is defined as the P-CCPCH_RSCP measured from one cell compared to the P-CCPCH_RSCP measured from another cell on a different frequency.

The requirements and this test apply to all types of UTRA TDD UE 1.28 Mcps option.

8.7.1.2A.1.2 Minimum Requirements

The relative accuracy requirements in table 8.7.1.2A.1.1 are valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm.

$$\left| \text{P - CCPCH RSCP1}\big|_{in\ dB} - \text{P - CCPCH RSCP2}\big|_{in\ dB} \right| \le 20dB$$

$$\left(\frac{P-CCPCH\_E_c}{I_o} \right)\Bigg|_{in\ dB} \ge -8dB$$

$$\left(\frac{DwPCH\_E_c}{I_o} \right)\Bigg|_{in\ dB} \ge -5dB$$

Table 8.7.1.2A.1.1 P-CCPCH_RSCP inter-frequency relative accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
P-CCPCH_RSCP	dBm	± 6	± 6	-94...-50

The rate of correct measurements observed during repeated tests shall be at least 90%.

The normative reference for this requirement is TS 25.123 [2] clauses 9.1.1.1.2 and A.9.2.1.

8.7.1.2A.1.3 Test Purpose

The purpose of this test is to verify that the relative P-CCPCH RSCP measurement accuracy is within the specified limits for the inter frequency case.

8.7.1.2A.1.4 Method of test

8.7.1.2A.1.4.1 Initial conditions

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

In this case both cells are on different frequencies. P-CCPCH RSCP inter frequency relative accuracy requirements are tested by using test parameters in table 8.7.1.2A.1.2.

Table 8.7.1.2A.1.2: P-CCPCH RSCP Intra frequency test parameters

	Test 1				
Parameter	**Unit**	**Cell 1**		**Cell 2**	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/Ior	dB	-3		-3	
DwPCH_Ec/Ior	dB		0		0
OCNS_Ec/Ior	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB	5		5	
I_{oc}	dBm/ 1.28 MHz	-75.2		-75.2	
PCCPCH RSCP, Note 1	dBm	-73.2		-73.2	
Io, Note 1	dBm/ 1.28 MHz	-69			
Propagation condition		AWGN			
	Test 2				
Parameter	**Unit**	**Cell 1**		**Cell 2**	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/Ior	dB	-3		-3	
DwPCH_Ec/Ior	dB		0		0
OCNS_Ec/Ior	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB	7		2	
I_{oc}	dBm/ 1.28 MHz	-57.8		-54.1	
PCCPCH RSCP, Note 1	dBm	-53.8		-55.1	
Io, Note 1	dBm/ 1.28 MHz	-50			
Propagation condition		AWGN			
	Test 3				
Parameter	**Unit**	**Cell 1**		**Cell 2**	
Timeslot Number		0	DwPTS	0	DwPTS
UTRA RF Channel Number		Channel 1		Channel 2	
PCCPCH_Ec/Ior	dB	-3		-3	
DwPCH_Ec/Ior	dB		0		0
OCNS_Ec/Ior	dB	-3		-3	
$\hat{I}_{or}/I_{oc}$	dB	3		0	
I_{oc}	dBm/ 1.28 MHz	-98.7		-97	
PCCPCH RSCP, Note 1	dBm	-98.7		-100	
Io, Note 1	dBm/ 1.28 MHz	-94			
Propagation condition		AWGN			
NOTE 1: PCCPCH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.					

1) A call is set up according to the test procedure specified in TS 34.108 [3] clause 7.3.2.3. The RF parameters for Test 1 are set up according to table 8.7.1.2A.1.2.

8.7.1.2A.1.4.2 Procedure

1) SS shall transmit PHYSICAL CHANNEL RECONFIGURATION message.

2) UE shall transmit PHYSICAL CHANNEL RECONFIGURATION COMPLETE message.

3) SS shall transmit MEASUREMENT CONTROL message.

4) UE shall transmit periodically MEASUREMENT REPORT messages.

5) SS shall check PCCPCH_RSCP value of Cell 1 and Cell 2 in MEASUREMENT REPORT messages. PCCPCH RSCP power value measured from Cell 1 is compared to PCCPCH RSCP power value measured from Cell 2 for each MEASUREMENT REPORT message.

6) The result of step 5) is compared to actual power level difference of PCCPCH RSCP of Cell 1 and Cell 2.

7) SS shall count number of MEASUREMENT REPORT messages transmitted by UE. After 1000 MEASUREMENT REPORT messages have been received from UE, the RF parameters are set up according to table 8.7.1.2A.1.2 for Test 2. While RF parameters are being set up, MEASUREMENT REPORT messages from UE are ignored. SS shall wait for additional 1s and ignore the MEASUREMENT REPORT messages during this period. Then, steps 5) and 6) above are repeated.

8) After further 1000 MEASUREMENT REPORT messages have been received from UE, the SS shall transmit RRC CONNECTION RELEASE message.

9) UE shall transmit RRC CONNECTION RELEASE COMPLETE message.

8.7.1.2A.1.5 Test requirements

The PCCPCH RSCP measurement accuracy shall meet the requirements in clause 8.7.1.2A.1.2 for at least 900 of the measurement reports at each input level in step 4.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

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CHANGE REQUEST

⌘ **34.122** **CR** **160** ⌘ **rev** **-** ⌘ Current version: **3.10.0** ⌘

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

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

Title:	⌘	Statistical testing of RRM delay performance in Annex F.6.2 for UTRA TDD
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**F** ***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change:	⌘	Annex F.6.2 contains a fixed number for repetitions. This would only allow a simple pass fail decision but not with predefined confidence levels, as required by RAN WG4. The approach for statistical testing in UTRA TDD needs to be updated according to the recent changes adapted for UTRA FDD in T1R-020332.
Summary of change:	⌘	A general test procedure, according to the recent changes adapted for UTRA FDD in T1R-020332, is introduced for UTRA TDD, to decide RRM delay tests with a predefined confidence level.
Consequences if not approved:	⌘	The quality of RRM delay tests is unknown.

Clauses affected:	⌘	F.6.2

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

Other comments: ⌘ -

F.6.2 Statistical testing of RRM delay performance

~~Delay tests in subclause 8.2 shall be repeated [50] times in order to determine the required success ratio~~

~~Note: A statistical approach needs to be developed. The number of repetitions required for the test will target towards a good compromise between test time and wrong decision risk.~~

F.6.2.1 Test Method

Each test is performed in the following manner:

a) Setup the required test conditions.

b) Measure the delay repeated times. Start each repetition after sufficient time, such that each delay test is independent from the previous one. The delay-times, measured, are simplified to:

a good delay, if the measured delay is ≤ limit.
a bad delay, if the measured delay is > limit

c) Record the number of delays (ns), tested, and the number of bad delays (ne)

d) Stop the test at an early pass or an early fail event.

e) Once the test is stopped, decide according to the pass fail decision rules (subclause F.6.2.7)

F.6.2.2 Bad Delay Ratio (ER)

The Bad Delay Ratio (ER) is defined as the ratio of bad delays (ne) to all delays (ns).
(1-ER is the success ratio)

F.6.2.3 Test Criteria

The test shall fulfil the following requirements:

a) good pass fail decision

1) to keep reasonably low the probability (risk) of passing a bad unit for each individual test;

2) to have high probability of passing a good unit for each individual test;

b) good balance between test-time and statistical significance

3) to perform measurements with a high degree of statistical significance;

4) to keep the test time as low as possible.

F.6.2.4 Calculation assumptions

F.6.2.4.1 Statistical independence

It is arranged by test conditions, that bad delays are independent statistical events.

F.6.2.4.2 Applied formulas

The specified ER is 10% in most of the cases. This stipulates to use the binomial distribution to describe the RRM delay statistics. With the binomial distribution optimal results can be achieved. However the inverse cumulative operation for the binomial distribution is not supported by standard mathematical tools. The use of the Poisson or Chi Square Distribution requires ER→0. Using one of this distributions instead of the binomial distribution gives sub-optimal results in the conservative sense: a pass fail decision is done later than optimal and with a lower wrong decision risk than predefined.

The formulas, applied to describe the RRM delay statistics test, are based on the following experiment:

(1) After having observed a certain number of bad delays (**ne**) the number of all delays (**ns**) are counted to calculate ER. Provisions are made (note 1) such that the complementary experiment is valid as well:

(2) After a certain number of delays (**ns**) the number of bad delays (**ne**), occurred, are counted to calculate ER.

Experiment (1) stipulates to use the Chi Square Distribution with degree of freedom ne: 2*dchisq(2*NE,2*ne).

Experiment (2) stipulates to use the Poisson Distribution: dpois(ne,NE)

(NE: mean value of the distribution)
To determine the early stop conditions, the following inverse cumulative operation is applied:
0.5 * qchisq(D,2*ne) for experiment (1) and (2)
D: wrong decision risk per test step
Note: other inverse cumulative operations are available, however only this is suited for experiment (1) and (2).

F.6.2.4.3 Approximation of the distribution

The test procedure is as follows:

During a running measurement for a UE ns (Number of Delays) and ne (Number of bad delays) are accumulated and from this the preliminary ER is calculated. Then new samples up to the next bad delay are taken. The entire past and the new samples are basis for the next preliminary ER. Depending on the result at every step, the UE can pass, can fail or must continue the test.

As early pass- and early fail-UEs leave the statistical totality under consideration, the experimental conditions are changed every step resulting in a distribution that is truncated more and more towards the end of the entire test. Such a distribution can not any more be handled analytically. The unchanged distribution is used as an approximation to calculate the early fail and early pass bounds.

F.6.2.5 Definition of good pass fail decision.

This is defined by the probability of wrong decision F at the end of the test. The probability of a correct decision is 1- F.

The probability (risk) to fail a good DUT shall be ≤ F according to the following definition: A DUT is failed, accepting a probability of ≤ F that the DUT is still better than the specified bad delay ratio (Test requirement).

The probability (risk) to pass a bad DUT shall be ≤ F according to the following definition: A DUT is passed, accepting a probability of ≤ F that the DUT is still worse than M times the specified bad delay ratio. (M>=1 is the bad DUT factor).

This definitions lead to an early pass and an early fail limit:

Early fail: er≥ er**lim**$_{fail}$

$$er\lim_{fail}(D,ne) = \frac{2*ne}{qchisq(D,2*ne)} \quad (1)$$

For ne ≥ [5],

Early pass: er ≤ er**lim**bad$_{pass}$

$$er\lim bad_{pass}(D,ne) = \frac{2*ne*M}{qchisq(1-D,2*ne)} \quad (2)$$

For ne ≥1,

With,

er (normalized ER): ER according to F.6.2.2 divided by specified ER

D: wrong decision probability for a test step . This is a numerically evaluated fraction of F, the wrong decision probability at the end of the test. see table F.6.2.6.1

ne: Number of bad delays

M: bad DUT factor see table F.6.2.6.1

qchisq: inverse cumulative chi squared distribution

F.6.2.6 Good balance between test-time and statistical significance

Two independent test parameters are introduced into the test and shown in Table F.6.2.6.1. These are the obvious basis of test time and statistical significance. From them four dependent test parameters are derived.

Table F.6.2.6: Independent and dependent test parameters

Independent test parameters			Dependent test parameters		
Test Parameter	Value	Reference	Test parameter	Value	Reference
Bad DUT factor M	[1.5]	Table F.6.1.8	Early pass/fail condition	Curves	Subclause F.6.2.5 Figure 6.2.9
Final probability of wrong pass/fail decision F	[5%]	Table F.6.2.8	Target number of bad delays	[154]	Table 6.2.8
			Probability of wrong pass/fail decision per test step D	[0.6 %]	
			Test limit factor TL	[1.236]	Table 6.2.8

F.6.2.7 Pass fail decision rules

The required confidence level 1-F (= correct decision probability) shall be achieved. This is fulfilled at an early pass or early fail event. Sum up the number of all delays (ns) and the number of bad delays from the beginning of the test and calculate:

ER_1 (including the artificial error at the beginning of the test (Note 1))and

ER_0 (excluding the artificial error at the beginning of the test (Note 1)).

If ER_0 is on or above the early fail limit, fail the DUT.

If ER_1 is on or below the early pass limit, pass the DUT.

Otherwise continue the test.

F.6.2.8 Test conditions for RRM delay tests

Table F.6.2.8: Test conditions for a single RRM delay tests

Type of test	Test requirement Delay (s)	Test requirement (ER)	Testlimit(ER) = Test requirement (ER)x TL TL	Target number of bad delays	Prob that good unit will fail = Prob that bad unit will pass [%]	Bad unit factor M
~~A.4.2.1~~8.2.2.1 TDD/TDD Cell re-selection in Idle mode (single carrier)	8	0.1	[1.236]	[154]	[5]	[1.5]
~~A.4.2.2~~8.2.2.2 TDD/TDD Cell re-selection in Idle Mode (mulit-carrier)	8	0.1	[1.236]	[154]	[5]	[1.5]
~~A.4.2.3~~8.2.2.3 TDD/FDD Cell re-selection in Idle Mode	8					
~~A.4.2.4~~8.2.2.4 UTRAN to GSM cell re-selection in Idle Mode	27.9	0.1	[1.236]	[154]	[5]	[1.5]
~~A.5.1~~8.3.1 TDD/TDD handover	40 ms	0.1	[1.236]	[154]	[5]	[1.5]
~~A.5.2~~8.3.2 TDD/FDD handover	100 ms	0.1	[1.236]	[154]	[5]	[1.5]
~~A.5.3~~8.3.3 TDD/GSM handover	40ms	0.1	[1.236]	[154]	[5]	[1.5]
~~A.5.4.1~~8.3.4 TDD/TDD Cell Re-selection in CELL_FACH	2.5	0.1	[1.236]	[154]	[5]	[1.5]
~~A.5.5~~8.3.5 TDD/TDD Cell Re-selection in CELL_PCH	8	0.1	[1.236]	[154]	[5]	[1.5]
~~A.5.6~~8.3.6 TDD/TDD Cell Re-selection in URA_PCH	8	0.1	[1.236]	[154]	[5]	[1.5]

F.6.2.9 Practical Use (informative)

See figure F.6.2.9:

The early fail limit represents formula (1) in F.6.2.5. The range of validity is [ne≥ 5] to [ne = 154]

The early pass limit represents the formula (2) in F.6.2.5. The range of validity is ne=1 to [ne =154]. See note 1. The intersection co-ordinates of both curves are : target number of bad delays ne = [154] and test limit TL = [1.236].

A typical delay test, calculated form the number of samples and errors (F.6.2.2) using experimental method (1) or (2) (see F.6.2.4.2. calculation assumptions) runs along the yellow trajectory. With an good delay the trajectory goes down vertically. With a bad delay it jumps up right. The tester checks if the ER test intersects the early fail or early pass limits.

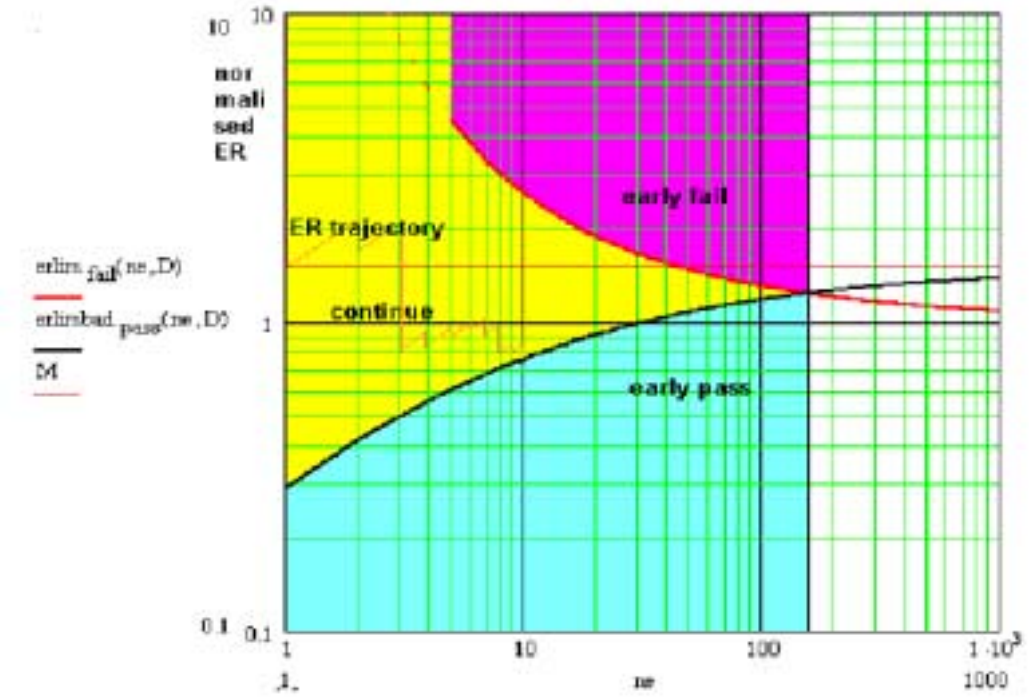

Figure F.6.2.9

Note 1: At the beginning of the test, an artificial bad delay is introduced. This ensures that an ideal DUT meets the valid range of the early pass limit. In addition this ensures that the complementary experiment (F.6.2.4.2. bullet point (2)) is applicable as well. For the check against the early fail limit the artificial bad delay sample, introduced at the beginning of the test , is disregarded.

Due to the nature of the test, namely discrete bad delay events, the early fail condition shall not be valid, when fractional bad delays <1 are used to calculate the early fail limit: Any early fail decision is postponed until number of errors ne ≥ [5].

3GPP TSG-T1 Meeting #18
San Antonio, Texas, USA, February 10th-14th 2003

Tdoc ⌘T1-030177

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **161** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Statistical testing of RRM delay performance in Annex F.6.2 for UTRA TDD (3.84 Mcps option)
Source:	⌘	T1-RF
Work item code:	⌘	***Date:*** ⌘ 13/01/2003
Category:	⌘	**A** ***Release:*** ⌘ Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	Annex F.6.2 contains a fixed number for repetitions. This would only allow a simple pass fail decision but not with predefined confidence levels, as required by RAN WG4. The approach for statistical testing in UTRA TDD (3.84 Mcps option) needs to be updated according to the recent changes adapted for UTRA FDD in T1R-020332.
Summary of change:	⌘	A general test procedure, according to the recent changes adapted for UTRA FDD in T1R-020332, is introduced for UTRA TDD (3.84 Mcps option), to decide RRM delay tests with a predefined confidence level.
Consequences if not approved:	⌘	The quality of RRM delay tests is unknown.

Clauses affected:	⌘	F.6.2

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

Other comments: ⌘ -

F.6.2 Statistical testing of RRM delay performance (3.84 Mcps TDD option)

F.6.2.1 Test Method

Each test is performed in the following manner:

a) Setup the required test conditions.

b) Measure the delay repeated times. Start each repetition after sufficient time, such that each delay test is independent from the previous one. The delay-times, measured, are simplified to:

a good delay, if the measured delay is ≤ limit.
a bad delay, if the measured delay is > limit

c) Record the number of delays (ns), tested, and the number of bad delays (ne)

d) Stop the test at an early pass or an early fail event.

e) Once the test is stopped, decide according to the pass fail decision rules (subclause F.6.2.7)

F.6.2.2 Bad Delay Ratio (ER)

The Bad Delay Ratio (ER) is defined as the ratio of bad delays (ne) to all delays (ns).
(1-ER is the success ratio)

F.6.2.3 Test Criteria

The test shall fulfil the following requirements:

a) good pass fail decision

1) to keep reasonably low the probability (risk) of passing a bad unit for each individual test;

2) to have high probability of passing a good unit for each individual test;

b) good balance between test-time and statistical significance

3) to perform measurements with a high degree of statistical significance;

4) to keep the test time as low as possible.

F.6.2.4 Calculation assumptions

F.6.2.4.1 Statistical independence

It is arranged by test conditions, that bad delays are independent statistical events.

F.6.2.4.2 Applied formulas

The specified ER is 10% in most of the cases. This stipulates to use the binomial distribution to describe the RRM delay statistics. With the binomial distribution optimal results can be achieved. However the inverse cumulative operation for the binomial distribution is not supported by standard mathematical tools. The use of the Poisson or Chi Square Distribution requires ER→0. Using one of this distributions instead of the binomial distribution gives sub-optimal results in the conservative sense: a pass fail decision is done later than optimal and with a lower wrong decision risk than predefined.

The formulas, applied to describe the RRM delay statistics test, are based on the following experiment:

(1) After having observed a certain number of bad delays (**ne**) the number of all delays (**ns**) are counted to calculate ER. Provisions are made (note 1) such that the complementary experiment is valid as well:

(2) After a certain number of delays (**ns**) the number of bad delays (**ne**), occurred, are counted to calculate ER.

Experiment (1) stipulates to use the Chi Square Distribution with degree of freedom ne: 2*dchisq(2*NE,2*ne).

Experiment (2) stipulates to use the Poisson Distribution: dpois(ne,NE)

(NE: mean value of the distribution)
To determine the early stop conditions, the following inverse cumulative operation is applied:
0.5 * qchisq(D,2*ne) for experiment (1) and (2)
D: wrong decision risk per test step
Note: other inverse cumulative operations are available, however only this is suited for experiment (1) and (2).

F.6.2.4.3 Approximation of the distribution

The test procedure is as follows:

During a running measurement for a UE ns (Number of Delays) and ne (Number of bad delays) are accumulated and from this the preliminary ER is calculated. Then new samples up to the next bad delay are taken. The entire past and the new samples are basis for the next preliminary ER. Depending on the result at every step, the UE can pass, can fail or must continue the test.

As early pass- and early fail-UEs leave the statistical totality under consideration, the experimental conditions are changed every step resulting in a distribution that is truncated more and more towards the end of the entire test. Such a distribution can not any more be handled analytically. The unchanged distribution is used as an approximation to calculate the early fail and early pass bounds.

F.6.2.5 Definition of good pass fail decision.

This is defined by the probability of wrong decision F at the end of the test. The probability of a correct decision is 1- F.

The probability (risk) to fail a good DUT shall be ≤ F according to the following definition: A DUT is failed, accepting a probability of ≤ F that the DUT is still better than the specified bad delay ratio (Test requirement).

The probability (risk) to pass a bad DUT shall be ≤ F according to the following definition: A DUT is passed, accepting a probability of ≤ F that the DUT is still worse than M times the specified bad delay ratio. (M>=1 is the bad DUT factor).

This definitions lead to an early pass and an early fail limit:

Early fail: er≥ er**lim**$_{fail}$

$$er\lim_{fail}(D,ne) = \frac{2*ne}{qchisq(D,2*ne)} \quad (1)$$

For ne ≥ [5],

Early pass: er ≤ er**lim**bad$_{pass}$

$$er\lim bad_{pass}(D,ne) = \frac{2*ne*M}{qchisq(1-D,2*ne)} \quad (2)$$

For ne ≥1,

With,

er (normalized ER): ER according to F.6.2.2 divided by specified ER

D: wrong decision probability for a test step . This is a numerically evaluated fraction of F, the wrong decision probability at the end of the test. see table F.6.2.6.1

ne: Number of bad delays

M: bad DUT factor see table F.6.2.6.1

qchisq: inverse cumulative chi squared distribution

F.6.2.6 Good balance between test-time and statistical significance

Two independent test parameters are introduced into the test and shown in Table F.6.2.6.1. These are the obvious basis of test time and statistical significance. From them four dependent test parameters are derived.

Table F.6.2.6: Independent and dependent test parameters

Independent test parameters			Dependent test parameters		
Test Parameter	Value	Reference	Test parameter	Value	Reference
Bad DUT factor M	[1.5]	Table F.6.1.8	Early pass/fail condition	Curves	Subclause F.6.2.5 Figure 6.2.9
Final probability of wrong pass/fail decision F	[5%]	Table F.6.2.8	Target number of bad delays	[154]	Table 6.2.8
			Probability of wrong pass/fail decision per test step D	[0.6 %]	
			Test limit factor TL	[1.236]	Table 6.2.8

F.6.2.7 Pass fail decision rules

The required confidence level 1-F (= correct decision probability) shall be achieved. This is fulfilled at an early pass or early fail event. Sum up the number of all delays (ns) and the number of bad delays from the beginning of the test and calculate:

ER_1 (including the artificial error at the beginning of the test (Note 1))and

ER_0 (excluding the artificial error at the beginning of the test (Note 1)).

If ER_0 is on or above the early fail limit, fail the DUT.

If ER_1 is on or below the early pass limit, pass the DUT.

Otherwise continue the test.

F.6.2.8 Test conditions for RRM delay tests

Table F.6.2.8: Test conditions for a single RRM delay tests

Type of test	Test requirement Delay (s)	Test requirement (ER)	Testlimit(ER) = Test requirement (ER)x TL TL	Target number of bad delays	Prob that good unit will fail = Prob that bad unit will pass [%]	Bad unit factor M
~~A.4.2.1~~8.2.2.1 TDD/TDD Cell re-selection in Idle mode (single carrier)	8	0.1	[1.236]	[154]	[5]	[1.5]
~~A.4.2.2~~8.2.2.2 TDD/TDD Cell re-selection in Idle Mode (mulit-carrier)	8	0.1	[1.236]	[154]	[5]	[1.5]
~~A.4.2.3~~8.2.2.3 TDD/FDD Cell re-selection in Idle Mode	8					
~~A.4.2.4~~8.2.2.4 UTRAN to GSM cell re-selection in Idle Mode	27.9	0.1	[1.236]	[154]	[5]	[1.5]
~~A.5.1~~8.3.1 TDD/TDD handover	40 ms	0.1	[1.236]	[154]	[5]	[1.5]
~~A.5.2~~8.3.2 TDD/FDD handover	100 ms	0.1	[1.236]	[154]	[5]	[1.5]
~~A.5.3~~8.3.3 TDD/GSM handover	40ms	0.1	[1.236]	[154]	[5]	[1.5]
~~A.5.4.1~~8.3.4 TDD/TDD Cell Re-selection in CELL_FACH	2.5	0.1	[1.236]	[154]	[5]	[1.5]
~~A.5.5~~8.3.5 TDD/TDD Cell Re-selection in CELL_PCH	8	0.1	[1.236]	[154]	[5]	[1.5]
~~A.5.6~~8.3.6 TDD/TDD Cell Re-selection in URA_PCH	8	0.1	[1.236]	[154]	[5]	[1.5]

F.6.2.9 Practical Use (informative)

See figure F.6.2.9:

The early fail limit represents formula (1) in F.6.2.5. The range of validity is [ne≥ 5] to [ne = 154]

The early pass limit represents the formula (2) in F.6.2.5. The range of validity is ne=1 to [ne =154]. See note 1. The intersection co-ordinates of both curves are : target number of bad delays ne = [154] and test limit TL = [1.236].

A typical delay test, calculated form the number of samples and errors (F.6.2.2) using experimental method (1) or (2) (see F.6.2.4.2. calculation assumptions) runs along the yellow trajectory. With an good delay the trajectory goes down vertically. With a bad delay it jumps up right. The tester checks if the ER test intersects the early fail or early pass limits.

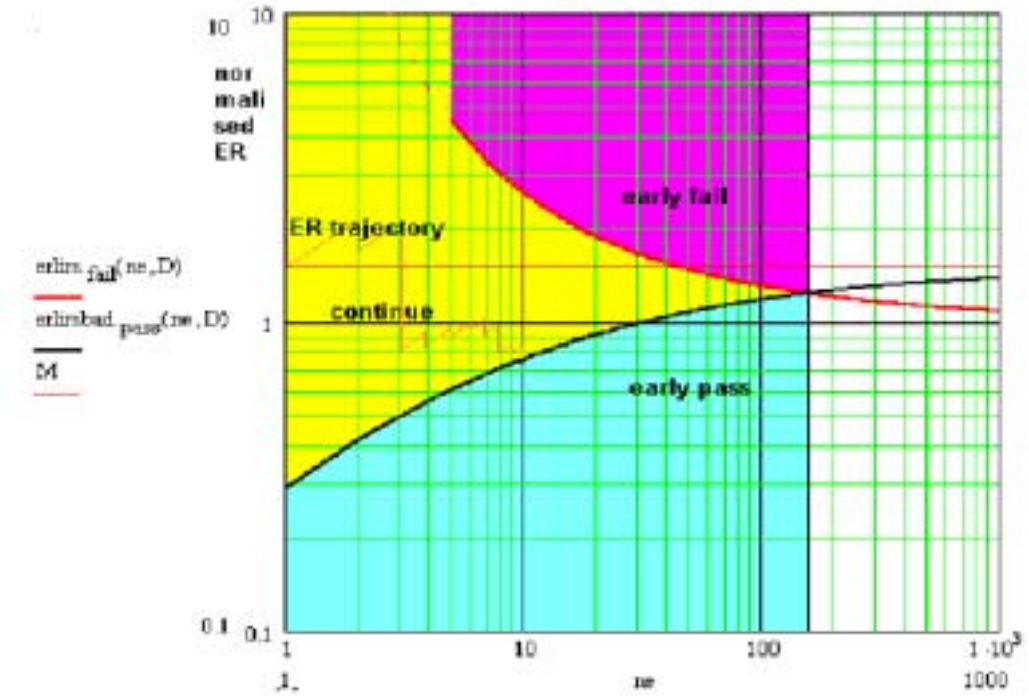

Figure F.6.2.9

Note 1: At the beginning of the test, an artificial bad delay is introduced. This ensures that an ideal DUT meets the valid range of the early pass limit. In addition this ensures that the complementary experiment (F.6.2.4.2. bullet point (2)) is applicable as well. For the check against the early fail limit the artificial bad delay sample, introduced at the beginning of the test , is disregarded.

Due to the nature of the test, namely discrete bad delay events, the early fail condition shall not be valid, when fractional bad delays <1 are used to calculate the early fail limit: Any early fail decision is postponed until number of errors ne ≥ [5].

F.6.2A Statistical testing of RRM delay performance (1.28 Mcps TDD option)

Delay tests in subclause 8.2 shall be repeated [50] times in order to determine the required success ratio

Note: A statistical approach needs to be developed. The number of repetitions required for the test will target towards a good compromise between test time and wrong decision risk.

3GPP TSG -T1RF Meeting 28
San Antonio, TX, USA 10th to 14th February 2003

Tdoc ⌘T1-030181

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **162** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Addition of Event 1G triggered reporting LCRTDD test case
Source:	⌘	T1RF
Work item code:	⌘	LCRTDD
Date:	⌘	11/02/2003
Category:	⌘	**F**
Release:	⌘	Rel 4

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

Use one of the following releases:

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

Reason for change:	⌘	Updates to reflect latest version core specification
Summary of change:	⌘	Addition of LCR test case for event 1G (Change of best TDD cell) reporting
Consequences if not approved:	⌘	Incomplete testing, not reflecting latest core specification.

Clauses affected:	⌘	8.6.1.1

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

⌘

Other comments: ⌘ Based on core spec 25.123 clauses A8.6.1, added by CR 44 (RP-010097), last changed in CR 269 (RP-020480)
This document was originally T1R030055 from Siemens AG

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

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

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

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

8.6 UE Measurements Procedures

8.6.1 TDD intra frequency measurements

~~8.6.1.1 Event triggered reporting in AWGN propagation conditions~~

~~Void.~~ 8.6.1.1 Event 1G triggered reporting in AWGN propagation conditions

8.6.1.1.1Definition and Applicability

8.6.1.1.1.1 3.84 Mcps TDD option

FFS

8.6.1.1.2 1.28 Mcps TDD option

The purpose of this test is to verify that the UE makes correct reporting of event 1G (Change of best TDD cell). This test will partly verify the requirements in [2].

8.6.1.1.2 Minimum requirement

8.6.1.1.2.1 3.84 Mcps TDD option

FFS

8.6.1.1.2.2 1.28 Mcps TDD option

The UE shall be able to identify a new inrra frequency TDD cell belonging to the monitored set, meeting the following timings.

The UE shall send one Event 1G triggered measurement report for cell 2, with a measurement reporting delay less than 200 ms from the beginning of time period T2 as defined in the test method below.

The UE shall send one Event 1G triggered measurement report for Cell 3 with a measurement reporting delay less than 800ms from the beginning of time period T3 as defined in the test method below.

8.6.1.1.3 Test Purpose

8.6.1.1.3.1 3.84 Mcps TDD option

FFS

8.6.1.1.3.2 1.28 Mcps TDD option

To verify the UE meets the minimum requirements.

8.6.1.1.4 Method of test

8.6.1.1.4.1 3.84 Mcps TDD option

FFS

8.6.1.1.4.2 1.28 Mcps TDD option

Test environment : normal; see clauses G.2.1 and G.2.2

Frequencies to be tested : mid range ;see clauses G.2.4

The test parameters are given in Table 8.6.1.1.4A and 8.6.1.1.4B below. The test consists of three successive time periods, with time durations of T1, T2 and T3 respectively. Three cells shall be present in the test, cell 1 being the serving cell and cell 2 and cell 3 being neighbour cells on the used frequency. All cells shall be synchronised, i.e. share the same frame and timeslot timing.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP shall be reported together with Event 1G reporting. The Measurement control message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T1 is at least equal to the RRC procedure delay as defined in [9]. The cell specific test parameters are given in Table 8.6.1.1B below.

The TTI of the uplink DCCH shall be 20ms.

Table 8.6.1.1.4A: General test parameters for Event 1G triggered reporting in AWGN propagation condition 1.28Mcps option

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0
Power Control		On	
Target quality value on DTCH	BLER	0.01	
Active cell		Cell 1	
Neighbour cell		Cell 2, Cell 3	
O	DB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis	DB	0	
Time to Trigger	Ms	0	
Filter coefficient		0	
Monitored cell list size		12 TDD neighbours on Channel 1	
T1	S	6	
T2	S	6	
T3	S	6	

Table 8.6.1.1.4B: Cell specific parameters for Event 1G triggered correct reporting in AWGN propagation condition 1.28Mcps option

Parameter	Unit	Cell 1						Cell 2						Cell 3					
DL timeslot number		0			DwPTS			0			DwPTS			0			DwPTS		
		T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1						Channel 1						Channel 1					
PCCPCH_Ec/Ior	dB	-3						-3						-3					
DwPCH_Ec/Ior	dB				0						0						0		
OCNS_Ec/Ior	dB	-3						-3						-3					
$\hat{I}_{or}/I_{oc}$	dB	6	4		6	4		4	6	-Inf	4	6	-Inf	-Inf	6		-Inf	6	
PCCPCH RSCP	dBm	-67	-69					-69	-67	-Inf				-Inf	-67				
I_{oc}	dBm / 1,28 MHz	-70																	
Propagation Condition		AWGN																	

NOTE: The DPCH of all cells are located in a timeslot other than 0.

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 6 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 240 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

7) After 6 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.

8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G for cell 3. The measurement reporting delay from the beginning of T3 shall be less than 840 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

9) After 6 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

10) Repeat steps 1-9 [TBD] times.

Specific Message Contents

All messages indicated above shall use the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
-CHOICE *TDD option*	1.28 Mcps
-Timeslot	0
-Cell parameters ID	0
-SCTD indicator	FALSE
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity

Information Element/Group name	Value/Remark
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 2

MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of Cell 3
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1G
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD

-Primary CCPCH info (10.3.6.57) -CHOICE mode -Cell parameters ID	 TDD Set to Cell parameters ID of Cell 3

8.6.1.1.5 Test requirements

8.6.1.1.5.1 3.84Mcps TDD option

FSS

8.6.1.1.5.2 1.28Mcps TDD option

The UE shall not send any incorrect event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of events correctly reported within the minimum required time during repeated tests shall be at least 90%.

3GPP TSG -T1RF Meeting 28
San Antonio, TX, USA 10th to 14th February 2003

Tdoc ⌘ T1-030182

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **163** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Addition of Event 1H and 1I (Timeslot ISCP change) triggered reporting LCRTDD test cases
Source:	⌘	T1RF
Work item code:	⌘	LCRTDD
Date:	⌘	11/02/2003
Category:	⌘	**F**
Release:	⌘	Rel 4

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

Use one of the following releases:

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

Reason for change:	⌘	Updates to reflect latest version core specification
Summary of change:	⌘	Addition of LCR test case for event 1H and 1I reporting
Consequences if not approved:	⌘	Incomplete testing, not reflecting latest core specification.

Clauses affected:	⌘	8.6.1.2			
Other specs affected:	⌘	**Y**	**N**		⌘
		☐	☐	Other core specifications	
		☐	☐	Test specifications	
		☐	☐	O&M Specifications	
Other comments:	⌘	Based on core spec 25.123 clauses A8.6.2, added by CR 167 (RP-020019) This document was originally T1R030056 presented by Siemens AG			

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

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

8.6.1.2 Event 1H and 1I triggered reporting in AWGN propagation condition

~~Void.~~

8.6.1.2.1 Definition and Applicability

8.6.1.2.1.1 3.84 Mcps TDD option

FFS

8.6.1,2.1.2 1.28 Mcps TDD option

The purpose of this test is to verify that the UE makes correct reporting of events 1H (timeslot ISCP below threshold) and 1I (timeslot ISCP above threshold). This test will partly verify the requirements in [2]

8.6.1.2.2 Minimum requirement

8.6.1.2.2.1 3.84Mcps TDD option

FFS

8.6.1.2.2.2 1.28Mcps TDD option

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T2 as defined in the test method below.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T3 as defined in the test method below.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T4 as defined in the test method below.

8.6.1.2.3 Test Purpose

8.6.1.2.3.1 3.84 Mcps TDD option

FFS

8.6.1.2.3.2 1.28Mcps TDD Option

To verify that the UE meets the minimum requirements.

8.6.1.2.4 Method of test

8.6.1.2.4.1 3.84 Mcps Option

FFS

8.6.1.2.4.2 1.28Mcps TDD Option

Test environment : normal; see clauses G.2.1 and G.2.2

Frequencies to be tested : mid range ;see clauses G.2.4

The test parameters are given in Table 8.6.1.2.4.2A, Table 8.6.1.2.4.2B and Table 8.6.1.2.4.2C below. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

In the measurement control information it shall be indicated to the UE that event-triggered reporting with event 1H and event 1I shall be used and that Timeslot ISCP and P-CCPCH RSCP shall be reported together with event 1H and 1I. Measurement control information shall be sent to the UE before the beginning of time period T1.

The UL DPCH shall be transmitted in timeslot 2. In addition, timeslots 5 and 6 shall be allocated as DL timeslots.

Table 8.6.1.2.4.2A: General test parameters for correct event 1H and 1I reporting in AWGN propagation condition 1.28Mcps option

Parameter		Unit	Value	Comment
DCH parameters active cell			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A.
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 1	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Timeslot list cell 1			5, 6	Timeslot numbers in IE “Cell info” for Cell 1
Timeslot list cell 2			6	Timeslot numbers in IE “Cell info” for Cell 2
Threshold used frequency		dBm	-68	Applicable for event 1H, cell 1 timeslots 5, 6 and cell 2 timeslot 6
Threshold used frequency		dBm	-66	Applicable for event 1I, cell 1 timeslots 5, 6 and cell 2 timeslot 6
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	Cell 2 shall belong to the monitored set
T1		s	5	
T2		s	5	
T3		s	5	
T4		s	5	

Table 8.6.1.2.4.2B: Cell 1 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition 1.28Mcps Option

Parameter	Unit	Cell 1											
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
UTRA RF Channel Number		Channel 1											
DL timeslot number		0				5				6			
PCCPCH_Ec/Ior	dB	-3											
DPCH_Ec/Ior	dB					Note 1							
OCNS_Ec/Ior	dB	-3				Note 2				0			
$\hat{I}_{or}/I_{oc}$	dB	4				3				0	6		0
PCCPCH RSCP	dBm	-69				n.a.				n.a.			
I_{oc}	dBm / 1.28 MHz	-70											
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior													

Table 8.6.1.2.4.2C: Cell 2 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition 1.28Mcps option

Parameter	Unit	Cell 2							
		T1	T2	T3	T4	T1	T2	T3	T4
UTRA RF Channel Number		Channel 1							
DL timeslot number		0				6			
PCCPCH_Ec/Ior	dB	-3							
DPCH_Ec/Ior	dB								
OCNS_Ec/Ior	dB	-3				0			
$\hat{I}_{or}/I_{oc}$	dB	4				6		0	
PCCPCH RSCP	dBm	-69				n.a.			
I_{oc}	dBm / 1.28 MHz	-70							

Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 5 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T2 shall be less than 480 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

7) After 5 seconds from the beginning of T2, the SS shall switch the power settings from T2 to T3.

8) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 2. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

9) After 5 seconds from the beginning of T3, the SS shall switch the power settings from T3 to T4.

10) UE shall transmit a MEASUREMENT REPORT message triggered by event 1H for cell 1 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

11) After 5 seconds from the beginning of T4, the SS shall switch the power settings from T4 to T5.

12) UE shall transmit a MEASUREMENT REPORT message triggered by event 1I for cell 2 in timeslot 4. The measurement reporting delay from the beginning of T3 shall be less than 480 ms. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

13) After 5 seconds from the beginning of T5, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

14) Repeat steps 1-13 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Timeslot ISCP
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	FALSE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	1
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	2
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	-68
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1H
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present

Information Element/Group name	Value/Remark
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	-73
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
-Intra-frequency event identity	Event 1I
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	-67
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity
-Reporting interval	0 ms (Note 1)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: Reporting interval = 0 ms means no periodical reporting	

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1I
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

MEASUREMENT REPORT message (step 8)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1

Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1H
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

MEASUREMENT REPORT message (step 10)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	4
-Timeslot ISCP	Checked that this IE is present for 4 timeslots
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1H
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 1

MEASUREMENT REPORT message (step 12)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1

Measured Results (10.3.7.44)	
-CHOICE Measurement	Intra-frequency Measured results list
-Intra-frequency measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	1
-Timeslot ISCP	Checked that this IE is present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Intra-frequency measurement event results
-Intra-frequency event identity	1I
-Cell measurement event results (10.3.7.4)	
-CHOICE mode	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-Cell parameters ID	Set to Cell parameters ID of cell 2

8.6.1.2.5 Test Requirements

8.6.1.2.5.1 3.84Mcps Option

FFS

8.6.1.2.5.2 1.28Mcps TDD Option

The UE shall not send event 1H or 1I triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

8.6.1.3 Correct reporting of neighbours in fading propagation condition

8.6.1.3.1 3.84 Mcps TDD option

FFS

8.6.1.3.2 1.28 Mcps TDD option

FFS

3GPP TSG -T1RF Meeting 28
San Antonio, TX, USA 10th to 14th February 2003

Tdoc ⌘ T1-030183

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CHANGE REQUEST

⌘ **34.122** **CR** **164** ⌘ **rev** **-** ⌘ Current version: **4.6.0** ⌘

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

Title:	⌘	Addition of Inter-frequency measurement LCRTDD test case
Source:	⌘	T1 RF
Work item code:	⌘	LCRTDD
Date:	⌘	11/02/03
Category:	⌘	**F**
Release:	⌘	Rel 4

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

Use one of the following releases:

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

Reason for change:	⌘	Updates to reflect latest version core specification
Summary of change:	⌘	Addition of Inter-frequency measurement
Consequences if not approved:	⌘	Incomplete testing, not reflecting latest core specification.

Clauses affected:	⌘	8.6.2 (TDD neighbour) 8.6.3 (FDD neighbour) 8.4 (GSM Neighbour)

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

Other comments:	⌘	Based on core spec 25.123 clauses A8.6.2, added by CR 44 (RP-010097) This document was originally T1R030057 from Siemens AG

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

8.6.2 TDD inter frequency measurements

8.6.2.1 Correct reporting of neighbours in AWGN propagation condition

~~Void~~

8.6.2.1.1 Definition and Applicability

8.6.2.1.1.1 3.84Mcps TDD option

FFS

8.6.2.1.1.2 1.28Mcps TDD option

The purpose of this test is to verify that the UE makes correct reporting of an event within the required times when doing inter frequency measurements on a neighbouring TDD cell. The test will partly verify the requirements in section 8 of [2]

8.6.2.1.2 Minimum requirement

8.6.2.1.2.1 3.84Mcps TDD option

FFS

8.6.2.1.2.2 1.28Mcps TDD option

The UE shall send the Event 2C triggered measurement report, with a measurement reporting delay less than [5] s from the beginning of time period T2.

8.6.2.1.3 Test Purpose

8.6.2.1.3.1 3.84Mcps TDD option

FFS

8.6.2.1.3.2 1.28Mcps TDD option

To verify that the UE meets the minimum time requirements for identifying neighbouring TDD cells

8.6.2.1.4 Method of test

8.6.2.1.4.1 3.84Mcps TDD option

FFS

8.6.2.1.4.2 1.28Mcps TDD option

Test environment : normal; see clauses G.2.1 and G.2.2

Frequencies to be tested : mid range ;see clauses G.2.4

Cell 1 is the active cell, Cell 2 is a neighbour cell on the used frequency. The power level on Cell 1 is kept constant and the power level of Cell 2 is changed using "change of best cell event". General test parameters are given in the table 8.6.2.1.3 below and they are signalled from test device. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. P-CCPCH RSCP of the best cell has to be reported together

with Event 2C reporting. New measurement control information, which defines neighbour cells etc., is always sent before the event starts. The cell specific test parameters are shown in Table 8.6.2.1.4.

Table 8.6.2.1.3: General test parameters for correct reporting of TDD inter frequency neighbours in AWGN propagation condition 1.28Mcps option

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0
Power Control		On	
Active cell		Cell 1	
Threshold non used frequency	dB	-71	Absolute P-CCPCH RSCP threshold for event 2C
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1 16 on channel 2	Measurement control information is sent before T1 starts.
T1	s	10	
T2	s	10	

Table 8.6.2.1.4 Cell Specific Parameters for Correct Reporting of Neighbours in AWGN Propagation Condition 1.28Mcps option

Parameter	Unit	Cell 1				Cell 2			
Timeslot Number		0		DwPTS		0		DwPTS	
		T1	T2	T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2			
PCCPCH_Ec/Ior	dB	-3				-3			
DwPCH_Ec/Ior	dB			0				0	
$\hat{I}_{or}/I_{oc}$	dB	3	3			-Infinity	6		
I_{oc}	dBm/1.28 MHz	-70							
PCCPCH_RSCP	dBm	-70	-70			-Infinity	-67		
Propagation Condition		AWGN							

NOTE: The DPCH of all cells are located in a timeslot other than 0.

8.6.2.1.4.2.2 Test Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 10 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2c for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5080 ms. If the UE fails to report the event within the

required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

7) After 10 seconds from the beginning of T3, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

8) Repeat steps 1-7 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE *inter-frequency cell removal*	No inter-frequency cells removed
-New inter-frequency cells	1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2
-Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE mode	TDD
-CHOICE TDD option	1.28 Mcps TDD
-Timeslot	0
-cell parameters ID	Set to cell parameters ID of cell 2
-SCTD indicator	FALSE
-Primary CCPCH Tx power	Set to Primary CCPCH Tx power of cell 2 as described in Table 8.6.2.1.2
-Timesllot list	Not Present
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE *reporting critera*	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	TDD
-Timeslot ISCP reporting indicator	FALSE
-Proposed TGSN Reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting Cell Status (10.3..61)	

Information Element/Group name	Value/Remark
-CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used frequency
-Maximum number of reported cells	3
-Parameters required for each non-used frequenc	
- Threshold non-used frequency	-71
- W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	TDD
-Cell parameters ID	Set to cell parameters ID of Cell 2
-Proposed TGSN	Not Present
-Primary CCPCH RSCP	Checked that this IE is present
-Pathloss	Not Present
-Timeslot list	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE *mode*	TDD
-UARFCN(Nt)	Same frequency as channel 2
-CHOICE mode	TDD
-Primary CCPCH Info	
-CHOICE mode	TDD
-CHOICE TDD Option	3.84 Mcps TDD
-CHOICE Sync Case	Not Present
-Cell Parameters ID	Set to cell parameters ID of Cell 2
-SCTD Indicator	FALSE

8.6.2.1.5 Test Requirement

8.6.2.1.5.1 3.84 Mcps TDD Option

FFS

8.6.2.1.5.2 1.28 Mcps TDD Option

The UE shall send an EVENT 2C message of cell 2 within 5080mS from the beginning of the time T2

The UE shall not send any event triggered measurement reports, as long as the reporting criteria are not fulfilled.

The rate of events correctly reported during repeated tests shall be at least 90%..

8.6.3 FDD measurements

8.6.3.1 Correct reporting of FDD neighbours in AWGN propagation condition

~~Void.~~

8.6.3.1.1 Definition and Applicability

8.6.3.1.1 3.84Mcps TDD option

FFS

8.6.3.1.1 1,28Mcps TDD option

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements on a neighbouring FDD cell. The test will partly verify the requirements in section 8 of [2]

8.6.3.1.2 Minimum requirement

8.6.3.1.2.1 3.84 Mcps TDD option

FFS

8.6.3.1.2.2 1.28 Mcps TDD option

The UE shall send the Event 2C triggered measurement report, with a measurement reporting delay less than 5.08 s from the beginning of time period T2.

8.6.3.1.3 Test Purpose

8.6.3.1.3.1 3.84 Mcps TDD option

FFS

8.6.3.1.3.2 1.28 Mcps TDD option

To verify that the UE meets the minimum time requirements for identifying neighbouring FDD cells

8.6.3.1.4 Method of Test

8.6.3.1.4.1 3.84Mcps TDD option

FFS

8.6.3.1.4.2 1.28Mcps TDD option

Cell 1 is current active TDD cell, Cell 2 is a FDD cell. The power level of CPICH_RSCP of cell 2 and the P-CCPCH RSCP of cell 1 is changed. General test parameters are given in the table 8.6.3.1.3 below and they are signalled from test device. New measurement control information, which defines neighbour cells etc., is always sent before the handover starts. The test parameters are given in Table 8.6.3.1.4 below.

Table 8.6.3.1.3: General test parameters for Correct reporting of FDD neighbours in AWGN propagation condition 1.28Mcps option

Parameter	Unit	Value	Comment
DPCH parameters active cell		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 section A. The DPCH is located in an other timeslot than 0.
Power Control		On	
Active cell		Cell 1	
Threshold non used frequency	dB	-86	Absolute CPICH RSCP threshold for event 2C
Hysteresis	dB	0	
W non-used frequency		1	Applicable for event 2C
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24 on channel 1 16 on channel 2	Measurement control information is sent before T1 starts.
T1	s	10	
T2	s	10	

Table 8.6.3.1.4 Cell Specific parameters for Correct reporting of FDD neighbours in AWGN propagation condition: 1.28Mcps option

Parameter	Unit	Cell 1				Cell 2	
Timeslot Number		0		DwPTS		n.a	n.a.
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1				Channel 2	
CPICH_Ec/Ior	dB	n.a.		n.a.		-10	-10
PCCPCH_Ec/Ior	dB	-3	-3			-12	-12
SCH_Ec/Ior	dB					-12	-12
PICH_Ec/Ior	dB					-15	-15
DwPCH_Ec/Ior	dB			0	0	n.a.	n.a.
OCNS	dB	[ ]	[ ]			-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	3	3	3	3	-Infinity	-2
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_RSCP		n.a.				-Infinity	-82
PCCPCH_RSCP	DB	-70	-70			n.a.	n.a.
Propagation Condition		AWGN				AWGN	

Note: The DPCH of cell 1 is located in a timeslot other than 0.

8.6.3.1.4.2.1 Test Procedure

8.6.3.1.4.1.2 Procedure

1) The RF parameters are set up according to T1.

2) The UE is switched on.

3) A call is set up according to the generic set-up procedure specified in TS 34.108 [3] subclause 7.4.2 to place the UE in CELL_DCH.

4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 15 seconds from the beginning of T1, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C for cell 2. The measurement reporting delay from the beginning of T2 shall be less than 5040 ms. If the UE fails to report the event within the required delay, then a failure is recorded. If the reporting delay for this event is within the required limit, the number of succesfull tests is increased by one.

7) After 10 seconds from the beginning of T2, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

8) Repeat steps 1-7 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] and in Annex A of 34.123-1 [21], with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	
-CHOICE *inter-frequency cell removal*	No inter-frequency cells removed
-New inter-frequency cells	1
-Inter-frequency cell id	1
-Frequency info (10.3.6.36)	
-CHOICE *mode*	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-Cell info (10.3.7.2)	
-Cell individual offset	Not Present
-Reference time difference to cell	Not Present
-Read SFN indicator	False
-CHOICE *mode*	FDD
-Primary CPICH info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-Primary CPICH Tx Power	Set to Primary CPICH Tx Power of Cell2 described in Table 8.6.3.1.2
-Tx Diversity Indicator	FALSE
-Cell selection and re-selection info	Not Present
-Cell for measurement	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE *reporting critera*	Inter-frequency reporting criteria
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	FDD
-Measurement quantity for frequency quality estimate	CPICH_Ec/No
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA carrier RSSI	
-Frequency quality estimate	
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	FALSE
-Cell identity reporting indicator	FALSE
-CHOICE mode	FDD
-CPICH Ec/N0 reporting indicator	TRUE
-CPICH RSCP reporting indicator	FALSE
-Pathloss reporting indicator	FALSE
-Reporting cell status (10.3.7.61)	Not Present
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 2C
-Threshold used frequency	Not Present
-W Used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting Cell Status (10.3..61)	
-CHOICE reported cell	Report cells within active and/or monitored set on used frequency or within virtual active and/or monitored set on non-used frequency

Information Element/Group name	Value/Remark
-Maximum number of reported cells	3
-Parameters required for each non-used frequenc	
- Threshold non-used frequency	-18
- W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

MEASUREMENT REPORT message (step 6)

Information Element	Value/remark
Message Type (10.2.17)	
Integrity check info	Not Present
Measurement identity	1
Measured Results (10.3.7.44)	
-CHOICE Measurement	Inter-frequency Measured results list
-Inter-frequency measured results	1
-Frequency info	
-CHOICE *mode*	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-UTRA carrier RSSI	Not Present
-Inter-frequency cell measured results	1
-Cell measured results (10.3.7.3)	
-Cell identity	Not Present
-SFN-SFN observed time difference	Not Present
-Cell synchronisation info	Not Present
-CHOICE mode	FDD
-Primary CPICH Info	
-Primary scrambling code	Set to Primary scrambling code of Cell2
-CPICH Ec/No	Checked that this IE is present
-CPICH RSCP	Not Present
-Pathloss	Not Present
Measured results on RACH	Not Present
Additional measured results	Not Present
Event results (10.3.7.7)	
-CHOICE event result	Inter-frequency measurement event results
-Inter-frequency event identity	2C
-Inter-frequency cells	1
-Frequency Info	
-CHOICE *mode*	FDD
-UARFCN uplink (Nu)	Not Present
-UARFCN downlink (Nd)	Same frequency as channel 2
-CHOICE mode	FDD
-Primary CPICH info	
-Primary Scrambling Code	Set to Primary scrambling code of Cell2

8.6.3.1.5 Test Requirements

8.6.3.1.5.1 3.84 Mcps TDD Option

FFS

8.6.3.1.5.2 1.28 Mcps TDD Option

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 5080ms from the beginning of time period T2.

The UE shall not send any measurement reports, as long as the reporting criteria are not fulfilled.

The rate of correct events observed during repeated tests shall be at least 90%.

8.6.4 GSM measurements

8.6.4.1 Correct reporting of GSM neighbours in AWGN propagation condition

8.6.4.1.1 3.84 Mcps TDD option

FFS

8.6.4.1.2 1.28 Mcps TDD option

FFS

3GPP TSG -T1 Meeting 28
San Antonio, TX, USA 10th to 14th February 2003

Tdoc* ⌘*T1-030184

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **165** ⌘**rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Correction to measurement LCRTDD Handover test case
Source:	⌘	T1-RF
Work item code:	⌘	LCRTDD
Date:	⌘	11/02/2003
Category:	⌘	**F**
Release:	⌘	Rel 4

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

Use one of the following releases:

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

Reason for change:	⌘	Updated to rectify error in table to satisfy latest version core specification
Summary of change:	⌘	Correction of Inter-frequency measurement
Consequences if not approved:	⌘	Incorrect Handover test timings, not reflecting latest core specification.
Clauses affected:	⌘	Table 8.3.1A1.1 (Interfrequency) Table 8.3.1A.2.1 (Intra frequency)

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

Other comments:	⌘	Corrected tables based on core spec 25.123 clauses A8.3.1 and CR279 This document was originally T1R030058 from Siemens AG

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

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

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

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

8.3.1A TDD/TDD Handover for 1,28 Mcps Option

8.3.1A.1 Handover to intra-frequency cell

8.3.1A.1.1 Definition and applicability

Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCH, excluding the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD UE 1.28 Mcps option.

8.3.1A.1.2 Minimum requirement

The hard handover delay shall be less than 40 ms in the single carrier case when the cell is known by the UE and the SFN of the target cell does not need to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% with a confidence level of [FFS]%.

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

8.3.1A.1.3 Test purpose

The purpose of this test is to verify the requirement for the intra-frequency handover delay in CELL_DCH state in the single carrier case.

8.3.1A.1.4 Method of test

8.3.1A.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1A.1.1 and 8.3.1A.1.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1G shall be used, and that P-CCPCH RSCP and SFN-CFN observed timed difference shall be reported together with Event 1G. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [9].

Table 8.3.1A.1.1: General test parameters for Handover to intra-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	
~~HCS~~			~~Not used~~	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1	
T1		s	~~10~~5	
T2		s	~~10~~5	
T3		s	~~10~~5	

Table 8.3.1A.1.2: Cell specific test parameters for Handover to intra-frequency cell 1.28Mcps option

~~Parameter~~	~~Unit~~	~~Cell 1~~						~~Cell 2~~					
~~Timeslot Number~~		~~0~~			~~5~~			~~0~~			~~5~~		
		~~T1~~	~~T2~~	~~T3~~	~~T1~~	~~T2~~	~~T3~~	~~T1~~	~~T2~~	~~T3~~	~~T1~~	~~T2~~	~~T3~~
~~UTRA RF Channel Number~~		~~Channel 1~~						~~Channel 1~~					
~~PCCPCH_Ec/Ior~~	~~dB~~	~~-3~~			~~n.a.~~			~~-3~~			~~n.a.~~		
~~DPCH_Ec/Ior~~	~~dB~~	~~n.a.~~			~~Note1~~		~~n.a.~~	~~n.a.~~			~~n.a.~~		~~Note1~~
~~OCNS_Ec/Ior~~	~~dB~~	~~Note2~~			~~Note2~~			~~Note2~~			~~Note2~~		
$\hat{I}_{or}/I_{oc}$	~~dB~~	~~3~~			~~3~~			~~-Inf.~~	~~5~~		~~-Inf.~~		~~5~~
I_{oc}	~~dBm/ 1.28 MHz~~	~~-70~~											
~~PCCPCH_RSCP~~	~~dBm~~	~~-70~~			~~n.a.~~			~~-Inf.~~	~~-68~~		~~n.a.~~		
~~Propagation Condition~~		~~AWGN~~											
~~Note 1: The DPCH level is controlled by the power control loop~~ ~~Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.~~													

Parameter	**Unit**	**Cell 1**								
Timeslot Number		**0**			**DwPTS**			**5**		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1								
PCCPCH_Ec/Ior	dB	-3						n.a.		
DwPCH_Ec/Ior					0					
DPCH_Ec/Ior	dB	n.a.			n.a.			Note1		n.a.
OCNS_Ec/Ior	dB	-3						Note2		
$\hat{I}_{or}/I_{oc}$	dB	3			3			3		
I_{oc}	dBm/ 1.28 MHz	-70								
PCCPCH_RSCP	dBm	-70			n.a.			n.a.		
Propagation Condition		AWGN								
Parameter	**Unit**	**Cell 2**								
Timeslot Number		**0**			**DwPTS**			**5**		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1								
PCCPCH_Ec/Ior	dB	-3						n.a.		
DwPCH_Ec/Ior					0					
DPCH_Ec/Ior	dB	n.a.			n.a.			n.a.		Note1
OCNS_Ec/Ior	dB	-3						Note2		
$\hat{I}_{or}/I_{oc}$	dB	-Inf.	5		-Inf.	5		-Inf.		5
I_{oc}	dBm/ 1.28 MHz	-70								
PCCPCH_RSCP	dBm	-Inf.	-68		n.a.			n.a.		
Propagation Condition		AWGN								
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.										

8.3.1A.1.4.2 Procedure

1) The RF parameters are set up according to T1.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
4) SS shall transmit a MEASUREMENT CONTROL message.

5) After 5~~10~~ seconds, the SS shall switch the power settings from T1 to T2.

6) UE shall transmit a MEASUREMENT REPORT message triggered by event 1G.

7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.

8) After 5~~10~~ seconds, the SS shall switch the power settings from T2 to T3

9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.

10) After 5~~10~~ seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.

11) Repeat step 1-10 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Intra-frequency measurement
-Intra-frequency measurement (10.3.7.36)	
-Intra-frequency measurement objects list (10.3.7.33)	Not Present
-Intra-frequency measurement quantity (10.3.7.38)	
-Filter coefficient (10.3.7.9)	0
-CHOICE *mode*	TDD
-Measurement quantity list	1
-Measurement quantity	Primary CCPCH
-Intra-frequency reporting quantity (10.3.7.41)	
-Reporting quantities for active set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for monitored set cells (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	No report
-Cell synchronisation information reporting indicator	TRUE (Note 1)
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting quantities for detected set cells (10.3.7.5)	Not Present
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report all active set cells + cells within monitored set on used frequency
-Maximum number of reported cells	2
-Measurement validity (10.3.7.51)	Not Present
-CHOICE *report criteria*	Intra-frequency measurement reporting criteria
-Intra-frequency measurement reporting criteria (10.3.7.39)	
-Parameters required for each event	1
-Intra-frequency event identity	Event 1G
-Triggering condition 2	Not Present
-Reporting Range Constant	Not Present
-Cells forbidden to affect Reporting Range	Not Present
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
-CHOICE *TDD option*	1.28 Mcps
TSTD indicator	TRUE
-Cell parameters ID	0
-SCTD indicator	FALSE
-W	Not Present
-Hysteresis	0 dB
-Threshold used frequency	Not Present
-Reporting deactivation threshold	Not Present
-Replacement activation threshold	Not Present
-Time to trigger	0 ms
-Amount of reporting	Infinity

Information Element/Group name	Value/Remark
-Reporting interval	0 ms (Note 2)
-Reporting cell status	Not Present
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present
Note 1: The SFN-CFN observed time difference is calculated from the OFF and Tm parameters contained in the IE "Cell synchronisation information ", TS 25.331, clause 10.3.7.6. According to TS 25.331, 8.6.7.7, this IE is included in MEASUREMENT REPORT if IE "Cell synchronisation information reporting indicator" in IE "Cell reporting quantities" TS 25.331, clause 10.3.7.5 is set to TRUE in MEASUREMENT CONTROL.	
Note 2: Reporting interval = 0 ms means no periodical reporting	

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE *mode*	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	30 dBm
-CHOICE *channel requirement*	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE *mode*	TDD
-CHOICE *TDD option*	1.28 Mcps TDD
-$PRX_{PDPCHdes}$	Not Present
-CHOICE *UL OL PC info*	Individually signalled
-CHOICE *TDD option*	1.28 Mcps TDD
-Indivdual Timeslot interference info	1
-Individual timeslot interference (10.3.6.38)	
-Timeslot Number (10.3.6.84)	
-CHOICE *TDD option*	1.28 Mcps TDD
-TPC step size	1
-UL Timeslot Interference	-90 dBm
-CHOICE *mode*	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE *Timing Advance*	Disabled
-UL CCTrCH list	1
-UL Target SIR	TBD dB
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE *TDD option*	1.28 Mcps
-Timeslot number	2
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-Choice *TDD option*	1.28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE *TDD option*	1.28 Mcps
-Modulation	QPSK
- SS-TPC Symbols	
-Additional TPC-SS Symbols	

Information Element	Value/Remark
-First timeslot code list	1
-Channelisation code	8/1
-Choice more timeslots	No more timeslots
Downlink radio resources	
-CHOICE *mode*	TDD
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE *mode*	TDD
-TPC Step size	1 dB
-CHOICE *mode*	TDD
-CHOICE *mode*	TDD
-CHOICE *TDD option*	1.28 Mcps
-TX Diversity mode (10.3.6.86)	None
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
-CHOICE *mode*	TDD
-CHOICE *TDD option*	1.28 Mcps
TSTD indicator	TRUE
-Cell parameters ID	0
-SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE *mode*	TDD
-DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Downlink DPCH timeslots and codes (10.3.6.32)	
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE *TDD option*	1.28 Mcps
-Timeslot number	5
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE *TDD option*	1.28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE *TDD option*	1.28 Mcps
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot channelisation codes (10.3.6.17)	
-CHOICE *codes representation*	Consecutive codes
-First channelisation code	16/1
-Last channelisation code	16/2
-CHOICE *more timeslots*	No more timeslots
-SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Intra frequency test cases

This message is common for all intra frequency test cases in clause 8.7 and is described in Annex I.

8.3.1A.1.5 Test requirements

For the test to pass, the total number of successful tests shall be more than [FFS] of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

8.3.1A.2 Handover to inter-frequency cell

8.3.1A.2.1 Definition and applicability

Handover delay of the UE is defined as the time from the end of the last TTI containing an RRC message implying hard handover to the transmission of the new uplink DPCH, excluding the RRC procedure delay as defined in [9].

The requirements and this test apply to the UTRA TDD UE 1.28 Mcps option.

8.3.1A.2.2 Minimum requirement

The hard handover delay shall be less than 40 ms in the dual carrier case when the cell is known by the UE and the SFN of the target cell needs to be decoded. The rate of correct handovers observed during repeated tests shall be at least 90% ~~,with a confidence level of [FFS]%.~~

The normative reference for this requirement is TS 25.123 [2] clauses 5.1.2 and A.5.1.2.

8.3.1A.2.3 Test purpose

The purpose of this test is to verify the requirement for the inter-frequency handover delay in CELL_DCH state in the dual carrier case.

8.3.1A.2.4 Method of test

8.3.1A.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

The test parameters are given in table 8.3.1A.2.1 and 8.3.1A.2.2. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The PCCPCH RSCP and SFN-CFN observed time difference of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at beginning of T3 with one active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [9].

Table 8.3.1A.2.1: General test parameters for Handover to inter-frequency cell

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.102 clause A.2.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Initial conditions	Active cell		Cell 1	
	Neighbour cell		Cell 2	
Final condition	Active cell		Cell 2	
Threshold non-used frequency		dBm	-80	Absolute threshold RSCP for Event 2C
~~HCS~~			~~Not used~~	
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	~~Hysteresis parameter for event 2C~~
Time to Trigger		ms	0	
Filter coefficient			0	
Monitored cell list size			6 TDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
~~T_{SI}~~		~~s~~	~~1,28~~	~~The value shall be used for all cells in the test.~~
T1		s	~~10~~5	
T2		s	10	
T3		s	~~10~~5	

Table 8.3.1A.2.2: Cell Specific parameters for Handover to inter-frequency cell

~~Parameter~~	~~Unit~~	~~Cell 1~~						~~Cell 2~~					
~~Timeslot Number~~		~~0~~			~~5~~			~~0~~			~~5~~		
		~~T1~~	~~T2~~	~~T3~~	~~T1~~	~~T2~~	~~T3~~	~~T1~~	~~T2~~	~~T3~~	~~T1~~	~~T2~~	~~T3~~
~~UTRA RF Channel Number~~		~~Channel 1~~						~~Channel 2~~					
~~PCCPCH_Ec/Ior~~	~~dB~~	~~-3~~			~~n.a.~~			~~-3~~			~~n.a.~~		
~~DPCH_Ec/Ior~~	~~dB~~	~~n.a.~~			~~Note1~~		~~n.a.~~	~~n.a.~~			~~n.a~~		~~Note1~~
~~OCNS_Ec/Ior~~	~~dB~~	~~-3~~			~~Note2~~			~~-3~~			~~Note2~~		
~~$\hat{I}_{or}/I_{oc}$~~	~~dB~~	~~-3~~			~~3~~			~~-Inf~~	~~9~~		~~-Inf~~		~~9~~
~~I_{oc}~~	~~dBm/1.28 MHz~~	~~-70~~											
~~PCCPCH_RSCP~~	~~dBm~~	~~-70~~			~~n.a.~~			~~-Inf~~	~~-64~~		~~n.a.~~		
~~Propagation Condition~~		~~AWGN~~											
~~Note 1: The DPCH level is controlled by the power control loop~~ ~~Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.~~													

Parameter	Unit	Cell 1								
Timeslot Number		0			DwPTS			5		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 1								
PCCPCH_Ec/Ior	dB	-3						n.a.		
DwPCH_Ec/Ior					0					
DPCH_Ec/Ior	dB	n.a.			n.a.			Note1		n.a.
OCNS_Ec/Ior	dB	-3						Note2		
$\hat{I}_{or}/I_{oc}$	dB	3			3			3		
I_{oc}	dBm/ 1.28 MHz	-70								
PCCPCH_RSCP	dBm	-70			n.a.			n.a.		
Propagation Condition		AWGN								
Parameter	Unit	Cell 2								
Timeslot Number		0			DwPTS			5		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 2								
PCCPCH_Ec/Ior	dB	-3						n.a.		
DwPCH_Ec/Ior					0					
DPCH_Ec/Ior	dB	n.a.			n.a.			n.a.		Note1
OCNS_Ec/Ior	dB	-3						Note2		
$\hat{I}_{or}/I_{oc}$	dB	-Inf.	9		-Inf.	9		-Inf.	9	
I_{oc}	dBm/ 1.28 MHz	-70								
PCCPCH_RSCP	dBm	-Inf.	-64		n.a.			n.a.		
Propagation Condition		AWGN								

Note 1: The DPCH level is controlled by the power control loop
Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.

8.3.1A.2.4.2 Procedure

1) The RF parameters are set up according to T1.
2) The UE is switched on.
3) A call is set up according to the test procedure specified in TS 34.108 [3] subclause 7.3.4.
4) SS shall transmit a MEASUREMENT CONTROL message.
5) After ~~10~~ 5 seconds, the SS shall switch the power settings from T1 to T2.
6) UE shall transmit a MEASUREMENT REPORT message triggered by event 2C.
7) SS shall transmit a PHYSICAL CHANNEL RECONFIGURATION message with activation time at T3.
8) After 10 seconds, the SS shall switch the power settings from T2 to T3
9) UE shall transmit a PHYSICAL CHANNEL RECONFIGURATION COMPLETE message on the UL DCCH of cell 2. If the UE transmits the UL DPCH to cell 2 less than 40 ms from the beginning of time period T3 then the number of successful tests is increased by one.
10) After 5~~10~~ seconds, the UE is switched off. Any timing information of cell 2 is deleted in the UE.
11) Repeat step 1-10 [TBD] times.

Specific Message Contents

All messages indicated above shall use the same content as described in the default message content in clause 9 of 34.108 [3] with the following exceptions:

MEASUREMENT CONTROL message, event 2C (step 4):

Information Element/Group name	Value/Remark
Message Type (10.2.17)	
UE information elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
Measurement Information elements	
-Measurement Identity	1
-Measurement Command (10.3.7.46)	Modify
-Measurement Reporting Mode (10.3.7.49)	
-Measurement Report Transfer Mode	AM RLC
-Periodical Reporting / Event Trigger Reporting Mode	Event trigger
-Additional measurements list (10.3.7.1)	Not Present
-CHOICE *Measurement type*	Inter-frequency measurement
-Inter-frequency measurement (10.3.7.16)	
-Inter-frequency measurement objects list (10.3.7.13)	Not Present
-Inter-frequency measurement quantity (10.3.7.18)	
-CHOICE *reporting criteria*	Inter-frequency reporting criteria
-Inter-frequency reporting criteria	
-Filter coefficient	0
-CHOICE *mode*	TDD
-Measurement quantity for frequency quality estimate	Primary CCPCH RSCP
-Inter-frequency reporting quantity (10.3.7.21)	
-UTRA Carrier RSSI	FALSE
-Frequency quality estimate	FALSE
-Non frequency related cell reporting quantities (10.3.7.5)	
-SFN-SFN observed time difference reporting indicator	Type 1
-Cell synchronisation information reporting indicator	TRUE
-Cell Identity reporting indicator	TRUE
-CHOICE *mode*	TDD
-Timeslot ISCP reporting indicator	TRUE
-Proposed TGSN reporting required	FALSE
-Primary CCPCH RSCP reporting indicator	TRUE
-Pathloss reporting indicator	TRUE
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report cells within monitored set on non-used frequency
-Maximum number of reported cells per reported non-used frequency	1
-Measurement validity (10.3.7.51)	Not Present
-Inter-frequency set update (10.3.7.22)	Not Present
-CHOICE *report criteria*	Inter-frequency measurement reporting criteria
-Inter-frequency measurement reporting criteria (10.3.7.19)	
-Parameters required for each event	1
-Inter-frequency event identity (10.3.7.14)	Event 2C
-Threshold used frequency	Not Present
-W used frequency	Not Present
-Hysteresis	0 dB
-Time to trigger	0 ms
-Reporting cell status (10.3.7.61)	
-CHOICE *reported cell*	Report cells within monitored set on non-used frequency
-Maximum number of reported cells per reported non-used frequency	1
-Parameters required for each non-used frequency	1
-Threshold non-used frequency	-80 dBm
-W non-used frequency	1
Physical channel information elements	
-DPCH compressed mode status info (10.3.6.34)	Not Present

PHYSICAL CHANNEL RECONFIGURATION message (step 7):

Information Element	Value/Remark
Message Type	
UE Information Elements	
-RRC transaction identifier	0
-Integrity check info	Not Present
-Integrity protection mode info	Not Present
-Ciphering mode info	Not Present
-Activation time	At T3
-New U-RNTI	Not Present
-New C-RNTI	Not Present
-RRC State Indicator	CELL_DCH
-UTRAN DRX cycle length coefficient	Not Present
CN Information Elements	
-CN Information info	Not Present
UTRAN mobility information elements	
-URA identity	Not Present
RB information elements	
-Downlink counter synchronisation info	Not Present
-RB with PDCP information list	Not Present
-RB with PDCP information	Not Present
PhyCH information elements	
-Frequency info (10.3.6.36)	
-CHOICE *mode*	TDD
-UARFCN (Nt)	Same UARFCN as used for cell 2
Uplink radio resources	
-Maximum allowed UL TX power	30 dBm
-CHOICE *channel requirement*	Uplink DPCH info
-Uplink DPCH info (10.3.6.88)	
-Uplink DPCH power control info (10.3.6.91)	
-CHOICE *mode*	TDD
-CHOICE *TDD option*	1.28 Mcps TDD
-$PRX_{PDPCHdes}$	Not Present
-CHOICE *UL OL PC info*	Individually signalled
-CHOICE *TDD option*	1.28 Mcps TDD
-Indivdual Timeslot interference info	1
-Individual timeslot interference (10.3.6.38)	
-Timeslot Number (10.3.6.84)	
-CHOICE *TDD option*	1.28 Mcps TDD
-TPC stepsize	1
- UL Timeslot Interference	-90 dBm
-CHOICE *mode*	TDD
-Uplink timing advance control (10.3.6.96)	
-CHOICE *Timing Advance*	Disabled
-UL CCTrCH list	1
-UL Target SIR	TBD dB
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
-Uplink DPCH timeslots and codes (10.3.6.94)	
-Dynamic SF Usage	False
-First individual timeslot info (10.3.6.37)	
-Timeslot Number (10.3.6.84)	
-CHOICE *TDD option*	1.28 Mcps
-Timeslot number	2
-TFCI existence	True
-Midamble shift and burst type (10.3.6.41)	
-CHOICE *TDD option*	1.28 Mcps
-Midamble Allocation Mode	Default
-Midamble configuration	16
-Midamble shift	Not present
-CHOICE *TDD option*	1.28 Mcps
-Modulation	QPSK
- SS-TPC Symbols	
-Additional TPC-SS Symbols	
-First timeslot code list	1

Information Element	Value/Remark
-Channelisation code	8/1
-CHOICE *more timeslots*	No more timeslots
Downlink radio resources	
-CHOICE *mode*	TDD
-Downlink information common for all radio links (10.3.6.24)	
-Downlink DPCH info common for all RL (10.3.6.18)	
-Timing indicator	Initialise
-CFN-targetSFN frame offset	Not Present
-Downlink DPCH power control information (10.3.6.23)	
-CHOICE *mode*	TDD
-TPC Step size	1 dB
-CHOICE *mode*	TDD
-CHOICE *mode*	TDD
-CHOICE *TDD option*	1.28 Mcps
-TX Diversity mode (10.3.6.86)	None
-Default DPCH Offset Value (10.3.6.16)	0
-Downlink information per radio link list	1
-Downlink information for each radio link (10.3.6.27)	
-CHOICE *mode*	TDD
-Primary CCPCH info (10.3.6.57)	
- CHOICE *mode*	TDD
- CHOICE *TDD option*	1.28 Mcps
TSTD indicator	TRUE
- Cell parameters ID	0
- SCTD indicator	False
-Downlink DPCH info for each RL (10.3.6.21)	
-CHOICE *mode*	TDD
- DL CCTrCH list	1
-TFCS ID	Not Present
-Time Info (10.3.6.83)	
-Activation Time	T3
-Duration	Infinite
-Common timeslot info	Not Present
- Downlink DPCH timeslots and codes (10.3.6.32)	
- First individual timeslot info (10.3.6.37)	
- Timeslot Number (10.3.6.84)	
- CHOICE *TDD option*	1.28 Mcps
- Timeslot number	5
- TFCI existence	True
- Midamble shift and burst type (10.3.6.41)	
- CHOICE *TDD option*	1.28 Mcps
- Midamble Allocation Mode	Default
- Midamble configuration	16
- Midamble shift	Not present
- CHOICE *TDD option*	1.28 Mcps
- First timeslot channelisation codes (10.3.6.17)	
-Modulation	QPSK
-SS-TPC Symbols	
-Additional TPC-SS Symbols	
- CHOICE *codes representation*	Consecutive codes
- First channelisation code	16/1
- Last channelisation code	16/2
- CHOICE *more timeslots*	No more timeslots
- SCCPCH information for FACH (10.3.6.70)	Not Present

MEASUREMENT REPORT message for Inter frequency test cases

This message is common for all inter frequency TDD test cases in clause 8.7 and is described in Annex I.

8.3.1A.2.5 Test requirements

For the test to pass, the total number of successful tests shall be more than [FFS] of the cases.

NOTE: If the above Test Requirement differs from the Minimum Requirement then the Test Tolerance applied for this test is non-zero. The Test Tolerance for this test is defined in clause F.2 and the explanation of how the Minimum Requirement has been relaxed by the Test Tolerance is given in clause F.4.

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Tdoc* ⌘*T1-030185

CR-Form-v7

CHANGE REQUEST

⌘ **34.122** **CR** **166** ⌘**rev** **-** ⌘ Current version: **4.6.0** ⌘

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

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

Title:	⌘	Correction to measurement LCRTDD test case
Source:	⌘	T1-RF
Work item code:	⌘	LCRTDD
Date:	⌘	11/02/03
Category:	⌘	**F**
Release:	⌘	Rel 4

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

Use one of the following releases:

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

Reason for change:	⌘	Updated to rectify error in table to satisfy latest version core specification
Summary of change:	⌘	Correction of LCR AWGN measurement
Consequences if not approved:	⌘	Incorrect BER tables, not reflecting latest core specification.

Clauses affected:	⌘	7.1-7.3.3

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

Other comments:	⌘	The reference for these tables is TS 25.102 [1] clauses 8.1-8.3 CRs 79 & 94 This document was originally T1R030059 from Siemens AG

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

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

7.1 General

The performance requirements for the UE in this clause is specified for the measurement channels specified in annex C and the test environments specified in annex D.

All Block Error ratio (BLER) measurements in clause 7 shall be performed according to the general rules for statistical testing in Annex F.6.

7.1.2 Definition of Additive White Gaussian Noise (AWGN) Interferer

The minimum bandwidth of the AWGN interferer shall be 1.5 times chip rate of the radio access mode. (e.g. 5.76 MHz for a chip rate of 3.84 Mcps). The flatness across this minimum bandwidth shall be less than ±0.5 dB and the peak to average ratio at a probability of 0.001% shall exceed 10 dB.

7.2 Demodulation in static propagation conditions

7.2.1 Demodulation of DCH

7.2.1.1 Definition and applicability

The performance requirement of DCH in static propagation conditions is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data rate of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

The UE shall be tested only according to the datarates, supported. The data-rate-corresponding requirements shall apply to the UE.

7.2.1.2 Minimum requirements

7.2.1.2.1 3,84 Mcps TDD Option

For the parameters specified in table 7.2.1.2.1a the BLER shall not exceed the piece-wise linear BLER curve specified in table 7.2.1.2.1b. These requirements are applicable for TFCS size 16.

The reference for this requirement is TS 25.102 [1] clause 8.2.1.1.1.

Table 7.2.1.2.1a: DCH parameters in static propagation conditions (3,84 Mcps TDD Option)

Parameters	Unit	Test 1	Test 2	Test 3	Test 4	Test 5
$\frac{\Sigma DPCH\_E_c}{I_{or}}$	dB	-6	-3	0	0	0
I_{oc}	dBm/3,84 MHz	-60				
Cell Parameter*		0,1				
DPCH Channelization Codes*	C(k,Q)	C(i,16) i=1,2	C(i,16) i=1 . .5	C(i,16) i=1 . .9	C(i,16) i=1 . .8	-
OCNS Channelization Code*	C(k,Q)	C(3,16)	C(6,16)	-	-	-
Information Data Rate	kbps	12,2	64	144	384	2048
Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.						

Table 7.2.1.2.1b: Performance requirements in AWGN channel (3,84 Mcps TDD Option)

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	1,1	10^{-2}
2	3,5	10^{-1}
	3,8	10^{-2}
3	3,4	10^{-1}
	3,6	10^{-2}
4	2,7	10^{-1}
	3,0	10^{-2}
5	3,5	10^{-1}
	3,6	10^{-2}

7.2.1.2.2 1,28 Mcps TDD Option

For the parameters specified in table 7.2.1.2.2a the BLER should not exceed the piece-wise linear BLER curve specified in table 7.2.1.2.2b. The reference for this requirement is TS 25.102 [1] clause 8.2.1.1.2.

Table 7.2.1.2.2a: DCH parameters in static propagation conditions (1,28Mcps TDD Option)

~~Parameters~~	~~Unit~~	~~Test 1~~	~~Test 2~~	~~Test 3~~	~~Test 4~~
~~Number of DPCH$_{o}$~~		~~8~~	~~2~~	~~2~~	~~0~~
$\frac{DPCH_o \_ E_c}{I_{or}}$	~~dB~~	~~-10~~	~~-10~~	~~-10~~	~~0~~
~~I_{oc}~~	~~DBm/1,28MHz~~	~~-60~~			
~~Information Data Rate~~	~~Kbps~~	~~12,2~~	~~64~~	~~144~~	~~384~~

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of $DPCH_o$		8	2	2	0
Scrambling code and basic midamble code number*		0	0	0	0
DPCH Channelization Codes*	C(k,Q)	C(i,16) i=1,2	C(i,16) i=1…8	C(i,16) i=1…8	C(i,16) i=1…10
$DPCH_o$ Channelization Codes*	C(k,Q)	C(i,16) 3≤ i ≤10	C(i,16) 9≤ i ≤10	C(i,16) 9≤ i ≤10	-
$\frac{DPCH_o \_ E_c}{I_{or}}$	dB	-10	-10	-10	0
I_{oc}	DBm/1.28MHz	-60			
Information Data Rate	Kbps	12.2	64	144	384
*Note: Refer to TS 25.223 for definition of channelization codes, scrambling code and basic midamble code.					

Table 7.2.1.2.2b: Performance requirements in AWGN channel (1,28 Mcps TDD Option)

~~Test Number~~	$\frac{\hat{I}_{or}}{I_{oc}}$ ~~[dB]~~	~~BLER~~
~~1~~	~~3,1~~	~~10^{-2}~~
~~2~~	~~2,1~~	~~10^{-1}~~
	~~2,4~~	~~10^{-2}~~
~~3~~	~~2,5~~	~~10^{-1}~~
	~~2,8~~	~~10^{-2}~~
~~4~~	~~2,8~~	~~10^{-1}~~

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	3.6	10^{-2}
2	2.4	10^{-1}
	2.7	10^{-2}
3	2.8	10^{-1}
	3.2	10^{-2}
4	3.2	10^{-1}

7.2.1.3 Test purpose

While the receiver tests in clause 6 aims for the RF hardware, this performance requirement aims for the receiver's signal processing.

The test purpose is to verify the ability of the receiver to receive a predefined test signal ,representing a static propagation channel for the wanted and for the co-channel signals from serving and adjacent cells, with a block error ratio (BLER) not exceeding a specified value.

7.2.1.4 Method of test

7.2.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS, AWGN Generator and additional components to the UE antenna connector as shown in figure A.9.

2) A call is set up according to the Generic call setup procedure. The characteristic of the call shall be according to the DL reference measurement channels (12,2 kbit/s) (64 kbit/s), (144 kbit/s), and (384 kbit/s) specified in annex C.

3) Enter the UE into loopback test mode and start the loopback test. (test 1) and/or activate the Ack/Nack test mode (test 1 to test 4).

4) The levels of the wanted signal and the co-channel signals are set according to table 7.2.1.2.1a and b for the 3,84 Mcps TDD Option and table 7.2.1.2.2a and b for the 1,28 Mcps TDD Option, respectively.

7.2.1.4.2 Procedure

Measure the BLER of DCH received from the UE at the SS for all tests specified in table 7.2.1.2.1a for the 3,84 Mcps TDD Option and table 7.2.1.2.2a for the 1,28 Mcps TDD Option, respectively.

7.2.1.5 Test requirements

The measured BLER shall not exceed the values indicated in table 7.2.1.2.1b for the 3,84 Mcps TDD Option and table 7.2.1.2.2b for the 1,28 Mcps TDD Option, respectively.

7.3 Demodulation of DCH in multipath fading conditions

7.3.1 Multipath fading Case 1

7.3.1.1 Definition and applicability

The performance requirement of DCH is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data ratio of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

The UE shall be tested only according to the dataratios, supported. The data-ratio-corresponding requirements shall apply to the UE.

7.3.1.2 Minimum requirements

7.3.1.2.1 3,84 Mcps TDD Option

For the parameters specified in table 7.3.1.2.1a the BLER shall not exceed the piece-wise linear BLER curve specified in table 7.3.1.2.1b. These requirements are applicable for TFCS size 16.

The reference for this requirement is TS 25.102 clause 8.3.1.1.1.

Table 7.3.1.2.1a: DCH parameters in multipath Case 1 channel (3,84 Mcps TDD Option)

Parameters	Unit	Test 1	Test 2	Test 3	Test 4	Test 5
$\frac{\Sigma DPCH\_E_c}{I_{or}}$	DB	-6	-3	0	0	0
I_{oc}	dBm/3,84 MHz	-60				
Cell Parameter (note)		0,1				
DPCH Channelization Codes (note)	C(k,Q)	C(i,16) i=1,2	C(i,16) i=1 . .5	C(i,16) i=1 . .9	C(i,16) i=1 . .8	-
OCNS Channelization Code (note)	C(k,Q)	C(3,16)	C(6,16)	-	-	-
Information Data Rate	kbps	12,2	64	144	384	2048
Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.						

Table 7.3.1.2.1b: Performance requirements in multipath Case 1 channel (3,84 Mcps TDD Option)

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	13,9	10^{-2}
2	13,7	10^{-1}
	19,8	10^{-2}
3	14,1	10^{-1}
	20,6	10^{-2}
4	13,8	10^{-1}
	20,0	10^{-2}
5	13,2	10^{-1}
	17,8	10^{-2}

7.3.1.2.2 1,28 Mcps TDD Option

For the parameters specified in table 7.3.1.2.2a the BLER should not exceed the piece-wise linear BLER curve specified in table 7.3.1.2.2b. The reference for this requirement is TS 25.102 [1] clause 8.3.1.1.2.

Table 7.3.1.2.2a: DCH parameters in a multipath Case 1 channel (1.28 Mcps TDD Option)

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of $DPCH_o$		8	2	2	0
Scrambling code and basic midamble code number*		0	0	0	0
DPCH Channelization Codes*	C(k,Q)	C(i,16) i=1,2	C(i,16) i=1…8	C(i,16) i=1…8	C(i,16) i=1…10
$DPCH_o$ Channelization Codes*	C(k,Q)	C(i,16) 3≤ i ≤10	C(i,16) 9≤ i ≤10	C(i,16) 9≤ i ≤10	-
$\frac{DPCH_o \_ E_c}{I_{or}}$	DB	-10	-10	-10	0
I_{oc}	dBm/1.28MHz	-60			
Information Data Rate	Kbps	12.2	64	144	384
*Note: Refer to TS 25.223 for definition of channelization codes, scrambling code and basic midamble code.					

~~**in static propagation conditions (1,28Mcps TDD Option)**~~

~~Parameters~~	~~Unit~~	~~Test 1~~	~~Test 2~~	~~Test 3~~	~~Test 4~~
~~Number of $DPCH_o$~~		~~8~~	~~2~~	~~2~~	~~0~~
~~$\frac{DPCH_o \_ E_c}{I_{or}}$~~	~~dB~~	~~-10~~	~~-10~~	~~-10~~	~~0~~
~~I_{oc}~~	~~DBm/1,28MHz~~	~~-60~~			
~~Information Data Rate~~	~~Kbps~~	~~12,2~~	~~64~~	~~144~~	~~384~~

Table 7.3.1.2.2b: Performance requirements in a multipath Case 1 channel (1.28 Mcps TDD Option)

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	22.4	10^{-2}
2	15.8	10^{-1}
	22.9	10^{-2}
3	16.6	10^{-1}
	23.9	10^{-2}
4	16.5	10^{-1}
	23.5	10^{-2}

~~AWGN channel (1,28Mcps TDD Option)~~

~~Test Number~~	$\frac{\hat{I}_{or}}{I_{oc}}$ ~~[dB]~~	~~BLER~~
~~1~~	~~3,1~~	~~10^{-2}~~
~~2~~	~~2,1~~	~~10^{-1}~~
	~~2,4~~	~~10^{-2}~~
~~3~~	~~2,5~~	~~10^{-1}~~
	~~2,8~~	~~10^{-2}~~
~~4~~	~~2,8~~	~~10^{-1}~~

7.3.1.3 Test purpose

While the receiver tests in clause 6 aims for the RF hardware, this performance requirement aims for the receiver's signal processing.

The test purpose is to verify the ability of the receiver to receive a predefined test signal, representing a multipath propagation channel for the wanted and for the co-channel signals from serving and adjacent cells, with a block error ratio (BLER) not exceeding a specified value.

7.3.1.4 Method of test

7.3.1.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS, , the fading simulator, the AWGN generator and additional components to the UE antenna connector as shown in figure A.10.

2) A call is set up according to the Generic call setup procedure. The characteristic of the call shall be according to the DL reference measurement channels (12,2 kbit/s), (64 kbit/s), (144 kbit/s), and (384 kbit/s) specified in annex C.

3) Enter the UE into loopback test mode and start the loopback test. (test 1) and/or activate the Ack/Nack test mode (test 1 to test 4).

4) The levels of the wanted signal and the co-channel signals are set according to table 7.3.1.2.1a and b for the 3,84 Mcps TDD Option and table 7.3.1.2.2a and b for the 1,28 Mcps TDD Option, respectively.

7.3.1.4.2 Procedure

Measure the BLER of DCH received from the UE at the SS for all tests specified in table 7.3.1.2.1a for the 3,84 Mcps TDD Option and table 7.3.1.2.2a for the 1,28 Mcps TDD Option, respectively.

7.3.1.5 Test requirements

The measured BLER shall not exceed the values indicated in table 7.3.1.2.1b for the 3,84 Mcps TDD Option and table 7.3.1.2.2b for the 1,28 Mcps TDD Option, respectively.

7.3.2 Multipath fading Case 2

7.3.2.1 Definition and applicability

The performance requirement of DCH is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data rate of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

The UE shall be tested only according to the datarates, supported. The data-rate-corresponding requirements shall apply to the UE.

7.3.2.2 Minimum requirement

7.3.2.2.1 3,84 Mcps TDD Option

For the parameters specified in table 7.3.2.2.1a the BLER should not exceed the piece-wise linear BLER curve specified in table 7.3.2.2.1b. These requirements are applicable for TFCS size 16.

The reference for this requirement is TS 25.102 [1] clause 8.3.2.1.

Table 7.3.2.2.1a: DCH parameters in multipath Case 2 channel (3,84 Mcps TDD Option)

Parameters	Unit	Test 1	Test 2	Test 3	Test 4	Test 5
$\frac{\Sigma DPCH\_E_c}{I_{or}}$	DB	-3	0	0	0	0
I_{oc}	dBm/3,84 MHz	-60				
Cell Parameter (note)		0,1				
DPCH Channelization Codes (note)	C(k,Q)	C(i,16) i=1,2	C(i,16) i=1 . .5	C(i,16) i=1 . .9	C(i,16) i=1 . .8	-
OCNS Channelization Code (note)	C(k,Q)	C(3,16)	-	-	-	-
Information Data Rate	kbps	12,2	64	144	384	2048
Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.						

Table 7.3.2.2.1b: Performance requirements in multipath Case 2 channel (3,84 Mcps TDD Option)

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	5,8	10^{-2}
2	5,7	10^{-1}
	9,2	10^{-2}
3	9,3	10^{-1}
	12,7	10^{-2}
4	8,8	10^{-1}
	12,0	10^{-2}
5	10,3	10^{-1}
	12,7	10^{-2}

7.3.2.2.2 1,28 Mcps TDD Option

For the parameters specified in table 7.3.2.2.2a: the BLER should not exceed the piece-wise linear BLER curve specified in table 7.3.2.2.2b. The reference for this requirement is TS 25.102 [1] clause 8.3.2.1.2.

Table 7.3.2.2.2a: DCH parameters in multipath Case 2 channel (1.28 Mcps TDD Option)

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of $DPCH_o$		8	2	2	0
Scrambling code and basic midamble code number*		0	0	0	0
DPCH Channelization Codes*	C(k,Q)	C(i,16) i=1,2	C(i,16) i=1…8	C(i,16) i=1…8	C(i,16) i=1…10
$DPCH_o$ Channelization Codes*	C(k,Q)	C(i,16) 3≤ i ≤10	C(i,16) 9≤ i ≤10	C(i,16) 9≤ i ≤10	-
$\frac{DPCH_o\_E_c}{I_{or}}$	dB	-10	-10	-10	0
I_{oc}	dBm/1.28MHz	-60			
Information Data Rate	Kbps	12.2	64	144	384
*Note Refer to TS 25.223 for definition of channelization codes, scrambling code and basic midamble code.					

~~**multipath Case 2 channel (1,28Mcps TDD Option)**~~

~~Parameters~~	~~Unit~~	~~Test 1~~	~~Test 2~~	~~Test 3~~	~~Test 4~~
~~Number of $DPCH_o$~~		~~8~~	~~2~~	~~2~~	~~0~~
~~$\frac{DPCH_o\_E_c}{I_{or}}$~~	~~dB~~	~~-10~~	~~-10~~	~~-10~~	~~0~~
~~I_{oc}~~	~~dBm/1,28MHz~~	~~-60~~			
~~Information Data Rate~~	~~Kbps~~	~~12,2~~	~~64~~	~~144~~	~~384~~

Table 7.3.2.2.2b: Performance requirements in multipath Case 2 channel (1.28 Mcps TDD Option)

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	13.6	10^{-2}
2	9.8	10^{-1}
	13.9	10^{-2}
3	10.3	10^{-1}
	14.4	10^{-2}
4	10.5	10^{-1}
	14.4	10^{-2}

~~Case 2 channel (1,28Mcps TDD Option)~~

~~Test Number~~	$\frac{\hat{I}_{or}}{I_{oc}}$ ~~[dB]~~	~~BLER~~
~~1~~	~~13,2~~	~~10^{-2}~~
~~2~~	~~9,5~~	~~10^{-1}~~
	~~13,7~~	~~10^{-2}~~
~~3~~	~~10,0~~	~~10^{-1}~~
	~~14,0~~	~~10^{-2}~~
~~4~~	~~10,0~~	~~10^{-1}~~
	~~14,0~~	~~10^{-2}~~

7.3.2.3 Test purpose

While the receiver tests in clause 6 aims for the RF hardware, this performance requirement aims for the receiver's signal processing.

The test purpose is to verify the ability of the receiver to receive a predefined test signal, representing a multipath propagation channel for the wanted and for the co-channel signals from serving and adjacent cells, with a block error ratio (BLER) not exceeding a specified value.

7.3.2.4 Method of test

7.3.2.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS, the fading simulator, the AWGN generator and additional components to the UE antenna connector as shown in figure A.10.

2) A call is set up according to the Generic call setup procedure. The characteristic of the call shall be according to the DL reference measurement channels (12,2 kbit/s) (64 kbit/s), (144 kbit/s), and (384 kbit/s) specified in annex C.

3) Enter the UE into loopback test mode and start the loopback test. (test 1) and/or activate the Ack/Nack test mode (test 1 to test 4).

4) The levels of the wanted signal and the co-channel signals are set according to table 7.3.2.2.1a and b for the 3,84 Mcps TDD Option and table 7.3.2.2.2a and b for the 1,28 Mcps TDD Option, respectively.

7.3.2.4.2 Procedure

Measure the BLER of DCH received from the UE at the SS for all tests specified in table 7.3.2.2.1a for the 3,84 Mcps TDD Option and table 7.3.2.2.2a for the 1,28 Mcps TDD Option, respectively.

7.3.2.5 Test requirements

The measured BLER shall not exceed the values indicated in table 7.3.2.2.1b for the 3,84 Mcps TDD Option and table 7.3.2.2.2b for the 1,28 Mcps TDD Option, respectively.

7.3.3 Multipath fading Case 3

7.3.3.1 Definition and applicability

The performance requirement of DCH is determined by the maximum Block Error Ratio (BLER). The BLER is specified for each individual data rate of the DCH. DCH is mapped into the Dedicated Physical Channel (DPCH).

The UE shall be tested only according to the datarates, supported. The data-rate-corresponding requirements shall apply to the UE.

7.3.3.2 Minimum requirements

7.3.3.2.1 3,84 Mcps TDD Option

For the parameters specified in table 7.3.3.2.1a the BLER should not exceed the piece-wise linear BLER curve specified in table 7.3.3.2.1b. These requirements are applicable for TFCS size 16.

The reference for this requirement is 3G TS 25.102 clause 8.3.3.1.1.

Table 7.3.3.2.1a: DCH parameters in multipath Case 3 channel (3,84 Mcps TDD Option)

Parameters	Unit	Test 1	Test 2	Test 3	Test 4	Test 5
$\frac{\Sigma DPCH\_E_c}{I_{or}}$	DB	-3	0	0	0	0
I_{oc}	dBm/3,84 MHz	-60				
Cell Parameter (note)		0,1				
DPCH Channelization Codes (note)	C(k,Q)	C(i,16) i=1,2	C(i,16) i=1 . .5	C(i,16) i=1 . .9	C(i,16) i=1 . .8	-
OCNS Channelization Code (note)	C(k,Q)	C(3,16)	-	-	-	-
Information Data Rate	kbps	12,2	64	144	384	2048
Note: Refer to TS 25.223 for definition of channelization codes and cell parameter.						

Table 7.3.3.2.1b: Performance requirements in multipath Case 3 channel (3,84 Mcps TDD Option)

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	4,8	10^{-2}
2	5,8	10^{-1}
	8,5	10^{-2}
	10,7	10^{-3}
3	10,3	10^{-1}
	13,3	10^{-2}
	16,0	10^{-3}
4	8,9	10^{-1}
	11,5	10^{-2}
	13,6	10^{-3}
5	9,4	10^{-1}
	11,5	10^{-2}
	13,6	10^{-3}

7.3.3.2.2 1,28 Mcps TDD Option

For the parameters specified in table 7.3.3.2.2a the BLER should not exceed the piece-wise linear BLER curve specified in table 7.3.3.2.2b. The reference for this requirement is TS 25.102 [1] clause 8.3.3.1.2.

Table 7.3.3.2.2a: DCH parameters in multipath Case 3 channel (1.28 Mcps TDD Option)

Parameters	Unit	Test 1	Test 2	Test 3	Test 4
Number of $DPCH_o$		8	2	2	0
Scrambling code and basic midamble code number*		0	0	0	0
DPCH Channelization Codes*	C(k,Q)	C(i,16) i=1,2	C(i,16) i=1…8	C(i,16) i=1…8	C(i,16) i=1…10
$DPCH_o$ Channelization Codes*	C(k,Q)	C(i,16) 3≤ i ≤10	C(i,16) 9≤ i ≤10	C(i,16) 9≤ i ≤10	-
$\frac{DPCH_o\_E_c}{I_{or}}$	dB	-10	-10	-10	0
I_{oc}	dBm/1.28MHz	-60			
Information Data Rate	Kbps	12.2	64	144	384
*Note Refer to TS 25.223 for definition of channelization codes, scrambling code and basic midamble code.					

~~**Case 3 channel (1,28Mcps TDD Option)**~~

~~Parameters~~	~~Unit~~	~~Test 1~~	~~Test 2~~	~~Test 3~~	~~Test 4~~
~~Number of $DPCH_o$~~		~~8~~	~~2~~	~~2~~	~~0~~
~~$\frac{DPCH_o\_E_c}{I_{or}}$~~	~~dB~~	~~-10~~	~~-10~~	~~-10~~	~~0~~
~~I_{oc}~~	~~dBm/1,28MHz~~	~~-60~~			
~~Information Data Rate~~	~~Kbps~~	~~12,2~~	~~64~~	~~144~~	~~384~~

Table 7.3.3.2.2b: Performance requirements in multipath Case 3 channel (1.28 Mcps TDD Option)

Test Number	$\frac{\hat{I}_{or}}{I_{oc}}$ [dB]	BLER
1	11.7	10^{-2}
2	9.0	10^{-1}
	11.7	10^{-2}
	14.3	10^{-3}
3	9.1	10^{-1}
	11.2	10^{-2}
	12.7	10^{-3}
4	9.3	10^{-1}
	10.8	10^{-2}
	12.0	10^{-3}

~~Case 3 channel (1,28Mcps TDD Option)~~

~~Test Number~~	$\frac{\hat{I}_{or}}{I_{oc}}$ ~~[dB]~~	~~BLER~~
~~1~~	~~10,8~~	~~10^{-2}~~
~~2~~	~~8,3~~	~~10^{-1}~~
	~~11,1~~	~~10^{-2}~~
	~~13,8~~	~~10^{-3}~~
~~3~~	~~8,7~~	~~10^{-1}~~
	~~10,6~~	~~10^{-2}~~
	~~11,8~~	~~10^{-3}~~
~~4~~	~~8,8~~	~~10^{-1}~~
	~~10,3~~	~~10^{-2}~~
	~~11,5~~	~~10^{-3}~~

7.3.3.3 Test purpose

While the receiver tests in clause 6 aims for the RF hardware, this performance requirement aims for the receiver's signal processing.

The test purpose is to verify the ability of the receiver to receive a predefined test signal ,representing a multipath propagation channel for the wanted and for the co-channel signals from serving and adjacent cells, with a block error ratio (BLER) not exceeding a specified value.

7.3.3.4 Method of test

7.3.3.4.1 Initial conditions

Test environment: normal; see clauses G.2.1 and G.2.2.

Frequencies to be tested: mid range; see clause G.2.4.

1) Connect the SS, the fading simulator, the AWGN generator and additional components to the UE antenna connector as shown in figure A.10.

2) A call is set up according to the Generic call setup procedure. The characteristic of the call shall be according to the DL reference measurement channels (12,2 kbit/s)(64 kbit/s), (144 kbit/s), and (384 kbit/s) specified in annex C.

3) Enter the UE into loopback test mode and start the loopback test. (test 1) and/or activate the Ack/Nack test mode (test 1 to test 4).

4) The levels of the wanted signal and the co-channel signals are set according to table 7.3.3.2.1a and b for the 3,84 Mcps TDD Option and table 7.3.3.2.2a and b for the 1,28 Mcps TDD Option, respectively.

7.3.3.4.2 Procedure

Measure the BLER of DCH received from the UE at the SS for all tests specified in table 7.3.3.2.1a for the 3,84 Mcps TDD Option and table 7.3.3.2.2a for the 1,28 Mcps TDD Option, respectively.

7.3.3.5 Test requirements

The measured BLER shall not exceed the values indicated in table 7.3.3.2.1b for the 3,84 Mcps TDD Option and table 7.3.3.2.2b for the 1,28 Mcps TDD Option, respectively.