TSG-RAN Meeting #10
Bangkok, Thailand, 6 - 8 December 2000

RP-000591

Title: Agreed CRs to TS 25.133

Source: TSG RAN WG4

Agenda Item:5.4.3

Tdoc Num	TS	CR number	Title	Type	Status	Cur Ver	New Ver
R4-000805	25.133	47	Received total wideband power	F	agreed	3.3.0	3.4.0
R4-000863	25.133	48	Removal of cell selection delay requirements	F	agreed	3.3.0	3.4.0
R4-000864	25.133	49	Clarification of the random access requirements	F	agreed	3.3.0	3.4.0
R4-000866	25.133	50	Correction of RRC re-establishment requirements	F	agreed	3.3.0	3.4.0
R4-000868	25.133	51	Event triggered reporting in AWGN conditions	F	agreed	3.3.0	3.4.0
R4-000869	25.133	52	Inter frequency measurements in AWGN	F	agreed	3.3.0	3.4.0
R4-000871	25.133	53	Physical channel BER accuracy	F	agreed	3.3.0	3.4.0
R4-000873	25.133	54	Event triggered reporting in fading conditions	F	agreed	3.3.0	3.4.0
R4-000875	25.133	55	Periodic reporting in AWGN	F	agreed	3.3.0	3.4.0
R4-000895	25.133	56	Introduction of UE Rx-Tx time difference type 1 & 2	F	agreed	3.3.0	3.4.0
R4-000896	25.133	57	Correction of UE Tx timing adjustment	F	agreed	3.3.0	3.4.0
R4-000942	25.133	58	Alignment of intra frequency CPICH Ec/Io measurement requirements in TS25.133	F	agreed	3.3.0	3.4.0
R4-000945	25.133	59	Multiple neighbour test cases	F	agreed	3.3.0	3.4.0
R4-000981	25.133	60	Correction of intra- and inter frequency measurement requirement.	F	agreed	3.3.0	3.4.0
R4-000985	25.133	61	Correction of TDD measurement requirements.	F	agreed	3.3.0	3.4.0
R4-000993	25.133	62	General cell re-selection requirements	F	agreed	3.3.0	3.4.0
R4-000994	25.133	63	BSIC verification requirements in TS25.133	F	agreed	3.3.0	3.4.0
R4-000995	25.133	64	GSM RSSI measurement	F	agreed	3.3.0	3.4.0
R4-000996	25.133	65	Clarification of parallel measurement section	F	agreed	3.3.0	3.4.0

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CHANGE REQUEST

⌘ **25.133 CR 47** ⌘ rev **-** ⌘ Current version: **3.3.0** ⌘

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

Title: ⌘	Received total wideband power	
Source: ⌘	RAN WG4	
Work item code: ⌘		***Date:*** ⌘ 2000-11-08
Category: ⌘ **F**		***Release:*** ⌘ R99

Use <u>one</u> of the following categories:
F (essential correction)
A (corresponds to a correction in an earlier release)
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2   (GSM Phase 2)
R96   (Release 1996)
R97   (Release 1997)
R98   (Release 1998)
R99   (Release 1999)
REL-4   (Release 4)
REL-5   (Release 5)

Reason for change: ⌘	Updates according to new definition of measurement
Summary of change: ⌘	Changes the name of the RSSI measurement to Received total wideband power and includes lower limits to the requirement.
Consequences if not approved: ⌘	The requirement will lack a lower limit and will lack a definition.

Clauses affected: ⌘	9.2.1

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

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9.2.1 Received total wideband powerRSSI

The measurement period shall be [100] ms.

9.2.1.1 Absolute accuracy requirement

Table 9-32

Parameter	Unit	Accuracy [dB]	Conditions
			Range
Io	dBm	± 4	For levels <= -103<= Io <=-74 dBm

9.2.1.2 Relative accuracy requirement

The relative accuracy of RSSI is defined as the RSSI Received total wideband power measured at one frequency compared to the RSSI Received total wideband power measured from the same frequency at a different time.

Note: The accuracy requirement and the conditions in table 9-33 to needs to be revised when the definitondefinition of the UTRAN RSSI measurement is decided within WG1.

Table 9-33

Parameter	Unit	Accuracy [dB]	Conditions
			Range
Io	dBm	± [0.5]	For changes <= ±5.0dB forand Io <= -103 dBm<= Io <= -74dBm

9.2.1.3 RSSI Received total wideband power measurement report mapping

The reporting range for *Received total wideband power (RTWP)RSSI* is from -112 ... -50 dBm.

In table 9-34 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9-34

Reported value	Measured quantity value	Unit
RSSI_LEV _000	RSSI < -112.0	dBm
RSSI_LEV _001	-112.0 ≤ RSSI < -111.9	dBm
RSSI_LEV _002	-111.9 ≤ RSSI < -111.8	dBm
...	...	...
RSSI_LEV _619	-50.2 ≤ RSSI < -50.1	dBm
RSSI_LEV _620	-50.1 ≤ RSSI < -50.0	dBm
RSSI_LEV _621	-50.0 ≤ RSSI	dBm

Reported value	Measured quantity value	Unit
RTWP_LEV _000	RTWP < -112.0	dBm
RTWP_LEV _001	-112.0 ≤ RTWP < -111.9	dBm
RTWP_LEV _002	-111.9 ≤ RTWP < -111.8	dBm
...	...	...
RTWP_LEV _619	-50.2 ≤ RTWP < -50.1	dBm
RTWP_LEV _620	-50.1 ≤ RTWP < -50.0	dBm
RTWP_LEV _621	-50.0 ≤ RTWP	dBm

3GPP TSG RAN WG4 Meeting #14

Sophia, France 13th - 17th November 2000

R4-000863

CHANGE REQUEST

| ⌘ | **25.133** CR **48** | ⌘ | rev | **-** | ⌘ | Current version: | **3.3.0** | ⌘ |

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

Title: ⌘	Removal of cell selection delay requirements	
Source: ⌘	RAN WG4	
Work item code: ⌘		**Date:** ⌘ 13-17 Nov 2000
Category: ⌘ **F**		**Release:** ⌘ R99

Use <u>one</u> of the following categories:
F (essential correction)
A (corresponds to a correction in an earlier release)
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D (Editorial modification)
Detailed explanations of the above categories can
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2   (GSM Phase 2)
R96   (Release 1996)
R97   (Release 1997)
R98   (Release 1998)
R99   (Release 1999)
REL-4   (Release 4)
REL-5   (Release 5)

Reason for change: ⌘	Currently, TS 25.133 states strict requirements on UE to find a suitable cell at cell selection, based on UE stored information from last network contact. There are no requirements in any specification that mandates the amount of information a UE stores to optimise cell selection algorithms. It is in the interest of each UE vendor to get as good UE cell selection performance as possible.
Summary of change: ⌘	Requirements on Stored information cell selection and test cases have been removed.
Consequences if not approved: ⌘	Requirements on stored information are put on UE, that is a UE implementation issue.

Clauses affected: ⌘	4.1.1, 4.1.2, A.4.1
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	

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3GPP

4.1 Cell Selection

4.1.1 Introduction

After a UE has switched on and a PLMN has been selected, the Cell selection process takes place, as described in TS25.304. This process allows the UE to select a suitable cell where to camp on in order to access available services. In this process the UE can use stored information (*Stored information cell selection*) or not (*Initial cell selection*).

NOTE: At the moment, only requirements for *Stored information cell selection* has been defined.

4.1.2 Requirements

4.1.2.1 Stored information cell selection delay

The stored information cell selection delay is defined as the time the UE needs for sending the preamble for RRC Connection Request for Location Registration to UTRAN after the power has been switched on with a valid USIM and PIN is disabled.

4.1.2.1.1 The cells in the neighbour list belong to different frequencies

Unless otherwise stated, the cell selection delay shall be equal or less than [X] seconds when the cells in the neighbour list belong to less than [3] frequencies.

4.1.2.1.2 No cell is present in the neighbour list

The cell selection delay shall be equal or less than [5] seconds.

A.4   Idle Mode

A.4.1   Cell selection

Two scenarios are considered:

☐Scenario 1: The cells in the neighbour list belong to different frequencies

☐Scenario 2: No cell is present in the neighbour list

For each of them a test is proposed.

NOTE: More scenarios will be added later.

A.4.1.1   Scenario 1: the cells in the neighbour list belong to different frequencies

A.4.1.1.1   Test Purpose and Environment

This test is to verify the requirement reported in section 4.1.2.1.1.

This scenario implies the presence of 2 carriers and 6 cells (3 cells per carrier) as reported in Table A.4-1 and A.4-2.

The stored information of the last registered PLMN is used in this test. The stored information includes one of the UTRA RF CHANNEL NUMBERs used in the test. All the cells in the test are given in the measurement control information of each cell, which are on the RF carrier stored in the UE.

NOTE: Here pilot pollution case with different power levels for cells could be included.

Table A.4-1: General test parameters for Cell Selection in Multi carrier case

	Parameter	Unit	Value	Comment
Initial condition	Stored RF channel		Channel1	
	Neighbour cells of Cell1		Cell2, Cell3,Cell4, Cell5, Cell6	
	Neighbour cells of Cell2		Cell1, Cell3,Cell4, Cell5, Cell6	
	Neighbour cells of Cell3		Cell1, Cell2,Cell4, Cell5, Cell6	
Final condition	Active cell		Cell5	

Table A.4-2: Cell selection multi carrier multi cell case

Parameter	Unit	Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6
UTRA RF Channel Number		Channel 1	Channel 1	Channel 1	Channel 2	Channel 2	Channel 2
CPICH_Ec/Ior	dB	–10	–10	–10	–10	–10	–10
PCCPCH_Ec/Ior	dB	–12	–12	–12	–12	–12	–12
SCH_Ec/Ior	dB	–12	–12	–12	–12	–12	–12
PICH_Ec/Ior	dB	–15	–15	–15	–15	–15	–15
OCNS_Ec/Ior	dB	-0.941	-0.941	-0.941	-0.941	-0.941	-0.941
$\hat{I}_{or}/I_{oc}$	dB	5.3	2.3	–1.7	6.3	14.3	2.3
I_{oc}	dBm/3.84 MHz	–70			–70		
CPICH_Ec/Io	dB	–13	–16	–20	–19	–11	–23
Propagation Condition		AWGN			AWGN		
Qqualmin	dB	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Qrxlevmin	dBm	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
UE_TXPWR_MAX_RACH	dBm	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Qoffset$_{s,n}$	dB	C1, C2: [ ] C1, C3: [ ] C1, C4: [ ] C1, C5: [ ] C1, C6: [ ]	C2, C1: [ ] C2, C3: [ ] C2, C4: [ ] C2, C5: [ ] C2, C6: [ ]	C3, C1: [ ] C3, C2: [ ] C3, C4: [ ] C3, C5: [ ] C3, C6: [ ]	C4, C1: [ ] C4, C2: [ ] C4, C3: [ ] C4, C5: [ ] C4, C6: [ ]	C5, C1: [ ] C5, C2: [ ] C5, C3: [ ] C5, C4: [ ] C5, C6: [ ]	C6, C1: [ ] C6, C2: [ ] C6, C3: [ ] C6, C4: [ ] C6, C5: [ ]

A.4.1.2.2 Test Requirements

The requirements reported in section 4.1.2.1.1 shall be verified in more than [X%] of the cases.

A.4.1.2 Scenario 2 : no cell is present in the neighbour list

A.4.1.2.1 Test Purpose and Environment

This test is to verify the requirement reported in section 4.1.2.1.2.

This scenario implies the presence of 1 carrier and 1 cell as reported in Table A.4-3.

The stored information of the last registered PLMN is used in this test. The stored information includes the UTRA RF CHANNEL NUMBER. The active cell in the test does not contain any neighbour cells in its measurement control information.

Table A.4-3: Cell selection single carrier single cell case

Parameter	Unit	Cell 1
UTRA RF Channel Number		Channel 1
CPICH_Ec/Ior	dB	–10
PCCPCH_Ec/Ior	dB	–12
SCH_Ec/Ior	dB	–12
PICH_Ec/Ior	dB	–15
OCNS_Ec/Ior	dB	-0.941
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	–70
CPICH_Ec/Io	dB	–13
Propagation Condition		AWGN
Qqualmin	dB	[ ]
Qrxlevmin	dBm	[ ]
UE_TXPWR_MAX_RACH	dBm	[ ]

A.4.1.2.2 Test Requirements

The requirements reported in section 4.1.2.1.2 shall be verified in more than [X %] of the cases.

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CHANGE REQUEST

⌘   **25.133 CR 49**   ⌘ rev **-** ⌘ Current version: **3.3.0** ⌘

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

Title: ⌘	Clarification of the random access requirements	
Source: ⌘	RAN WG4	
Work item code: ⌘		***Date:*** ⌘ 13-17 Nov 2000
Category: ⌘ **F**		***Release:*** ⌘ R99

Use one of the following categories:	*Use one of the following releases:*
F *(essential correction)*	2 *(GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	R96 *(Release 1996)*
B *(Addition of feature),*	R97 *(Release 1997)*
C *(Functional modification of feature)*	R98 *(Release 1998)*
D *(Editorial modification)*	R99 *(Release 1999)*
Detailed explanations of the above categories can	REL-4 *(Release 4)*
be found in 3GPP TR 21.900.	REL-5 *(Release 5)*

Reason for change: ⌘	Non applicable random access requirement exists and additional test set-up parameters are needed.
Summary of change: ⌘	Removal of transmit power requirement in 6.3.2.2 since not applicable. A reference to TS 34.108 has been introduced. Brackets have also been removed were suitable values exist.
Consequences if not approved: ⌘	Non valid requirement will exist and test set-up parameters will be incomplete.

Clauses affected: ⌘	6.3, A.6.2

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

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6.3 Random Access

6.3.1 Introduction

The random access procedure is used when establishing the layer 1 communication between the UE and UTRAN. The random access shall provide a fast access but without disturbing ongoing connections. The random access is specified in section 6 of TS 25.214 and the control of the RACH transmission is specified in section 11.2 of TS 25.321. A random access transmit sequence is described in section 6.7.2 of TS 25.303.

6.3.2 Requirements

The UE shall have capability to calculate initial power according to the open loop algorithm and apply this power level at the first preamble and increase the power on additional preambles. The UE shall stop transmit preambles upon a ACK/NACK on the AICH has been received or if the maximum number of preambles within on cycle has been reached. Upon an ACK has been received the UE shall transmit a message otherwise the ramping procedure shall be repeated.

6.3.2.1 Correct behaviour when receiving an ACK

The UE shall stop transmitting preambles upon a ACK on the AICH has been received and then transmit a message..

The absolute power applied to the first preamble shall have an accuracy as specified in table 6.3 of 25.101 [3]. The relative power applied to additional preambles shall have an accuracy as specified in section 6.5.2.1 of 25.101 [3].

6.3.2.2 Correct behaviour when receiving an NACK

The UE shall stop transmitting preambles upon a NACK on the AICH has been received and then repeat the ramping procedure when the backoff timer T_{B01} expires.

~~The relative power increase applied to the first preamble of the subsequent cycle shall have an accuracy of +/- [] dB (or +/- [] dB in extreme conditions). The power increase shall be compared to the last preamble of the previous cycle.~~

6.3.2.3 Correct behaviour at Time-out

The UE shall stop transmit preambles when reaching the maximum number of preambles allowed in a cycle. The UE shall then repeat the ramping procedure until the maximum number of preamble ramping cycles are reached.

6.3.2.4 Correct behaviour when reaching maximum transmit power

The UE shall not exceed the maximum allowed UL TX power configured by the UTRAN.

The absolute power of any preamble shall not exceed the maximum allowed UL TX power +/-[] dB (or +/- [] dB in extreme conditions).

A.6.2   Random Access

A.6.2.1   Test Purpose and Environment

The purpose of these tests are to verify that the behaviour of the random access procedure is according to the requirements and that the PRACH power settings are within specified limits. These tests will verify the requirements in section 6.3.2.

Table A.6-3: RF Parameters for Random Access test

Parameter	Unit	Cell 1
UTRA RF Channel Number		Channel 1
CPICH_Ec/Ior	dB	[-10]
PCCPCH_Ec/Ior	dB	[-12]
SCH_Ec/Ior	dB	[-12]
Number of other transmitted Acquisition Indicators	-	0
AICH_Ec/Ior	dB	[-10]
PICH_Ec/Ior	dB	[-15]
OCNS_Ec/Ior when an AI is not transmitted	dB	[-0.941]
OCNS_Ec/Ior when an AI is transmitted	dB	[-1.516]
$\hat{I}_{or}/I_{oc}$	dB	[0]
I_{oc}	dBm/3.84 MHz	[-70]
CPICH_Ec/Io	dB	[-13]
Propagation Condition		AWGN
UE_TXPWR_MAX_RACH	dBm	[15]

The test parameters "System Information Block (SIB) type 5 (ASC #0)" defined in section 6.1 of TS34.108, shall be used in all random access tests. Crucial parameters for the test requirements are repeated in Table A.6-4 and A.6-5 and these overrule the parameters defined in SIB type 5.

Table A.6-4: UE parameters for Random Access test

Parameter	Unit	Value
RACH Transport Format IEs *- Number of Transport blocks* *Octet mode RLC size info* *(i.e. RLC block size)* *Transmission time interval* *- Type of channel coding* *- Coding Rate* *- Rate matching attribute* *- CRC size*	ms bits	[] [] [10] [] [] [] []
Access Service Class (ASC#0) *- PRACH partition* *- Persistence value*	0..1	[] [1]
Maximum number of preamble ramping cycles (M_{max}).		[2]
Maximum number of preambles in one preamble ramping cycle (Preamble Retrans Max)		[120]
The backoff time T_{B01} $N_{B01min=}N_{B01max}$	ms #TTI	N/A [10]
Power step when no acquisition indicator is received (Power offset P0)	dB	[3]
Power offset between the last transmitted preamble and the control part of the message (Power offset P p-m)	dB	[0]
Maximum allowed UL TX power	dBm	[015]

Table A.6-5: UTRAN parameters for Random Access test

Parameter	Unit	Value
RACH Transport Format IEs *- Number of Transport blocks* *Octet mode RLC size info* *(i.e. RLC block size)* *- Transmission time interval* *- Type of channel coding* *- Coding Rate* *- Rate matching attribute* *- CRC size*	ms bits	[] [] [10] [] [] [] []
Primary CPICH DL TX power	dBm	[-8]
UL interference	dBm	[-102noise floor]
SIR in open loop power control (Constant value)	dB	[0]
AICH Power Offset	dB	0

A.6.2.2   Test Requirements

A.6.2.2.1   Correct behaviour when receiving an ACK

The UE shall stop transmitting preambles upon a ACK on the AICH has been received and then transmit a message. An ACK shall be transmitted after [10] preambles have been received by the UTRAN.

The absolute power applied to the first preamble shall be [-30 dBm] with an accuracy as specified in table 6.3 of 25.101 [3]. The relative power applied to additional preambles shall have an accuracy as specified in section 6.5.2.1 of 25.101 [3].

The UE shall transmit [10] preambles and [1] message.

A.6.2.2.2 Correct behaviour when receiving an NACK

The UE shall stop transmitting preambles upon a NACK on the AICH has been received and then repeat the ramping procedure when the backoff timer T_{B01} expires. The NACK shall be transmitted after the [10] preambles have been received by the UTRAN.

The UE shall transmit [10] preambles in the first ramping cycle and no transmission shall be done by the UE within [100] ms after the NACK has been transmitted by the UTRAN. Then the UE shall start the second preamble ramping cycle.

~~The relative power increase applied to the first preamble of the second cycle shall have an accuracy of +/- [] dB (or +/- [] dB in extreme conditions). The power increase shall be compared to the last preamble of the first cycle.~~

A.6.2.2.3 Correct behaviour at Time-out

The UE shall stop transmit preambles when reaching the maximum number of preambles allowed in a cycle. The UE shall then repeat the ramping procedure until the maximum number of preamble ramping cycles are reached. No ACK/NACK shall be sent by UTRAN during this test.

The UE shall transmit [2] preambles cycles, consisting of [120] preambles in each preamble cycle.

A.6.2.2.4 Correct behaviour when reaching maximum transmit power

The UE shall not exceed the maximum allowed UL TX power configured by the UTRAN. No ACK/NACK shall be sent by UTRAN during this test.

The absolute power of any preambles belonging to the first or second preamble cycle shall not exceed [015] dBm +/-[] dB (or +/- [] dB in extreme conditions).

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CHANGE REQUEST

⌘ **25.133** CR **50** ⌘ rev **-** ⌘ Current version: **3.3.0** ⌘

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

Title: ⌘	Correction of RRC re-establishment requirements	
Source: ⌘	RAN WG4	
Work item code: ⌘		***Date:*** ⌘ 13-17 Nov 2000
Category: ⌘ **F**		***Release:*** ⌘ R99

Use *one* of the following categories:
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R97 (Release 1997)
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R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘	This CR proposes changes to section 6.2 RRC connection re-establishment requirements. The current requirements do not consider the number of frequencies a UE have to search in order to do the re-establishment, neither does it consider the time it takes to read system information in the target cell.
Summary of change: ⌘	This CR proposes a new requirement that includes the time it take to read system information and scan several frequencies when the RRC connection re-establishment is performed.
Consequences if not approved: ⌘	If not approved, the current requirements are very difficult for operators to interpret, in order to see how the UE will behave in an arbitrary situation.

Clauses affected: ⌘	6.1, A.6.1	
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications	
Other comments: ⌘		

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6 RRC Connection Control

6.1   RRC Re-establishment

6.1.1   Introduction

RRC connection re-establishment is needed, when a UE loses radio connection due to radio link failure. The RRC connection re-establishment procedure is specified in section 8.5.1 of TS 25.331 and a RRC connection re-establishment sequence is described in section 6.4.8 of TS 25.303.

6.1.2   Requirements

When the UE is in Cell_DCH state, the UE shall be capable of sending a RRC CONNECTION RE-ESTABLISHMENT CONNECT message within $T_{RE\text{-}ESTABLISH}$ seconds from when the CPHY-Out-Of-Synch primitive indicates lost synchronisation.

The RRC Re-establishment delay requirement ($T_{RE\text{-}ESTABLISH\text{-}REQ}$) is defined as the time between the moment when the CPHY-Out-Of-Synch primitive indicates lost synchronisation~~erroneous CRCs are applied~~, to when the UE starts to send preambles on the PRACH.

$T_{RE\text{-}ESTABLISH\text{-}REQ}$ is depending on whether the target cell (that best fulfil the cell re-selection criteria) is known by the UE or not. A cell is known if either:

- the UE has had radio links connected to the cell in the previous (old) active set, or

- the cell has been reported by the UE in a measurement report during the last 5 seconds.

The RRC re-establishment delay shall be less than

    $50+(T_{search}+T_{SI})*NF$ ms

where

    T_{search} is the time it takes for the UE to search the cell.

        T_{search} =100 ms if the target cell is known by the UE, and

        T_{search} =800 ms if the target cell is not known by the UE.

    $T_{SI} = MAX(T_{rep}(3), T_{rep}(5), T_{rep}(6), T_{rep}(7))$

        where $T_{rep}(X)$ is the repetition frequency of system information block X in the target cell (ms).

    NF is the number of different frequencies in the monitored set.

This requirement assumes radio conditions to be sufficient, so that reading of system information can be done without errors.

~~This is illustrated in Figure 6.1, where the RRC Re-establishment delay ($T_{RE\text{-}ESTABLISH\text{-}REQ}$) is the time between T_{start} and T_{stop}. T_{PRIM} is the time it takes for the CPHY-Out-Of-Synch primitive to detect lost synchronisation and $T_{RE\text{-}ESTABLISH}$ is the time to perform higher layer functionality.~~
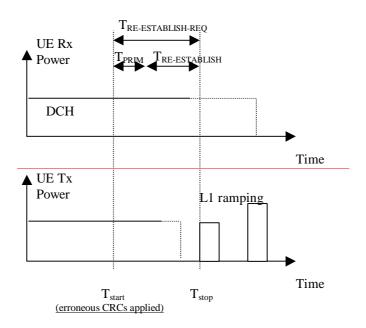
Figure 6.1: RRC Connection Re-establishment Requirement

RRC Re-establishment is correct if within $T_{RE-ESTABLISH-REQ}$ seconds the UE tries to re-establish the RRC connection with the target cell. $T_{RE-ESTABLISH-REQ}$ is defined in Table 6.2.

Table 6.2: Requirements for Intra Frequency RRC Re-establishment

	Target cell known by the UE	Target cell not known by the UE
Radio link failure timer T313=0 s	$T_{RE-ESTABLISH-REQ}$ = 1000 ms	$T_{RE-ESTABLISH-REQ}$ = 3200 ms
Radio link failure timer T313=3 s	$T_{RE-ESTABLISH-REQ}$ = 4000 ms	$T_{RE-ESTABLISH-REQ}$ = 6200 ms

NEXT CHANGED SECTION

A.6 RRC Connection Control

A.6.1 RRC Re-establishment delay

A.6.1.1 Test Purpose and Environment

The purpose is to verify that the RRC re-establishment delay is within the specified limits. These tests will verify the requirements in section 6.1.2.

The test parameters are given in Table A.6.1-A and Table A.6.1-B below. 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.

This test shall include 6 cells, one serving, one target and four steady interferes. The UE shall be in connected mode with a DL reference measurement channel 12.2 kbps dedicated traffic channel ongoing to one cell (serving cell). Measurement control information shall be signalled from the test device at least 5 seconds before T_{start}. At T_{start} faulty CRCs are applied on all transport blocks on all transport channels. T_{stop} is defined as the time when the UE starts to send preambles on PRACH to the target cell.

Unless explicitly stated the test parameters should be similar to the test parameters for Cell Reselection, time T1, sub-clause 4.3.1.1.1 System information shall be provided in the same manner as for the test for cell re-selection, sub-clause 4.3.1.1.1.

Table A.6.1-A General test parameters for RRC re-establishment delay, Test 1

Parameter	Unit	Value	Comment
DCH Parameters		DL Reference measurement channel 12.2 kbps	As specified in TS 25.101, section A.3.1
Power Control		On	
Active cell		Cell 1	
N313	Frames	20	
N315	Frames	20	
T313	Seconds	0	
Trep(3)	ms	1280	
Trep(5)	ms	1280	
Trep(6)	ms	1280	
Trep(7)	ms	1280	
Monitored cell list size		24	Monitored set shall only include intra frequency neighbours.
Cell 2 included in monitored set		Included	
Reporting frequency	Seconds	4	
T1		10	
T2		6	

Table A.6.1-B 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	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DCH_Ec/Ior	dB	-17	-Inf	Not applicable	
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941	
$\hat{I}_{or}/I_{oc}$	dB	2,39		4,39	
I_{oc}	dBm/ 3.84 MHz	-70			
CPICH_Ec/Io	dB	-15		-13	
Propagation Condition		AWGN			

Table A.6.1-C General test parameters for RRC re-establishment delay, Test 2

Parameter	Unit	Value	Comment
DCH Parameters		DL Reference measurement channel 12.2 kbps	As specified in TS 25.101, section A.3.1
Power Control		On	
Active cell		Cell 1	
N313	Frames	20	
N315	Frames	20	
T313	Seconds	0	
Trep(3)	ms	1280	
Trep(5)	ms	1280	
Trep(6)	ms	1280	

Trep(7)	ms	1280	
Monitored cell list size		24	Monitored set shall include 2 additional frequencies.
Cell 2 included in monitored set		Not Included	
Reporting frequency	Seconds	4	
T1		10	
T2		6	

Table A.6.1-D 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	
SCH_Ec/Ior	dB	-12		-12	
PICH_Ec/Ior	dB	-15		-15	
DCH_Ec/Ior	dB	-17	-Inf	Not applicable	
OCNS_Ec/Ior	dB	-1.049	-0.941	-0.941	
$\hat{I}_{or}/I_{oc}$	dB	-3,35		0,02	
I_{oc}	dBm/ 3.84 MHz	-70			
CPICH_Ec/Io	dB	-15		-13	
Propagation Condition		AWGN			

The following additional parameters are needed:

Table A.6-1: Test parameters for RRC connection re-establishment

Parameter	Unit	Value
DPCH_Ec/Ior	dB	–16.6
N313	Frames	20
N315	Frames	20
T313	seconds	0 and 3

A.6.1.1.1 Test 1 – Target Cell known by UE

All six cells in the test shall be given in the measurement control information to the UE before the test is started.

A.6.1.1.2 Test 2 – Target cell not known by UE

All cells except the target cell shall be in the measurement control information to the UE before the test is started.

A.6.1.2 Test Requirements

RRC Re-establishment is correct if within $T_{RE\text{-}ESTABLISH\text{-}REQ}$ seconds the UE tries to re-establish the RRC connection with the target cell. $T_{RE\text{-}ESTABLISH\text{-}REQ}$ is defined in Table 6.2.

Table A.6.2: Requirements for Intra Frequency RRC Re-establishment

	Test 1	Test 2

| Radio link failure timer T313=0 s | $T_{RE\text{-}ESTABLISH\ REQ} = 1000\ ms$ | $T_{RE\text{-}ESTABLISH\ REQ} = 3200\ ms$ |
| Radio link failure timer T313=3 s | $T_{RE\text{-}ESTABLISH\ REQ} = 4000\ ms$ | $T_{RE\text{-}ESTABLISH\ REQ} = 6200\ ms$ |

Test 1

RRC re-establishment delay shall be less than 1630 ms.

Test 2

RRC re-establishment delay shall be less than 6490 ms.

CR-Form-v3

CHANGE REQUEST

⌘   **25.133** CR **51**   ⌘ rev **-** ⌘   Current version: **3.3.0** ⌘

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

Title: ⌘	Event triggered reporting in AWGN conditions	
Source: ⌘	RAN WG4	
Work item code: ⌘		***Date:*** ⌘ 2000-11-03
Category: ⌘ **F**		***Release:*** ⌘ R99

Use one of the following categories:	*Use one of the following releases:*
F *(essential correction)*	*2* *(GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	*R96* *(Release 1996)*
B *(Addition of feature),*	*R97* *(Release 1997)*
C *(Functional modification of feature)*	*R98* *(Release 1998)*
D *(Editorial modification)*	*R99* *(Release 1999)*
Detailed explanations of the above categories can	*REL-4* *(Release 4)*
be found in 3GPP TR 21.900.	*REL-5* *(Release 5)*

Reason for change: ⌘	Align test parameters for test case in 25.133 section A.8.1.1 with the general requirements.	
Summary of change: ⌘	This CR aligns the test parameters in the test case in 25.133 section A.8.1.1 Event triggered reporting in AWGN propagation conditions with the general requirements regarding measurement reporting delay and measurement accuracy.	
Consequences if not approved: ⌘	The test case in A.8.1.1 will be incomplete.	

Clauses affected: ⌘	A.8.1.1		
Other specs affected: ⌘	☐ Other core specifications ⌘		
	☐ Test specifications		
	☐ O&M Specifications		
Other comments: ⌘			

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A.8.1.1   Event triggered reporting in AWGN propagation conditions

A.8.1.1.1   Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event and that the measurement accuracy of the CPICH_Ec/Io and SFN-CFN observed timed difference between Cell 1 and Cell 2 are within the defined limits. This test will partly verify the requirements in section 8.1.2 and 9.1.

The test parameters are given in Table A.8-1 and A.8-2 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used, and that CPICH Ec/Io and SFN-CFN observed timed difference shall be reported together with Event 1A. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. During time duration T1, the UE shall not have any timing information of cell 2.

Table A.8-1: General test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Active cell		Cell 1	
Reporting range~~Threshold~~	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24	Signalled during time T1.
T1	s	5	
T2	s	5	
T3	s	5	

Table A.8-2: Cell specific test parameters for Event triggered reporting in AWGN propagation conditions

Parameter	Unit	Cell 1			Cell 2		
		T1	T2	T3	T1	T2	T3
CPICH_Ec/Ior	~~D~~dB	-10			-10		
PCCPCH_Ec/Ior	~~D~~dB	-12			-12		
SCH_Ec/Ior	~~D~~dB	-12			-12		
PICH_Ec/Ior	~~D~~dB	-15			-15		
DPCH_Ec/Ior	~~D~~dB	-17			N/A ~~-17~~		
OCNS		-1.049			-0.941~~-1.049~~		
$\hat{I}_{or}/I_{oc}$	~~D~~dB	0	6.97	0	-Infinity	5.97	-Infinity
I_{oc}	~~D~~dBm /3.84 MHz	-70					
CPICH_Ec/Io	~~D~~dB	-13	-13	-13	-Infinity	-14	-Infinity
Propagation Condition		AWGN					

A.8.1.1.2   Test Requirements

The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 800 ms from the beginning of time period T2.

The UE shall send one Event 1B triggered measurement report, with a measurement reporting delay less than [TBD][50] 200 ms 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.

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CHANGE REQUEST

⌘　　**25.133** CR **52**　⌘ rev **-** ⌘ Current version: **3.3.0** ⌘

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

Title: ⌘	Inter frequency measurements in AWGN		
Source: ⌘	RAN WG4		
Work item code: ⌘		***Date:*** ⌘	2000-11-03
Category: ⌘ **F**		***Release:*** ⌘	R99

Use one of the following categories: 　***F*** *(essential correction)* 　***A*** *(corresponds to a correction in an earlier release)* 　***B*** *(Addition of feature),* 　***C*** *(Functional modification of feature)* 　***D*** *(Editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* 　*2　　(GSM Phase 2)* 　*R96　(Release 1996)* 　*R97　(Release 1997)* 　*R98　(Release 1998)* 　*R99　(Release 1999)* 　*REL-4　(Release 4)* 　*REL-5　(Release 5)*

Reason for change: ⌘	Align test parameters for test case in 25.133 section A.8.2.1 with the general requirements.
Summary of change: ⌘	This CR aligns the test parameters in the test case in 25.133 section A.8.2.1 Correct reporting of neighbours in AWGN propagation condition with the general requirements regarding measurement accuracy.
Consequences if not approved: ⌘	Inter-frequency event triggered reporting will not be tested correctly in 25.133.

Clauses affected: ⌘	A.8.2.1

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

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A.8.2 FDD inter frequency measurements

A.8.2.1 Correct reporting of neighbours in AWGN propagation condition

A.8.2.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event when doing inter frequency measurements. The test will partly verify the requirements in section 8.1.2.2.

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in Table A.8-10 and A.8-11 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A, 1B and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shallhas to be reported together with Event 2C reporting.

Table A.8-10: General test parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Compressed mode		A.22 set 1Case 2.1	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Threshold non used frequencyAbsolute Threshold (Ec/N0) for Event 2c	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting rangeThreshold	dB	43	Applicable for event 1A
Hysteresis	dB	0	
W		1	Applicable for event 1A
W non-used frequency		1	Applicable for event 2C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		Total 24 X on frequency Channel 2 24 on channel 1 16 on channel 2	Measurement control information is sent before the compressed mode pattern starts.
T1	s	[10]	
T2	s	[5]	

TableA.8-11: Cell Specific parameters for Correct reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1		Cell 2		Cell 3	
		T1	T2	T1	T2	T1	T2
UTRA RF Channel Number		Channel 1		Channel 1		Channel 2	
CPICH_Ec/Ior	DdB	-10		-10		-10	
PCCPCH_Ec/Ior	DdB	-12		-12		-12	
SCH_Ec/Ior	DdB	-12		-12		-12	
PICH_Ec/Ior	DdB	-15		-15		-15	
DPCH_Ec/Ior	DdB	-17TBD		N/ATBD		N/ATBD	
OCNS		-1.049[To Be Calculated]		-0.941[To Be Calculated]		-0,941[To Be Calculated]	
$\hat{I}_{or}/I_{oc}$	DdB	0	4.39	-Infinity- ∞	2.39	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/Io	DdB	-13	-13	-Infinity- ∞	-15	-14	-14
Propagation Condition	AWGN						

A.8.2.1.2   Test Requirements

~~The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 800 ms from the beginning of time period T2.~~

The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 5 seconds from the beginning of time period T1.

The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 800 ms from the beginning of time period T2.

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

CR-Form-v3

CHANGE REQUEST

| ⌘ | **25.133** CR **53** | ⌘ rev | **-** | ⌘ | Current version: | **3.3.0** | ⌘ |

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

Title:	⌘	Physical channel BER accuracy		
Source:	⌘	RAN WG4		
Work item code: ⌘			**Date:** ⌘	2000-11-03
Category:	⌘	**F**	**Release:** ⌘	R99

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

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

Reason for change:	⌘	In 25.133 it is unclear for which conditions the accuracy requirements for Physical Channel BER are valid. Currently it is stated that the accuracy requirement is +/-10% and no upper limit for the accuracy requirement is given. This CR proposes clarifications to the accuracy requirement of the Physical chennl BER measurement.
Summary of change: ⌘		Clarifications to the accuracy requirement of the Physical channel BER measurement.
Consequences if not approved:	⌘	The accuracy requirement for the UTRAN Physical channel BER will be incomplete.

Clauses affected:	⌘	9.2.7

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

Other comments:	⌘	

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3)	With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

9.2.7   Physical channel BER

The measurement period shall be equal to the TTI of the transport channel, to which the Physical channel BER is associated via the IE QE-Selector, see TS 25.433 section 9.2.2.58 QE-Selector. Each reported Physical channel BER measurement shall be an estimate of the BER averaged over one measurement period only.

9.2.7.1   Accuracy requirement

The average of consecutive Physical channel BER measurements is required to fulfil the accuracy stated in table 9-46 if the total number of erroneous bits during these measurements is at least 500 and the absolute BER value for each of the measurements is within the range given in table 9-46.

Table 9-46

Parameter	Unit	Accuracy [% of absolute BER value]	Conditions
			Range
PhyBER	-	+/- 10%	for absolute BER value ≤ 30%

CR-Form-v3

CHANGE REQUEST

⌘   **25.133** CR **54**   ⌘ rev **-** ⌘ Current version: **3.3.0** ⌘

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

Title:	⌘	Event triggered reporting in fading conditions	
Source:	⌘	RAN WG4	
Work item code:	⌘		***Date:*** ⌘ 2000-11-09
Category:	⌘ **F**		***Release:*** ⌘ R99

Use <u>one</u> of the following categories:
   F *(essential correction)*
   A *(corresponds to a correction in an earlier release)*
   B *(Addition of feature),*
   C *(Functional modification of feature)*
   D *(Editorial modification)*
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

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

Reason for change:	⌘	To verify that the UE performs sufficient averaging of the intra-frequency CPICH Ec/Io measurements.
Summary of change:	⌘	The test case in 25.133 section A.8.1.3 is updated to ensure that the UE performs sufficient averaging of the intra-frequency CPICH Ec/Io measurements in a fading environment.
Consequences if not approved:	⌘	The requirement that the CPICH Ec/Io intra-frequency measurement shall be averaged over one measurement period will not be verified.

Clauses affected:	⌘	

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

Other comments:	⌘	

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3)   With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

A.8.1.3 Correct reporting of neighbours in fading propagation condition

A.8.1.3.1 Test Purpose and Environment

The purpose of this test is to verify that the UE ~~makes~~ performs sufficient layer 1 filtering of the measurements, see section 9.1, which are the base for the event evaluation. The test is performed ~~correct reporting of an event~~ in ~~a~~ fading propagation condition~~s~~. This test will partly verify the requirements in section 8.1.2.

The test parameters are given in Table A.8-6 and A.8-7.In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and Event 1B shall be used. The test consists of two successive time periods, each with a time duration of T1 and T2 respectively.
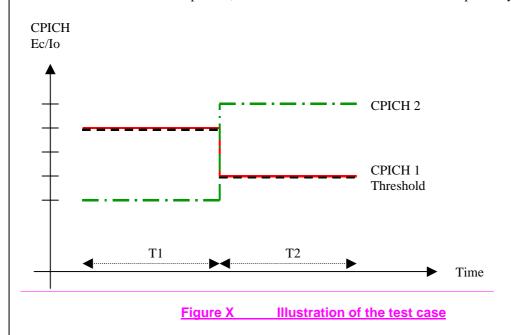

Figure X   Illustration of the test case

Table A.8-6: 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 25.101 section A.3.1
Power Control		On	
Active cell		Cell 1	
Reporting ~~range~~Threshold	dB	0~~3~~	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		24	Signalled ~~during~~before time T1.
T1	s	[200]	
T2	s	[200]	

Table A.8-7: Cell specific test parameters for correct reporting of neighbours in fading propagation condition

Parameter	Unit	Cell 1		Cell 2	
		T1	**T2**	**T1**	**T2**
CPICH_Ec/Ior	~~D~~dB	-10		-10	
PCCPCH_Ec/Ior	~~D~~dB	-12		-12	
SCH_Ec/Ior	~~D~~dB	-12		-12	
PICH_Ec/Ior	~~D~~dB	-15		-15	
DPCH_Ec/Ior	~~D~~dB	-17~~TBD~~		N/A~~TBD~~	
OCNS		-1.386~~[To Be Calculated]~~		-1.286~~[To Be Calculated]~~	
$\hat{I}_{or}/I_{oc}$	~~D~~dB	3.06~~0~~	7.77~~6.97~~	0.06~~ Infinity~~	10.77~~5.97~~
I_{oc}	~~D~~dBm/3.84 MHz	-70			
CPICH_Ec/Io	~~D~~dB	-13	-1~~5~~3	-~~16~~Infinity	-1~~2~~4
Propagation Condition	Case 5 as specified in Annex B of TS25.101				

A.8.1.3.2 Test Requirements

~~The during T1 accumulated time where cell 2 is reported to be within the reporting range shall not exceed [20]% of the total time T1.~~

~~The during T2 accumulated time where cell 2 is reported to be outside the reporting range shall not exceed [20]% of the total time T2.~~

~~The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 800 ms 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.~~

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CHANGE REQUEST

| ⌘ | **25.133** CR **55** | ⌘ rev | **-** | ⌘ | Current version: | **3.3.0** | ⌘ |

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

Title: ⌘	Periodic reporting in AWGN	
Source: ⌘	RAN WG4	
Work item code: ⌘		**Date:** ⌘ 2000-11-03
Category: ⌘ **F**		**Release:** ⌘ R99

Use <u>one</u> of the following categories:
F (essential correction)
A (corresponds to a correction in an earlier release)
B (Addition of feature),
C (Functional modification of feature)
D (Editorial modification)
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

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

Reason for change: ⌘	The issues that are tested in section A.8.1.4 is already covered in other tests and therefore the test case is not needed
Summary of change: ⌘	Section A.8.1.4 is proposed to be removed from 25.133.
Consequences if not approved: ⌘	The test case in section A.8.1.4 will be incomplete.

Clauses affected: ⌘	A.8.1.4
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	

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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3)   With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

A.8.1.4 CPICH_Ec/Io measurement accuracy and incorrect reporting of neighbours in AWGN propagation condition

A.8.1.4.1 Test Purpose and Environment

The purpose of this test is to verify the UE measurement accuracy of CPICH_Ec/Io and that the UE does not send any measurement reports when the reporting criteria is not fulfilled. This test will partly verify the requirements in section 8.1.2 and section 9.1.

The UE measurement accuracy of CPICH_Ec/Io is derived by using the periodical reporting of the active cell's measured CPICH_Ec/Io. The UE false detection resistance is derived by monitoring the amount of false triggered Event 1A measurement reports. The test parameters are given in Table A.8-8 and A.8-9. In the measurement control information it is indicated to the UE that the CPICH_Ec/Io level of the active set cell shall be reported periodically and that event-triggered reporting with Event 1A shall be used.

Table A.8-8: General test parameters for CPICH_Ec/Io measurement accuracy and incorrect reporting of neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Active cell		Cell 1	
Reporting Threshold	dB	3	
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Reporting period	ms	TBD	
Monitored cell list size		24	

Table A.8-9: Cell specific test parameters for CPICH_Ec/Io measurement accuracy and incorrect reporting of neighbours in AWGN propagation condition

Parameter	Unit	Cell 1	Cell 2
CPICH_Ec/Ior	DB	-10	-10
PCCPCH_Ec/Ior	DB	-12	-12
SCH_Ec/Ior	DB	-12	-12
PICH_Ec/Ior	DB	-15	-15
DPCH_Ec/Ior	DB	TBD	TBD
OCNS		[To Be Calculated]	[To Be Calculated]
$\hat{I}_{or}/I_{oc}$	DB	1.68	-3.32
I_{oc}	DBm/3.84 MHz	-70	
CPICH_Ec/Io	DB	-13	-18
Propagation Condition	AWGN		

A.8.1.4.2 Test Requirements

The measurement reports shall have an accuracy according to section 9.

The UE shall not send any Event 1A triggered measurement reports.

CR-Form-v3

CHANGE REQUEST

⌘   **25.133** CR **56**   ⌘ rev **-** ⌘ Current version: **3.3.0** ⌘

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

Title: ⌘	Introduction of UE Rx-Tx time difference type 1 & 2	
Source: ⌘	RAN WG4	
Work item code: ⌘		***Date:*** ⌘ 2000-11-13
Category: ⌘ **F**		***Release:*** ⌘ R99

Use one of the following categories:	*Use one of the following releases:*
F *(essential correction)*	*2 (GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	*R96 (Release 1996)*
B *(Addition of feature),*	*R97 (Release 1997)*
C *(Functional modification of feature)*	*R98 (Release 1998)*
D *(Editorial modification)*	*R99 (Release 1999)*
Detailed explanations of the above categories can	*REL-4 (Release 4)*
be found in 3GPP TR 21.900.	*REL-5 (Release 5)*

Reason for change: ⌘	Alignment with decision in TSG-RAN WG1 (R1-001318), correction of measurement period and interference levels
Summary of change: ⌘	Addition of type 2 UE Rx-Tx time difference measurement for LCS purposes as agreed by RAN WG1 and RAN WG4; measurement period is not necessary since the measured quantity is not an average; error in calculation of interference levels corrected (the existing values were based on two cells)
Consequences if not approved: ⌘	Inconsistency of RAN WG1 and RAN WG4 specifications, wrong time references used for DL timing setup, incorrect measurement period and incorrect test conditions with regards to interference levels

Clauses affected: ⌘	9.1.9, A.9.1.6

Other specs	⌘ ☐	Other core specifications ⌘	
Affected:	**X**	Test specifications	34.121
	☐	O&M Specifications	

Other comments: ⌘	

9.1.9 UE Rx-Tx time difference

9.1.9.1 UE Rx-Tx time difference type 1

Note: This measurement is used for call set up purposes to compensate propagation delay of DL and UL.

The measurement period in CELL_DCH state is [100 ms]

9.1.9.1.1 Measurement requirement

Table 9-24

Parameter	Unit	Accuracy [chip]	Conditions
			Io [dBm]
UE RX-TX time difference	Chip	± 1.5	-94...-50

9.1.9.1.2 UE Rx-Tx time difference type 1 measurement report mapping

The reporting range is for *UE Rx-Tx time difference type 1* is from 768 ... 1280 chip.
In table 9-25 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9-25

Reported value	Measured quantity value	Unit
RX-TX_TIME _0000	UE Rx-Tx Time difference type 1 < 768.000	chip
RX-TX_TIME _0001	768.000 ≤ UE Rx-Tx Time difference type 1 < 768.0625	chip
RX-TX_TIME _0002	768.0625 ≤ UE Rx-Tx Time difference type 1 < 768.1250	chip
RX-TX_TIME _0003	768.1250 ≤ UE Rx-Tx Time difference type 1 < 768.1875	chip
…	…	…
RX-TX_TIME _8190	1279.8125 ≤ UE Rx-Tx Time difference type 1 < 1279.8750	chip
RX-TX_TIME _8191	1279.8750 ≤ UE Rx-Tx Time difference type 1 < 1279.9375	chip
RX-TX_TIME _8192	1279.9375 ≤ UE Rx-Tx Time difference type 1 < 1280.0000	chip
RX-TX_TIME _8193	1280.0000 ≤ UE Rx-Tx Time difference type 1	chip

9.1.9.2 UE Rx-Tx time difference type 2

Note: This measurement is used for LCS purposes.

It is optional for a terminal to support a subset of LCS methods. This measurement represents an instantaneous value that is time stamped as defined in the IE description in 25.331 [16].

9.1.9.2.1 Measurement requirement

Table 9-26

Parameter	Unit	Accuracy [chip]	Conditions
			Io [dBm]
UE RX-TX time difference	chip	± TBD	-94...-50

9.1.9.2.2 UE Rx-Tx time difference type 2 measurement report mapping

The reporting range is for *UE Rx-Tx time difference type2* is from 768 ... 1280 chip.
In table 9-27 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9-27

Reported value	Measured quantity value	Unit
RX-TX_TIME_0000	UE Rx-Tx Time difference type 2 < 768.000	chip
RX-TX_TIME_0001	$768.000 \leq$ UE Rx-Tx Time difference type 2 < 768.0625	chip
RX-TX_TIME_0002	$768.0625 \leq$ UE Rx-Tx Time difference type 2 < 768.1250	chip
RX-TX_TIME_0003	$768.1250 \leq$ UE Rx-Tx Time difference type 2 < 768.1875	chip
…	…	…
RX-TX_TIME_8190	$1279.8125 \leq$ UE Rx-Tx Time difference type 2 < 1279.8750	chip
RX-TX_TIME_8191	$1279.8750 \leq$ UE Rx-Tx Time difference type 2 < 1279.9375	chip
RX-TX_TIME_8192	$1279.9375 \leq$ UE Rx-Tx Time difference type 2 < 1280.0000	chip
RX-TX_TIME_8193	$1280.0000 \leq$ UE Rx-Tx Time difference type 2	chip

A.9.1.6   UE Rx-Tx time difference

A.9.1.6.1   UE Rx-Tx time difference type 1

A.9.1.6.1.1   Test Purpose and Environment

The purpose of this test is to verify that the UE Rx-Tx time difference type 1 measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.9.1.

Table A.9-11 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table A.9-11: UE Rx-Tx time difference type 1 intra frequency test parameters

Parameter	Unit	Cell 1
UTRA RF Channel number		Channel 1
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DPCH_Ec/Ior	dB	-15
OCNS	dB	-1.11
Îor/Ioc	dB	10.5
Ioc	dBm/ 3.84 MHz	*Io* ~~-13.7~~ –10.9 *dB = Ioc,* Note 1
~~*Range 1:Io*~~ ~~*Range 2:*~~ *Io*	dBm/ 3.84 MHz	~~-94…-70~~ -94…-50
Propagation condition	-	AWGN

NOTE 1: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Îor/Ioc*.

A.9.1.6.1.2   Test Requirements

The UE Rx-Tx time difference type 1 measurement accuracy shall meet the requirements in section 9.1.9.1.

A.9.1.6.2   UE Rx-Tx time difference type 2

A.9.1.6.2.1   Test Purpose and Environment

The purpose of this test is to verify that the UE Rx-Tx time difference type 2 measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.9.2.

Table A.9-12 defines the limits of signal strengths and code powers, where the requirements are applicable.

Table A.9-12: UE Rx-Tx time difference type 2 intra frequency test parameters

Parameter	Unit	Cell 1
UTRA RF Channel number		Channel 1
CPICH_Ec/Ior	dB	-10
PCCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DPCH_Ec/Ior	dB	-15
OCNS	dB	-1.11
$\hat{I}or/Ioc$	dB	10.5
Ioc	dBm/ 3.84 MHz	$Io -10.9\ dB = Ioc,$ Note 1
Io	dBm/ 3.84 MHz	-94…-50
Propagation condition	-	AWGN

NOTE 1: *Ioc* level shall be adjusted according the total signal power *Io* at receiver input and the geometry factor *Îor/Ioc*.

A.9.1.6.2.2   Test Requirements

The UE Rx-Tx time difference type 2 measurement accuracy shall meet the requirements in section 9.1.9.2.

CR-Form-v3

CHANGE REQUEST

⌘　　**25.133** CR **57**　　⌘ rev **-** ⌘　Current version: **3.3.0** ⌘

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

Title:	⌘	Correction of UE Tx timing adjustment
Source:	⌘	RAN WG4

Work item code: ⌘			***Date:*** ⌘	2000-11-13

Category:	⌘	**F**	***Release:*** ⌘	R99

Use one of the following categories:　　　　　　　*Use one of the following releases:*
F (essential correction)　　　　　　　　　　*2*　　*(GSM Phase 2)*
A (corresponds to a correction in an earlier release)　*R96*　*(Release 1996)*
B (Addition of feature),　　　　　　　　　　*R97*　*(Release 1997)*
C (Functional modification of feature)　　　　　*R98*　*(Release 1998)*
D (Editorial modification)　　　　　　　　　*R99*　*(Release 1999)*
Detailed explanations of the above categories can　*REL-4*　*(Release 4)*
be found in 3GPP TR 21.900.　　　　　　　　*REL-5*　*(Release 5)*

Reason for change: ⌘		Correction of test conditions for UE Tx timing adjustment
Summary of change: ⌘		Correction of the sequence of events in the test conditions for the test on UE Tx timing adjustment, addition of a step to test correct behaviour when a new cell is added to the active set, which is received earlier than the existing one
Consequences if not approved: ⌘		Incomplete test on UE Tx timing adjustment

Clauses affected:	⌘	A.7.1

Other specs Affected:	⌘	☐	Other core specifications	⌘
		X	Test specifications	34.121
		☐	O&M Specifications	

Other comments:	⌘	

A.7.1 UE Transmit Timing

A.7.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE initial transmit timing accuracy, maximum amount of timing change in one adjustment, minimum and maximum adjustment rate are within the specified limits. This test will verify the requirements in section 7.1.2.

For this test two cells on the same frequency are used. Table A.7-1 defines the transmitted signal strengths, the relative timing and the propagation condition used for the two cells.

Table A.7-1: Test parameters for UE Transmit Timing requirement

Parameter	Unit	level
DPCH_Ec/ Ior, Cell 1 and Cell 2	dB	-17
CPICH_Ec/ Ior, Cell 1 and Cell 2	dB	-10
PCCPH_Ec/ Ior, Cell 1 and Cell 2	dB	-12
SCH_Ec/ Ior, Cell 1 and Cell 2	dB	-12
PICH_Ec/ Ior, Cell 1 and Cell 2	dB	-15
OCNS_Ec/ Ior, Cell 1 and Cell 2	dB	-1.05
$\hat{I}_{or,}$ Cell 1	dBm/3.84 MHz	-96
$\hat{I}_{or,}$ Cell 2	dBm/3.84 MHz	-99
Information data rate	kbps	12.2
Relative delay of path received from cell 2 with respect to cell 1	µs	+/- 2
Propagation condition	AWGN	

A.7.1.2 Test Requirements

For parameters specified in Table A.7-1, the UE initial transmit timing accuracy, the maximum amount of timing change in one adjustment, the minimum and the maximum adjustment rate shall be within the limits defined in section 7.1.2.

The relevant soft handover parameters shall be set such that the UE enters soft handover with cell 1 and cell 2 when both cells are sending a signal. The following sequence of events shall be used to verify that the requirements are met.

a) After a connection is set up with cell 1, the test system shall verify that the UE transmit timing offset is within T_0 +/- 1.5 chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1. T_0 is defined in [2].

b) Test system introduces cell 2 into the test system at delay +2 µs from cell 1.

c) Test system verifies that cell 2 is added to the active set.

d) Test system shall verify that the UE transmit timing offset is still within T_0 +/- 1.5 chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

e) Test system switches Tx timing of cell 2 to a delay of -2 µs with respect to cell 1.

f) Test system verifies cell 2 remains in the active set.

g) Test system shall verify that the UE transmit timing offset is still within T_0 +/- 1.5 chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

e)h) Test system stops sending cell 1 signals.

f)i) Test system verifies that UE transmit timing adjustment starts with an adjustment step size and an adjustment rate according to the requirements in section 7.1.2 until the UE transmit timing offset is

within T_0 +/- 1.5 chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.

g)j) Test system shall verify that the UE transmit timing offset stays within T_0 +/- 1.5 chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 2.

h)k) Test system starts sending cell 1 signal again with its original timing.

i)l) Test system verifies that cell 1 is added to the active set.

j)m) Test system stops sending cell 2 signals.

k)n) Test system verifies that UE transmit timing adjustment starts with an adjustment step size and an adjustment rate according to the requirements in section 7.1.2 until the UE transmit timing offset is within T_0 +/- 1.5 chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

l)o) Test system shall verify that the UE transmit timing offset stays within T_0 +/- 1.5 chips with respect to the first significant received path of the downlink DPCCH/DPDCH of cell 1.

<table>
<tr><td colspan="3" align="right">*CR-Form-v3*</td></tr>
</table>

	CHANGE REQUEST	

⌘	**25.133** CR **58**	⌘ rev	**-**	⌘	Current version:	**3.3.0**	⌘

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

Title:	⌘	Alignment of intra frequency CPICH Ec/Io measurement requirements in TS25.133
Source:	⌘	RAN WG4

Work item code:	⌘		*Date:* ⌘	2000-11-10

Category:	⌘	**F**		*Release:* ⌘	R99

Use <u>one</u> of the following categories:
    F *(essential correction)*
    A *(corresponds to a correction in an earlier release)*
    B *(Addition of feature),*
    C *(Functional modification of feature)*
    D *(Editorial modification)*
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

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

Reason for change:	⌘	This CR proposes a change for UE measurement accuracy requirements to improve the UE event triggering performance
Summary of change:	⌘	The measurement accuracy of intra frequency CPICH Ec/Io is modified to improve the UE ability to behave correctly in case of absolute treshold reporting criteria.
Consequences if not approved:	⌘	The amount of erroneous reporting would increase in the system, and hence decrease capacity.

Clauses affected:	⌘	9.1.2.1.1

Other specs affected:	⌘	☐ Other core specifications	⌘	
		X Test specifications		34.121
		☐ O&M Specifications		

Other comments:	⌘	

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downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

9.1.2 CPICH Ec/Io

Note: This measurement is for Cell selection/re-selection and for handover evaluation.

9.1.2.1 Intra frequency measurements accuracy

The measurement period for CELL_DCH state can be found in sub clause 8.1.2.1.

9.1.2.1.1 Absolute accuracy requirement

The accuracy requirements in table 9-5 are valid under the following conditions:

- $CPICH\_RSCP1 \geq$ -114 dBm.

- $$\left. \frac{I_o}{\left(\hat{I}_{or} \right)} \right|_{in\ dB} - \left(\frac{CPICH\_E_c}{I_{or}} \right)_{in\ dB} \leq 20 dB$$

- $$\left. \frac{I_o}{\left(\hat{I}_{or} \right)} \right|_{in\ dB} - \left(\frac{SCH\_E_c}{I_{or}} \right)_{in\ dB} \leq X dB$$

Table 9-5: CPICH_Ec/Io Intra frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions Io [dBm]
		Normal condition	Extreme condition	
CPICH_Ec/Io	dB	$\pm$ 1.5 for -14 $\leq$ CPICH Ec/Io $\pm$ 2 for -16 $\leq$ CPICH Ec/Io < -14 $\pm$ 3 for -20 $\leq$ CPICH Ec/Io < -16 $\pm$ 4	$\pm$ 4 $\pm$ 3	-94...-50

9.1.2.1.2 Relative accuracy requirement

The relative accuracy of CPICH Ec/Io is defined as the CPICH Ec/Io measured from one cell compared to the CPICH Ec/Io measured from another cell on the same frequency.

The accuracy requirements in table 9-6 are valid under the following conditions:

- $CPICH\_RSCP1,2 \geq$ -114 dBm.

- $$\left| CPICH\_RSCP1 \right|_{in\ dB} - CPICH\_RSCP2 \Big|_{in\ dB} \Big| \leq 20 dB$$

- $$\left. \frac{I_o}{\left(\hat{I}_{or} \right)} \right|_{in\ dB} - \left(\frac{CPICH\_E_c}{I_{or}} \right)_{in\ dB} \leq 20 dB$$

- $$\left. \frac{I_o}{\left(\hat{I}_{or} \right)} \right|_{in\ dB} - \left(\frac{SCH\_E_c}{I_{or}} \right)_{in\ dB} \leq X dB$$

Table 9-6: CPICH_Ec/Io Intra frequency relative accuracy

| Parameter | Unit | Accuracy [dB] | | Conditions |
		Normal condition	Extreme condition	Io [dBm]
CPICH_Ec/Io	dB	$\pm$ 1.5 for -14 $\leq$ CPICH Ec/Io $\pm$ 2 for -16 $\leq$ CPICH Ec/Io < -14 $\pm$ 3 for -20 $\leq$ CPICH Ec/Io < -16	$\pm$ 3	-94...-50

CR-Form-v3

CHANGE REQUEST

| ⌘ | **25.133** CR **59** | ⌘ rev **-** ⌘ Current version: | **3.3.0** ⌘ |

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

Title: ⌘	Multiple neighbour test cases	
Source: ⌘	RAN WG4	
Work item code: ⌘		***Date:*** ⌘ 17 Nov 2000
Category: ⌘ **F**		***Release:*** ⌘ R99

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

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

Reason for change: ⌘	The CR updates the multiple neighbour test case to reflect the general requirements and includes the second test case of Tdoc R4-000661, which has been agreed to be added.
Summary of change: ⌘	The CR updates the multiple neighbour test case to reflect the general requirements and includes the second test case of Tdoc R4-000661, which has been agreed to be added.
Consequences if not approved: ⌘	The general performance requirements are not verified and the test cases are not complete.

Clauses affected: ⌘	A.8.1.2, A.8.1.2.1, A.8.1.2.2, A.8.1.3, A.8.1.3.1 and A.8.1.3.2
Other specs affected: ⌘	☐ Other core specifications ⌘ **X** Test specifications ☐ O&M Specifications
Other comments: ⌘	

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downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change reques

A.8.1.2　Event triggered reporting of multiple neighbours in AWGN propagation condition

A.8.1.2.1　Test Purpose and Environment

Editors note: Both test cases in Tdoc R4 00 0661 have been agreed for inclusion. They should however be updated to reflect the general requirement in section 8.1.2 regarding appearing and disappearing cells.

The purpose of this test is to verify that the UE makes correct reporting of an events. and that the measurement accuracy of the reported values are within the specified limits. This test will partly verify the requirements in section 8.1.2 and 9.1.

The test parameters are given in Table A.8-3, and A.8-4 and A.8-5. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1C and 1B shall be used, and that CPICH Ec/Io and SFN-CFN observed time difference shall be reported. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively..

Table A.8-3: General test parameters for Event triggered reporting of multiple neighbours in AWGN propagation conditions

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Active cell		Cell 1	
Reporting rangeThreshold	DdB	3	Applicable for event 1A and 1B
Hysteresis	DdB	0	
W		1	Applicable for event 1A and 1B
Replacement activation threshold		0	Applicable for event 1C
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	Ms	0	
Filter coefficient		0	
Monitored cell list size		32	
T1	S	10>20	
T2	S	10	
T3	S	514	
T4	S	10	

Table A.8-4: Cell specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2				Cell3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/Ior	dB	-10				-10				-10			
PCCPCH_Ec/Ior	dB	-12				-12				-12			
SCH_Ec/Ior	dB	-12				-12				-12			
PICH_Ec/Ior	dB	-15				-15				-15			
DPCH_Ec/Ior	dB	-17				N/A				N/A			
OCNS_Ec/Ior	dB	-1.049				-0.941				-0.941			
$\hat{I}_{or}/I_{oc}$	dB	6.97	7,72	5,97	7,72	-Inf	9,72	6,97	9,72	5.97	6,72	-Inf	6,72
I_{oc}	dBm/ 3.84 MHz	-85											
CPICH_Ec/Io	dB	-13	-15.5	-14	-15.5	-Inf	-13.5	-13	-13.5	-14	-16.5	-Inf	-16.5
Propagation Condition	AWGN												

Parameter	Unit	Cell 1				Cell 2			
		T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/Ior	DB	-10				-10			
PCCPCH_Ec/Ior	DB	-12				-12			
SCH_Ec/Ior	DB	-12				-12			
PICH_Ec/Ior	DB	-15				-15			
DPCH_Ec/Ior	DB	-17				-17			
OCNS_Ec/Ior	DB	-1.049				-1.049			
$\hat{I}_{or}/I_{oc}$	DB	18.5				17			
I_{oc}	DBm/3.84 MHz	-85							
CPICH_Ec/Io	DB	-12.4	-15.5	-12.4	-15.5	-13.9	-17.0	-13.9	-17.0
Propagation Condition	AWGN								

Table A.8-5: Cell Specific test parameters for Event triggered reporting of multiple neighbours in AWGN propagation condition

Parameter	Unit	Cell 3				Cell 4			
		T1	T2	T3	T4	T1	T2	T3	T4
CPICH_Ec/Ior	DB	-10				-10			
PCCPCH_Ec/Ior	DB	-12				-12			
SCH_Ec/Ior	DB	-15				-15			
PICH_Ec/Ior	DB	-15				-15			
DPCH_Ec/Ior	DB	N/A				N/A			
OCNS	DB	-0.941				-0.941			
$\hat{I}_{or}/I_{oc}$	DB	-Inf	18.5	-Inf	18.5	-Inf	17.5	-Inf	17.5
I_{oc}	DBm/3.84 MHz	-85							
CPICH_Ec/Io	DB	-Inf	-15.5	-Inf	-15.5	-Inf	-16.5	-Inf	-16.5
Propagation Condition	AWGN								

A.8.1.2.2　Test Requirements

The UE shall send one Event 1C triggered measurement report, with a measurement reporting delay less than 800 ms from the beginning of time period T2.

The UE shall send one Event 1B triggered measurement report, with a measurement reporting delay less than [200150] ms from the beginning of time period T3.

The UE shall send one Event 1C triggered measurement report, with a measurement reporting delay less than 200150 ms from the beginning of time period T4.

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

A.8.1.3　Event triggered reporting of two detectable neighbours in AWGN propagation condition

A.8.1.3.1　　Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of events. This test will partly verify the requirements in section 8.1.2 and 9.1.

The test parameters are given in Table A.8-5 and A.8-6. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 1B shall be used. The test consists of four successive time periods, with a time duration of T1, T2, T3 and T4 respectively.

Table A.8-5: General test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Active cell		Cell 1	
Reporting range	dB	3	Applicable for event 1A and 1B
Hysteresis	dB	0	
W		1	Applicable for event 1A and 1B
Reporting deactivation threshold		0	Applicable for event 1A
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		32	
T1	s	10	
T2	s	10	
T3	s	10	
T4	s	10	

Table A.8-6: Cell specific test parameters for Event triggered reporting of two detectable neighbours in AWGN propagation condition

Parameter	Unit	Cell 1				Cell 2				Cell3			
		T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
$CPICH\_Ec/Ior$	dB	-10				-10				-10			
$PCCPCH\_Ec/Ior$	dB	-12				-12				-12			
SCH_Ec/Ior	dB	-12				-12				-12			
$PICH\_Ec/Ior$	dB	-15				-15				-15			
$DPCH\_Ec/Ior$	dB	-17				N/A				N/A			
$OCNS\_Ec/Ior$	dB	-1.049				-0.941				-0.941			
$\hat{I}_{or}/I_{oc}$	dB	8.36	11.83	14.45	7.89	3.36	11.33	13.95	2.39	3.36	6.33	13.95	6.89
I_{oc}	dBm/ 3.84 MHz	-85											
$CPICH\_Ec/Io$	dB	-12.5	-13.5	-14.5	-13.5	-17.5	-14.0	-15	-19	-17.5	-19	-15	-14.5
Propagation Condition	AWGN												

A.8.1.3.2　　Test Requirements

The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 200 ms from the beginning of time period T2.

The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 200 ms from the beginning of time period T3.

The UE shall send one Event 1B triggered measurement report, with a measurement reporting delay less than 200 ms from the beginning of time period T4.

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

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CHANGE REQUEST

⌘ | **25.133** CR **60** | ⌘ rev | **-** | ⌘ | Current version: | **3.3.0** | ⌘

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

Title: ⌘	Correction of intra- and inter frequency measurement requirement.	
Source: ⌘	RAN WG4	
Work item code: ⌘		***Date:*** ⌘ 13-17 nov
Category: ⌘ **F**		***Release:*** ⌘ R99

Use <u>one</u> of the following categories:
F *(essential correction)*
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B *(Addition of feature),*
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Detailed explanations of the above categories can be found in 3GPP TR 21.900.

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

Reason for change: ⌘	Currently equations in clause 8.1.2.1 and 8.1.2.2 contains unit names inside the equations and the equations are also place in non-correct place. There are also a need for a minor clarifications in 8.1.2.1.2 and 8.1.2.1.5
Summary of change: ⌘	Two minor clarifications and some small editorial changes in the equations.
Consequences if not approved: ⌘	

Clauses affected: ⌘	8.1.2.1, 8.1.2.2

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

Other comments: ⌘	

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8 UE Measurements Procedures

8.1 Measurements in CELL_DCH State

8.1.1 Introduction

This section contains requirements on the UE regarding measurement reporting in CELL_DCH state. The requirements are split in FDD intra frequency, FDD inter frequency, TDD and GSM measurements. These measurements may be used by the UTRAN, e.g. for handover decisions. The measurements are defined in TS 25.215, the measurement model is defined in TS 25.302 and measurement accuracies are specified in section 9. Control of measurement reporting is specified in TS 25.331 and parallel measurements are specified in section 8.2. Compressed mode is specified in TS 25.215.

8.1.2 Requirements

8.1.2.1 FDD intra frequency measurements

During the CELL_DCH state the UE shall continuously measure detected intra frequency cells and search for new intra frequency cells in the monitoring set. In case the network requests the UE to report unlisted cells, the UE shall also search for intra frequency cells outside the monitored set. If a compressed mode pattern sequences areis activated, intra frequency measurements can be performed between the transmission gaps simultaneously for data reception from the active set cell/s.

8.1.2.1.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within
8.1.2.1.2 UE CPICH measurement capability

$$T_{identify\ intra} = Max\left\{[800]ms, T_{basic\ identify\ FDD,\ intra} \cdot \frac{T_{Measurement\ Period,\ Intra}}{T_{Intra}}\right\}$$

$$T_{identify\ intra} = Max\left\{800, T_{basic\ identify\ FDD,\ intra} \cdot \frac{T_{Measurement\ Period,\ Intra}}{T_{Intra}}\right\}ms$$

8.1.2.1.2 UE CPICH measurement capability

In the CELL_DCH state the measurement period for intra frequency measurements is [200] ms. When no transmission gap pattern sequence is activated, the UE shall be capable of performing CPICH measurements for [8] 8detected intra-frequency cells and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of [200] 200ms. When one or more transmission gap pattern sequences are activated, the UE shall be capable of performing CPICH measurements for the $Y_{measurement\ intra}$ strongest cells , where $Y_{measurement\ intra}$ is defined in the following equation, as many detected intra-frequency cells as defined in the following equation. The

$$Y_{measurement\ intra} = Floor\left\{X_{basic\ measurement\ FDD} \cdot \frac{T_{Intra}}{T_{Measurement\ Period,\ Intra}}\right\}$$

measurement accuracy for all measured cells shall be as specified in the sub-clause 9.s.t 1.1and 9.p.q1.2.

$$Y_{measurement\ intra} = Floor\left\{X_{basic\ measurement\ FDD} \cdot \frac{T_{Intra}}{T_{Measurement\ Period,\ Intra}}\right\}$$

$X_{basic\ measurement\ FDD}$ = [8] 8

$T_{Measurement\_Period\ Intra}$ = [200] 200 ms. The measurement period for Intra frequency CPICH measurements.

T_{Intra} : This is the minimum time that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing.

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

Note: It is still under consideration how to incorporate a time needed for adjusting asynchronous timing between intra and inter frequency measurement periods and UE HW settling time into the equations.

8.1.2.1.3 Periodic Reporting

Reported measurements contained in periodically triggered measurement reports shall meet the requirements in section 9.

8.1.2.1.4 Event-triggered Periodic Reporting

Reported measurements contained in event triggered periodic measurement reports shall meet the requirements in section 9.
The first report in event triggered periodic measurement reporting shall meet the requirements specified in section 8.1.2.1.3 Event Triggered Reporting.

8.1.2.1.5 Event Triggered Reporting

Reported measurements contained in event triggered measurement reports shall meet the requirements in section 9.
The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled.
The measurement reporting delay is defined as the time between any event that will trigger a measurement report until the UE starts to transmit from when a report is triggered at the physical layer according to the event, until the UE starts to transmit the measurement report 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.
Editors Note: The test cases in section A.8 will need revisions to reflect the general requirements.

The event triggered measurement reporting delay, measured without L3 filtering, shall be less than the above defined $T_{identify\ intra}$. Unless otherwise stated, event triggered measurement reporting delay shall be less than 800 ms.
If a cell, which the UE has detected and measured without L3 filtering at least once measured over the measurement period, indicated by the L3 filter coefficient, becomes undetectable for the UE and then within for a period < [5] 5 seconds and then the cell becomes detectable again and triggers an event, the measurement reporting delay shall be less than [TBD] [$T_{Measurement\_Period\ Intra}$] ms provided the timing to that cell has not changed more than +/-32 chips. When L3 filtering is used an additional delay can be expected.

~~This requirement shall apply when the timing to the cell that triggered the event has not changed more than +/- [32] 32chips from the time when the cell was detectable and at least once measured before becoming undetectable until the event was triggered.~~

8.1.2.2 FDD inter frequency measurements

In the CELL_DCH state when a transmission gap pattern sequence with the "FDD measurements" purpose and gap lengths of 5, 7, 10 or 14 slots is provided by the network the UE shall continuously measure detected inter frequency cells and search for new inter frequency cells indicated in the measurement control information.

8.1.2.2.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within
~~8.1.2.2.2 Measurement period~~

$$\text{T}_{\text{identify inter}} = Max\left\{ [5]\,s, \text{T}_{\text{basic identify FDD,inter}} \cdot \frac{\text{T}_{\text{Measurement Period, Inter}}}{\text{T}_{\text{Inter}}} \cdot N_{Freq} \right\}$$

$$\boxed{\text{T}_{\text{identify inter}} = Max\left\{ 5000, \text{T}_{\text{basic identify FDD,inter}} \cdot \frac{\text{T}_{\text{Measurement Period, Inter}}}{\text{T}_{\text{Inter}}} \cdot N_{Freq} \right\}ms}$$

8.1.2.2.2 Measurement period

When transmission gaps are scheduled for FDD inter frequency measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.~~x.y~~1.1 and 9.1.2~~z.y~~ with measurement period given by

$$\text{T}_{\text{measurement inter}} = Max\left\{ [480]\,ms, \text{T}_{\text{basic measurement FDD inter}} \cdot \frac{\text{T}_{\text{Measurement Period, Inter}}}{\text{T}_{\text{Inter}}} \cdot N_{Freq} \right\}$$

$$\boxed{\text{T}_{\text{measurement inter}} = Max\left\{ 480, \text{T}_{\text{basic measurement FDD inter}} \cdot \frac{\text{T}_{\text{Measurement Period, Inter}}}{\text{T}_{\text{Inter}}} \cdot N_{Freq} \right\}ms}$$

If the UE does not need compressed mode to perform inter-frequency measurements, the measurement period for inter frequency measurements is ~~[480]~~ 480 ms.

$\text{T}_{\text{Measurement\_Period Inter}}$ = ~~[480]~~ 480 ms. The period used for calculating the measurement period $\text{T}_{\text{measurement\_inter}}$ for inter frequency CPICH measurements.

$\text{T}_{\text{Inter:}}$ This is the minimum time that is available for inter frequency measurements , during the period $\text{T}_{\text{Measurement\_Period inter}}$ with an arbitrarily chosen timing. The minimum time is calculated by using the actual idle length within the tranmission gap as given in the table 11 of Annex B in TS 25.212.

$\text{T}_{\text{basic\_identify\_FDD,inter}}$ = TBD ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new FDD cell is defined.

$\text{T}_{\text{basic\_measurement\_FDD inter}}$ = TBD ms. This is the time period used in the equation for defining the measurement period for inter frequency CPICH measurements.

N_{Freq}:   Number of FDD frequencies indicated in the measurement control
                     information.

Note: It is still under consideration how to incorporate a time needed for adjusting
             asynchronous timing between intra and inter frequency measurement periods and UE
             HW settling time into the equations.

8.1.2.2.3   Periodic Reporting

Reported measurements in periodically triggered measurement reports shall meet the requirements in
section 9.

8.1.2.2.4   Event Triggered Reporting

Reported measurements in event triggered measurement reports shall meet the requirements in section
9.
The UE shall not send any event triggered measurement reports, as long as the reporting criteria is not
fulfilled.
The measurement reporting delay is defined as the time between any event that will trigger a
measurement report until the UE starts to transmit from when a report is triggered at the physical layer
according to the event, until the UE starts to transmit the measurement report over the Uu interface.
This requirement assumes that 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 event triggered measurement reporting delay, measured without L3 filtering shall be less than the
above defined $T_{identify\ inter.}$ [5] seconds. When L3 filtering is used an additional delay can be expected.

CR-Form-v3

CHANGE REQUEST

| ⌘ | **25.133** CR **61** | ⌘ rev | **-** | ⌘ | Current version: | **3.3.0** | ⌘ |

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

Title: ⌘	Correction of TDD measurement requirements.	
Source: ⌘	RAN WG4	
Work item code: ⌘		***Date:*** ⌘ 13-17 nov
Category: ⌘ **F**		***Release:*** ⌘ R99

Use <u>one</u> of the following categories: **F** *(essential correction)* **A** *(corresponds to a correction in an earlier release)* **B** *(Addition of feature),* **C** *(Functional modification of feature)* **D** *(Editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	Use <u>one</u> of the following releases: 2 *(GSM Phase 2)* R96 *(Release 1996)* R97 *(Release 1997)* R98 *(Release 1998)* R99 *(Release 1999)* REL-4 *(Release 4)* REL-5 *(Release 5)*

Reason for change: ⌘	Currently the proposals for compressed mode patterns in 8.1.2.3 are not sufficient for the purpose of the section, TDD measurements. In addition missing values and events are introduced.
Summary of change: ⌘	
Consequences if not approved: ⌘	Unspecified requirements, current requirements not sufficient for purpose of the affected section..

Clauses affected: ⌘	8.1.2.3; A8

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

Other comments: ⌘	

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.1.2.3 TDD measurements

The requirements in this section apply only to UE supporting both TDD and FDD mode.

Editors note   The requirements in this section need to be revised.

In the CELL_DCH state when a transmission gap pattern sequence with the "TDD measurements" purpose and gap length of 11 or a dual gap pattern with gap length of 14 and 7 slots is provided by the network the UE shall continuously measure detected inter frequency TDD cells and search for new inter frequency cells indicated in the measurement control information. The requirements in this section apply when a compressed mode pattern according to the parameters in TS 25.101, Annex A5, Table A-22 is used.

The UE shall be capable of measuring the requested measurement quantity of at least 32 [FFS] cells on a maximum of 3 [FFS] frequencies, different from the frequency currently used by the UE.

8.1.2.3.1 Identification of a new cell

The UE shall be able to identify a new detectable cell belonging to the monitored set within

$$T_{\text{identify TDD inter}} = Max\left\{[5]s, T_{\text{basic identify TDD inter}} \cdot \frac{T_{\text{Measurement Period TDD inter}}}{T_{\text{TDD inter}}} \cdot N_{Freq}\right\}$$

8.1.2.3.2 Measurement period

When transmission gaps as priviously described are scheduled for TDD inter frequency measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.x.y and 9.z.y with measurement period given by

$$T_{\text{measurement TDD inter}} = MAX\left\{[480]ms, T_{\text{basic measurement TDD inter}} \cdot \frac{T_{\text{Measurement Period TDD inter}}}{T_{\text{TDD inter}}} \cdot N_{Freq}\right\}$$

$T_{\text{Measurement\_Period TDD inter}} =$ [480] ms. The period used for calculating the measurement period $T_{\text{measurement\_TDD inter}}$ for inter frequency RSCP measurements.

$T_{\text{TDD inter:}}$ This is the minimum time that is available for inter frequency measurements , during the period $T_{\text{Measurement\_Period TDD inter}}$ with an arbitrarily chosen timing. The minimum time is calculated by using the actual idle length within the transmission gap as given in the table 11 of Annex B in TS 25.212.

$T_{\text{basic\_identify\_TDD,inter}}$ =   TBD ms. This is the time period used in the inter frequency equation where the maximum allowed time for the UE to identify a new TDD cell is defined.

$T_{\text{basic\_measurement TDD inter}} =$ TBD ms. This is the time period used in the equation for defining the measurement period for inter frequency RSCP measurements.

$N_{\text{Freq}}:$ Number of TDD frequencies indicated in the measurement control information.

8.1.2.3.18.1.2.3.3   Periodic Reporting

Reported measurements in periodically triggered measurement reports shall meet the requirements in section 9.

8.1.2.3.28.1.2.3.4   Event Triggered Reporting

Reported measurements in event triggered measurement reports shall meet the requirements in section 9.

Editors note: The measurement accuracy in combination with event triggered reporting is an open issue and the above sentence shall be revised when this is settled.

CR page 2

The UE shall not send event triggered measurement reports, as long as the reporting criteria are not fulfilled. The measurement reporting delay is defined as the time from when a report is triggered at the physical layer according to the event, until the UE starts to transmit the measurement report over the Uu interface. This requirement assumes that 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 measurement reporting delay shall be less then [5] seconds.

NEXT CHANGED SECTION

A.8.3   TDD measurements

A.8.3.1   Correct reporting of TDD neighbours in AWGN propagation condition

A.8.3.1.1   Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of an event when measuring on a TDD cell. The test will partly verify the requirements in section 8.1.2.3.
The test consists of two successive time periods, with a time duration T1 and T2 respectively. The test parameters are given in Table A.8-14 and A.8-15. In the measurement control information it is indicated to the UE that event triggered reporting with Event XX2C shall be used.

Table A.8-14: General test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Value	Comment
DCH parameters		DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1
Power Control		On	
Compressed mode		Case 2.1	Gap length specified in section 8.1.2.3 and the other parameters aAs specified in TS 25.101 section A.5.
Active cell		Cell 1	
Reporting Threshold	dB		
Hysteresis	dB		
Time to Trigger	ms		
Filter coefficient			
Monitored cell list size		Total X Y on frequency Channel 2	Measurement control information is sent before the compressed mode pattern starts.
T1	s		
T2	s		

Table A.8-15: Cell specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 1		Cell 2			
Timeslot Number		n.a.		0		8	
		T1	**T2**	**T1**	**T2**	**T1**	T2
UTRA RF Channel Number		Channel 1		Channel 2			
CPICH_Ec/Ior	dB	[ ]	[ ]	n.a.		n.a.	
PCCPCH_Ec/Ior	dB	[ ]	[ ]	-3	-3		
SCH_Ec/Ior	dB	[ ]	[ ]	-9	-9	-9	-9
SCH_t$_{offset}$		n.a.	n.a.	15	15	15	15
PICH_Ec/Ior		[ ]	[ ]			-3	-3
DCH_Ec/Ior	dB	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
OCNS	dB	[ ]	[ ]	-4.28	-4.28	-4.28	-4.28
$\hat{I}_{or}/I_{oc}$	dB	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
I_{oc}	dBm/3.84 MHz	-70		-70			
CPICH_Ec/Io		[ ]		n.a.			
PCCPCH_RSCP	dB	n.a.	n.a.	[ ]	[ ]	[ ]	[ ]
Propagation Condition		AWGN					

Note: The DPCH of the TDD cell is located in an other timeslot than 0 or 8.

A.8.3.1.2 Test Requirements

The UE shall send one Event XX2C triggered measurement report, with a measurement reporting delay less than X[5] seconds from the start of time period T2.
The UE shall not send any measurement reports, as long as the reporting criteria are not fulfilled.

3GPP TSG RAN WG4 Meeting #14   R4-000993

Sophia, France 13th - 17th November 2000

CR-Form-v3

CHANGE REQUEST

⌘	**25.133** CR **62**	⌘ rev **-**	⌘ Current version:	**3.3.0** ⌘

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

Title: ⌘	General cell re-selection requirements		
Source: ⌘	RAN WG4		
Work item code: ⌘		***Date:*** ⌘	13-17 Nov 2000
Category: ⌘ **F**		***Release:*** ⌘	R99

Use *one* of the following categories:	Use *one* of the following releases:
F *(essential correction)*	*2 (GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	*R96 (Release 1996)*
B *(Addition of feature),*	*R97 (Release 1997)*
C *(Functional modification of feature)*	*R98 (Release 1998)*
D *(Editorial modification)*	*R99 (Release 1999)*
Detailed explanations of the above categories can	*REL-4 (Release 4)*
be found in 3GPP TR 21.900.	*REL-5 (Release 5)*

Reason for change: ⌘	Sufficient requirements for cell re-selection are missing.
Summary of change: ⌘	Requirements on measurements, measurement filtering and UE reaction times to trigger cell re-selection are specified for intra- and inter-frequency FDD cells and GSM cells. The requirements are valid for idle mode and Cell_PCH and URA_PCH states.
Consequences if not approved: ⌘	Predictable UE cell re-selection performance is not met.

Clauses affected: ⌘	4.2, 5.6, 5.7

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

Other comments: ⌘	

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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change reques

4.2　Cell Re-selection

4.2.1　Introduction

The cell reselection procedure allows the UE to select a more suitable cell and camp on it.

When the UE is in ~~Normally~~ Camped *Normally* state on a FDD cell, UE shall attempt to detect, synchronise, and monitor intra-frequency, inter-frequency and inter-RAT cells indicated in the measurement control system information of the serving cell. UE measurement activity is also controlled by measurement rules defined in TS25.304, allowing the UE to limit its measurement activity if certain conditions are fulfilled.~~and the occasions/triggers occur, as specified in 25.304, the UE shall perform the Cell Reselection Evaluation process.~~

4.2.2　Requirements

4.2.2.1　Measurement and evaluation of cell selection criteria S of serving cell

The UE shall measure the CPICH Ec/Io and CPICH RSCP level of the serving cell and evaluate the cell selection criterion S defined in TS25.304 for the serving cell at least every DRX cycle. The UE shall filter the CPICH Ec/Io and CPICH RSCP measurements of the serving cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureFDD}/2$ (see table 4.1).

If the UE has evaluated in N_{serv} consecutive DRX cycles that the serving cell does not fulfil the cell selection criterion S, the UE shall initiate the measurements of all neighbour cells indicated in the measurement control system information, regardless of the measurement rules currently limiting UE measurement activities.

If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells indicated in the measurement control system information for [TBD] s, the UE shall initiate cell selection procedures for the selected PLMN as defined in TS25.304.

4.2.2.2　Measurements of intra-frequency cells

The UE shall measure CPICH Ec/Io and CPICH RSCP at least every $T_{measureFDD}$ (see table 4.1) for intra-frequency cells that are detected and measured according to the measurement rules. $T_{measureFDD}$ is defined in Table x.y. The UE shall filter CPICH Ec/Io and CPICH RSCP measurements of each measured intra-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureFDD}/2$.

The filtering shall be such that the UE shall be capable of evaluating that an intra-frequency cell has become better than the serving cell within $T_{evaluateFDD}$ (see table 4.1), from the moment the intra-frequency cell became at least 3 dB better ranked than the current serving cell, provided that Treselection timer is set to zero and either CPICH Ec/Io or CPICH RSCP is used as measurement quantity for cell reselection.

If parameter Treselection has value different from zero, the UE shall evaluate an intra-frequency cell better than the serving cell during the Treselection time, before the UE shall reselect the new cell.

4.2.2.3　Measurements of inter-frequency FDD cells

The UE shall measure CPICH Ec/Io and CPICH RSCP at least every $(N_{carrier}-1) * T_{measureFDD}$ (see table 4.1) for inter-frequency cells that are detected and measured according to the measurement rules. The parameter $N_{carrier}$ is the number of carriers used for FDD cells. The UE shall filter CPICH Ec/Io and CPICH RSCP measurements of each measured inter-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureFDD}/2$.

If CPICH Ec/Io is used as measurement quantity for cell reselection, the filtering shall be such that the UE shall be capable of evaluating that an already detected inter-frequency cell has become better ranked than the serving cell within $(N_{carrier}-1) * T_{evaluateFDD}$ (see table 4.1) from the moment the inter-frequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero. For non-detected inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero.

If CPICH RSCP is used as measurement quantity for cell reselection, the filtering shall be such that the UE shall be capable of evaluating that an already detected inter-frequency cell has become better ranked than the serving cell within $(N_{carrier}-1) * T_{evaluateFDD}$ from the moment the inter-frequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero. For non-detected inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has value different from zero, the UE shall evaluate an inter-frequency cell better than the serving cell during the Treselection time, before the UE shall reselect the new cell.

4.2.2.4 Measurements of inter-frequency TDD cells

TBD.

4.2.2.5 Measurements of inter-RAT GSM cells

The UE shall measure the signal level of each GSM neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in TS25.304, at least every $T_{measureGSM}$ (see table 4.1). The UE shall maintain a running average of 4 measurements for each cell. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

The UE shall attempt to verify the BSIC for each of the 4 best ranked GSM BCCH carriers (the best ranked according to the cell reselection criteria defined in TS25.304) at least every 30 seconds if GSM cells are measured according to the measurement rules. If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

If the UE detects a BSIC, which is not indicated in the measurement control system information, the UE shall not consider that GSM BCCH carrier in cell reselection. The UE also shall not consider the GSM BCCH carrier in cell reselection, if the UE can not demodulate the BSIC of that GSM BCCH carrier.

4.2.2.6 Evaluation of cell re-selection criteria

The UE shall evaluate the cell re-selection criteria defined in TS 25.304 for the cells, which have new measurement results available, at least every DRX cycle.

Cell reselection shall take place immediately after the UE has found a better suitable cell unless the UE has made cell reselection within the last 1 second.

4.2.2.7 Maximum interruption in paging reception

UE shall perform the cell re-selection with minimum interruption in monitoring downlink channels for paging reception.

At intra-frequency cell re-selection, the UE shall monitor the downlink of current serving cell for paging reception until the UE is capable to start monitoring downlink channels of the target intra-frequency cell for paging reception. The interruption time shall not exceed 50 ms.

At inter-frequency and inter-RAT cell re-selection, the UE shall monitor the downlink of current serving cell for paging reception until the UE is capable to start monitoring downlink channels for paging reception of the target inter-frequency cell. The interruption time must not exceed T_REP + 50 ms. T_REP is the longest repetition period for the system information required to be read by the UE to camp on the cell.

These requirements assume sufficient radio conditions, so that decoding of system information can be made without errors.

Table 4.1 $T_{measureFDD}$, $T_{evaluateFDD}$ and $T_{measureGSM}$

DRX cycle length [s]	N_{serv} [number of DRX cycles]	$T_{measureFDD}$ [s] (number of DRX	$T_{evaluateFDD}$ [s] (number of DRX	$T_{measureGSM}$ [s] (number of DRX

		cycles)	cycles)	cycles)
0.08	4	0.64 (8 DRX cycles)	2.56 (32 DRX cycles)	2.56 (32 DRX cycles)
0.16	4	0.64 (4)	2.56 (16)	2.56 (16)
0.32	4	1.28 (4)	5.12 (16)	5.12 (16)
0.64	4	1.28 (2)	5.12 (8)	5.12 (8)
1.28	2	1.28 (1)	6.4 (5)	6.4 (5)
2.56	2	2.56 (1)	7.68 (3)	7.68 (3)
5.12	1	5.12 (1)	10.24 (2)	10.24 (2)

In idle mode, UE shall support DRX cycles lengths 0.64, 1.28, 2.56 and 5.12 s, according to [16].

4.2.2.14.2.2.8 Number of cells to be monitoredin neighbouring cell lists

The UE shall be capable of monitoring at least [32] neighbour intra-frequency cells and 32 inter-frequency cells on per carrier frequency for at least 2[3] additional carriers.

4.2.2.2Cell re-selection delay

The cell re-selection delay is defined as the time between the occurence of any event which will trigger Cell Reselection Evaluation process, as specified in 25.304,   and the moment in time when the UE starts sending the preamble for RRC Connection request for Location Update message to the UTRAN.

4.2.2.2.1Single carrier case

In a single carrier case, the cell re-selection delay shall be equal or less than [5] seconds.

4.2.2.2.2 Multi carrier case

In a multi carrier case, the cell re-selection delay shall be equal or less than [Nt] seconds.

4.3UTRAN to GSM Cell Re-Selection

4.3.1Introduction

The UTRAN to GSM Cell Re-Selection allows a UE, supporting both radio access technologies and camped on a UTRAN cell, to re-select a GSM cell and camp on it according to the cell re-selection criteria described in TS 25.304.

4.3.2 Requirements

4.3.2.1 Cell Re-Selection delay

The cell re-selection delay is defined as the time between the occurence of any event which will trigger Cell Reselection Evaluation process, as specified in 25.304, and the moment in time when the UE starts sending the RR Channel Request message for location update to GSM.

The UTRAN to GSM cell re-selection delay shall be equal or less than [x].

5.6 Cell Re-selection in CELL_PCH

5.6.1 Introduction

~~When a Cell Re-selection process is triggered according to 25.331, t~~The UE shall evaluate the cell re-selection criteria specified in TS 25.304, based on radio measurements, and if a better cell is found that cell is selected.

5.6.2 Requirements

~~Cell reselection delays are applicable when the repetition period of all relevant system information blocks is not more than 1280 ms and the length of DRX cycle is not longer than [640] ms.~~

~~5.6.2.1 Cell re-selection delay~~

~~The cell re-selection delay is defined as the time between the occurence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the preamble for RRC CELL UPDATE message to the UTRAN.~~

~~5.6.2.1.1 All cells in the neighbour list belong to the same frequency~~

~~The cell re-selection delay in CELL_PCH state shall be less than [x] seconds when all cells in the neighbour list belong to the same frequency~~

~~5.6.2.1.2 The cells in the neighbour list belong to different frequencies~~

~~The cell re-selection delay in CELL_PCH state shall be less than [x] seconds when the cells in the neighbour list belong to less than [3] frequencies.~~

Requirements for cell re-selection in Cell_PCH are the same as for cell re-selection in idle mode, see section 4.2. UE shall support all DRX cycle lengths in table 4.1, according to [16].

5.7 Cell Re-selection in URA_PCH

5.7.1 Introduction

~~When a Cell Re-selection process is triggered according to 25.331, t~~The UE shall evaluate the cell re-selection criteria specified in TS 25.304, based on radio measurements, and if a better cell is found that cell is selected.

5.7.2 Requirements

~~Cell reselection delays are applicable when the repetition period of all relevant system information blocks is not more than 1280 ms and the length of DRX cycle is not longer than [640] ms.~~

~~5.7.2.1 Cell re-selection delayThe cell re-selection delay is then defined as the time between the occurence of an event which will trigger Cell Reselection process and the moment in time when the UE starts sending the preamble for RRC CELL UPDATE message to the UTRAN.~~

~~5.7.2.1.1All cells in the neighbour list belong to the same frequency~~

~~The cell re-selection delay in URA_PCH state shall be less than [x] seconds when all cells in the neighbour list belong to the same frequency~~

~~5.7.2.1.2The cells in the neighbour list belong to different frequencies~~

~~The cell re-selection delay in URA_PCH state shall be less than [x] seconds when the cells in the neighbour list belong to less than [3] frequencies.~~

Requirements for cell re-selection in Cell_PCH are the same as for cell re-selection in idle mode, see section 4.2. UE shall support all DRX cycle lengths in table 4.1, according to [16].

3GPP TSG RAN WG4 Meeting #14　　　　　　　　　　　R4-000994

Sophia, France 13th - 17th November 2000

CR-Form-v3

CHANGE REQUEST

| ⌘ | **25.133** CR **63** | ⌘ rev | **-** | ⌘ | Current version: | **3.3.0** | ⌘ |

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

Title:	⌘	BSIC verification requirements in TS25.133
Source:	⌘	RAN WG4
Work item code: ⌘		**Date:** ⌘　16-Nov-2000
Category:	⌘ **F**	**Release:** ⌘　R99

Use one of the following categories: 　***F*** *(essential correction)* 　***A*** *(corresponds to a correction in an earlier release)* 　***B*** *(Addition of feature),* 　***C*** *(Functional modification of feature)* 　***D*** *(Editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use one of the following releases:* 　*2　　(GSM Phase 2)* 　*R96　(Release 1996)* 　*R97　(Release 1997)* 　*R98　(Release 1998)* 　*R99　(Release 1999)* 　*REL-4　(Release 4)* 　*REL-5　(Release 5)*

Reason for change:	⌘	BSIC verification requirements in TS25.133 are not finalised.
Summary of change: ⌘		This CR proposes modifications to BSIC verification requirements and modifications to the Initial BSIC identification compressed mode patterns. We have also proposed BSIC re-confirmation patterns to be included into TS25.133.
Consequences if not approved:	⌘	BSIC verification concept does not work properly.

Clauses affected:	⌘	8.1.2.4.2, 8.1.2.4.2.1 and 8.1.2.4.2.2

Other specs affected:	⌘	☐ Other core specifications ⌘	
		X Test specifications	34.121
		☐ O&M Specifications	

Other comments:	⌘	

8.1.2.4.2 BSIC verification

The procedure for UE measurements on a GSM cell with BSIC verified requested can be divided in the following two tasks:

1. Initial BSIC identification
   Includes searching for the BSIC and decoding the BSIC for the first time when there is no knowledge about the relative timing between the FDD and GSM cell. The UE shall trigger the initial BSIC identification within the available transmission gaps with purpose "GSM Initial BSIC identification".

2. BSIC re-confirmation
   Tracking and decoding the BSIC of a GSM cell after initial BSIC identification is performed. The UE shall trigger the BSIC re-confirmation within the available transmission gaps with purpose "GSM BSIC re-confirmation".

Measurements on a GSM cell can be requested with BSIC verified or BSIC non-verified.

The BSIC of a GSM cell is considered to be "verified" if the UE has demodulated the SCH of the BCCH carrier and identified the BSIC at least one time (initial BSIC identification) and from that moment the BSIC shall be re-confirmed at least once every $T_{re\text{-}confirm\ GSM}$ seconds. Otherwise the BSIC of the GSM cell is considered as "non-verified". The time requirement for initial BSIC identification, $T_{identify\ GSM}$, and the BSIC re-confirmation interval $T_{re\text{-}confirm\ GSM}$ can be found in the sections below.

If GSM measurements are requested with BSIC verified the UE shall be able to report at least the [6] strongest GSM cells with BSIC verified.

The UE shall be able to perform BSIC verification at levels down to the reference sensitivity level or reference interference levels as specified in GSM 05.05.

8.1.2.4.2.1 Initial BSIC identification

This measurement shall be based on a transmission gap pattern sequence with purpose "GSM Initial BSIC identification"

For GSM cells that is requested with BSIC verified the UE shall attempt to demodulate the SCH on the BCCH carrier of as many GSM cells indicated in the measurement control information as possible. The UE shall give priority for synchronisation attempts in signal strength order. The UE shall be able to perform initial BSIC identification on one new GSM cell within the time specified as $T_{identify\ GSM}$ in Table 8.2. When N new GSM cells are to be BSIC identified the time is changed to N *$T_{identify\ GSM}$

Table 8.2: The maximum time for identification of a previously not identified GSM cell

	TGL1	TGL2	TGD	TGPL1	TGPL2	$T_{identify\ GSM}$ (ms)
Pattern 1	7	0	0	2	0	
Pattern 2	7	0	0	3	0	
Pattern 3	7	0	2	9	0	
Pattern 4	7	0	3	12	0	
Pattern 5	14	0	0	2	0	
Pattern 6	14	0	2	6	0	
Pattern 7	14	0	2	8	0	
Pattern 8	14	0	2	12	0	
Pattern 9	10	0	12	48	0	
Pattern 10	10	0	0	48	0	

Note: The details of the initial BSIC identification procedure must be further clarified.

8.1.2.4.2.2 BSIC re-confirmation

This measurement shall be based on a transmission gap pattern sequence with purpose "GSM BSIC re-confirmation"

The time requirement for BSIC re-confirmation is specified as $T_{re\text{-}confirm\ GSM}$ in Table 8.3.

~~**Table 8.3: The maximum time for BSIC re-confimation**~~

	~~TGL1~~	~~TGL2~~	~~TGD~~	~~TGPL1~~	~~TGPL2~~	~~T~re-confirm GSM~ (ms)~~
~~Pattern 1~~						
~~Pattern 2~~						
~~Pattern 3~~						
~~Pattern 4~~						
~~Pattern 5~~						
~~Pattern 6~~						
~~Pattern 7~~						
~~Pattern 8~~						
~~Pattern 9~~						
~~Pattern 10~~						

~~Note: The details of the BSIC re-confirmation procedure must be further clarified.~~

8.1.2.4.2 BSIC verification

The procedure for UE measurements on a GSM cell with BSIC verified requested can be divided into the following two tasks:

1. Initial BSIC identification
   Includes searching for the BSIC and decoding the BSIC for the first time when there is no knowledge about the relative timing between the FDD and GSM cell. The UE shall trigger the initial BSIC identification within the available transmission gap pattern sequence with purpose "GSM Initial BSIC identification". The requirements for Initial BSIC identification can be found in 8.1.2.4.2.1.

2. BSIC re-confirmation
   Tracking and decoding the BSIC of a GSM cell after initial BSIC identification is performed. The UE shall trigger the BSIC re-confirmation within the available transmission gap pattern sequence with purpose "GSM BSIC re-confirmation". The requirements for BSIC re-confirmation can be found in 8.1.2.4.2.2.

Measurements on a GSM cell can be requested with BSIC verified or BSIC non-verified. If GSM measurements are requested with BSIC verified the UE shall be able to report the GSM cells with BSIC verified for those cells where the verification of BSIC has been successful.

The BSIC of a GSM cell is considered to be "verified" if the UE has decoded the SCH of the BCCH carrier and identified the BSIC at least one time (initial BSIC identification) and from that moment the BSIC shall be re-confirmed at least once every $T_{re-confirm\_abort}$ seconds. Otherwise the BSIC of the GSM cell is considered as "non-verified".

The parameters $N_{identify\_abort}$ and $T_{re-confirm\_abort}$ are defined by higher layers and are signalled to the UE together with the transmission gap pattern sequence. $N_{identify\_abort}$ indicates the maximum number of patterns that the UE shall use to attempt to decode the unknown BSIC of the GSM cell in the initial BSIC identification procedure. $T_{re-confirm\_abort}$ indicates the maximum time allowed for the re-confirmation of the BSIC of one GSM cell in the BSIC re-confirmation procedure.

The UE shall be able to decode a BSIC within a transmission gap when the time difference between the middle of the received GSM synchronisation burst at the UE and the middle of the effective transmission gap is within the limits specified in table 8.u.

The effective transmission gap is calculated by assuming both UL and DL compressed mode and applying the worst-case values for UL/DL timing offset and pilot field length of last DL gap slot.

Table 8.u: The gap length and maximum time difference for BSIC verification

Gap length [slots]	Maximum time difference [μs]
5	± 500
7	± 1200
8	± 1500
10	± 2200
14	± 3500

The UE shall be able to perform BSIC verification at levels down to the reference sensitivity level or reference interference levels as specified in GSM 05.05.

8.1.2.4.2.1 Initial BSIC identification

This measurement shall be based on a transmission gap pattern sequence with the purpose "GSM Initial BSIC identification"

For GSM cells that are requested with BSIC verified the UE shall attempt to decode the SCH on the BCCH carrier of at least [6] GSM cells indicated in the measurement control information. The UE shall give priority for synchronisation attempts in decreasing signal strength order to GSM cells with unknown BSIC. The UE shall be able to perform initial BSIC identification on one new GSM cell, with unknown BSIC, within $N_{identify\_abort}$ patterns of the transmission gap pattern sequence. $N_{identify\_abort}$ values are given for a set of reference patterns in Table 8.2. The number of patterns needed to identify N new GSM cells is N times $N_{identify\_abort}$. $T_{identify\_abort}$ as given in table 8.2 gives information about the time in seconds corresponding to $N_{identify\_abort}$ patterns.

Table 8.2: The worst-case time for identification of one previously not identified GSM cell

	TGL1 [slots]	TGL2 [slots]	TGD [slots]	TGPL1 [frames]	TGPL2 [frames]	$T_{identify\ abort}$ [s]	$N_{identify\ abort}$ [patterns]
Pattern 1	7	0	0	3	0	1.53	51
Pattern 2	7	0	0	8	0	5.20	65
Pattern 3	7	7	47	8	0	2.00	25
Pattern 4	7	7	38	12	0	2.88	24
Pattern 5	14	0	0	8	0	1.76	22
Pattern 6	14	0	0	24	0	5.04	21
Pattern 7	14	14	45	12	0	1.44	12
Pattern 8	10	0	0	12	0	2.76	23
Pattern 9	10	10	75	12	0	1.56	13
Pattern 10	8	0	0	8	0	2.80	35
Pattern 11	8	0	0	4	0	1.52	38

If the BSIC of a GSM cell has been successfully identified the UE shall continue BSIC identification with the next cell, in signal strength order, for at least the [6] strongest GSM cells with unknown BSIC. The GSM cell for which the BSIC has been successfully identified shall be moved to the BSIC re-confirmation procedure.

If the UE has not successfully identified the BSIC within $N_{identify\_abort}$ patterns, the UE shall abort the BSIC identification attempts for that GSM cell. The UE shall continue to try to perform BSIC identification on the next GSM cell in signal strength order. The GSM cell for which the BSIC identification failed shall not be re-considered for BSIC identification until BSIC identification attempts have been made for all the rest of the [6] strongest GSM cells with unknown BSIC in the monitored set.

8.1.2.4.2.2 BSIC re-confirmation

The requirements of this section are applicable for BSIC re-confirmation.

The UE shall maintain the timing information of at least [6] identified GSM cells. Initial timing information is obtained from the initial BSIC identification. The timing information shall be updated every time the BSIC is decoded.

For each transmission gap of a transmission gap pattern sequence with the measurement purpose "GSM BSIC re-confimation", the UE shall attempt to decode the BSIC falling within the effective gap duration. If more than one BSIC can be decoded within the same gap, priority shall be given to the least recently decoded BSIC.

If the UE fails to decode the BSIC after two successive attempts or if the UE has not been able to re-confirm the BSIC for a GSM cell within $T_{re-confirm\_abort}$ seconds, the UE shall abort the BSIC re-confirmation attempts for that GSM cell. The GSM cell shall be treated as a new GSM cell with unidentified BSIC and the GSM cell shall be moved to the initial BSIC identification procedure, see section 8.1.2.4.2.1. The UE shall be able to make BSIC re-confirmation attempts for the [6] strongest GSM cells in the monitored list.

$N_{re-confirm\_abort}$ is the number of transmission gap patterns executed during $T_{re-confirm\_abort}$ (informative).

Table 8.3: The worst-case time for BSIC re-confirmation of one GSM cell

	TGL1 [slots]	TGL2 [slots]	TGD [slots]	TGPL1 [frames]	TGPL2 [frames]	$T_{re-confirm\_abort}$ [s]	$N_{re-confirm\_abort}$ [patterns]
Pattern 1	7	0	0	3	0	1.29	43
Pattern 2	7	0	0	8	0	4.96	62
Pattern 3	7	0	0	15	0	7.95	53
Pattern 4	7	7	69	23	0	9.89	43
Pattern 5	7	7	69	8	0	2.64	33
Pattern 6	14	0	0	8	0	1.52	19
Pattern 7	14	14	60	8	0	0.80	10
Pattern 8	10	0	0	8	0	1.76	22
Pattern 9	10	0	0	24	0	4.80	20
Pattern 10	8	0	0	8	0	2.56	32
Pattern 11	8	0	0	23	0	7.82	34
Pattern 12	7	7	47	8	0	1.76	22
Pattern 13	7	7	38	12	0	2.64	22
Pattern 14	14	0	0	24	0	4.80	20
Pattern 15	14	14	45	12	0	1.20	10
Pattern 16	10	0	0	12	0	2.52	21
Pattern 17	10	10	75	12	0	1.32	11
Pattern 18	8	0	0	4	0	1.28	32

Note: This table will be removed after inclusion in TR 25.922.

CR-Form-v3

CHANGE REQUEST

| ⌘ | **25.133** CR **64** | ⌘ rev | **-** | ⌘ | Current version: | **3.3.0** | ⌘ |

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

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

Title: ⌘	GSM RSSI measurement	
Source: ⌘	RAN WG4	
Work item code: ⌘		***Date:*** ⌘ 2000-11-03
Category: ⌘ **F**		***Release:*** ⌘ R99

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

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

Reason for change: ⌘	Currently the GSM carrier RSSI accuracy requirement is valid when the same amount of samples as in GSM are taken. This leads to that a large amount of CM is needed even when only a few GSM carriers are monitored. It is also unclear how the UE shall behave and how the accuracy is affected when it is not possible to take enough samples so that all GSM neighbours can be measured during one measurement period.
Summary of change: ⌘	Clarification of the GSM carrier RSSI measurement in 25.133.
Consequences if not approved: ⌘	The required amount of compressed mode needed to perform GSM carrier RSSI measurements will very large even with a few GSM neighbours in the monitored set.

Clauses affected: ⌘	8.1.2.4

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

Other comments: ⌘	

How to create CRs using this form:

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

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3)   With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.1.2.4   GSM measurements

The requirements in this section applyies only to UE supporting FDD and GSM.

> Editors note: The following requirements have been taken as a working assumption, but might need revision when RAN WG2 concludes the feasibility of several measurement purposes for GSM measurements.

In CELL_DCH state when a transmission gap pattern sequence is provided by the UTRAN the UE shall continously measure GSM cells and search for new GSM cells given in the monitored set.

Measurements on a GSM cell can be requested with BSIC verified or BSIC non-verified.

If BSIC verified is requested for a GSM cell the UE shall only report measurement quantities for that GSM cell with a BSIC "verified" according to section 9.2.5.2. If BSIC verification is not required for a GSM cell the UE shall report measurement quantities for that GSM cell irrespectively if the BSIC has been verified or not verified according to section 9.2.5.2.

If the UE does not need compressed mode to perform GSM measurements, the requirements in GSM 05.08 shall apply.

8.1.2.4.1 GSM carrier RSSI

A UE supporting GSM measurements using compressed mode shall meet the minimum number of GSM RSSI carrier measurements specified in Table 8.1. be able to measure GSM carrier RSSI levels of GSM cells from the monitored set with acquisition speed defined in table 8.1. This measurement shall be based on a transmission gap pattern sequence with purpose "GSM carrier RSSI measurements"

In the CELL_DCH state the measurement period for the GSM carrier RSSI measurement is [480] ms.

The UE shall meet the measurement accuracy requirements stated for RXLEV in GSM 05.08, when the given measurement time allows the UE to the take at least 3 the same amount of GSM carrier RSSI samples per GSM carrier in the monitored set as stated in the GSM specification during the measurement period.

Table 8.1

TGL	Number of GSM carrier RSSI samples in each gap.
3	1
4	2
5	3
7,10,14	5

In case the UE is not able to acquire the required number of samples per GSM carrier during one measurement period, the UE shall measure as many GSM carriers as possible during that measurement period using at least 3 samples per GSM carrier. The GSM carriers that were not measured during that measurement period shall be measured in the following measurement periods. This means that, in this particular case, the L1 reporting period to higher layers of a GSM neighbour can be a multiple of the measurement period.

3GPP TSG RAN WG4 Meeting #14

Sophia, France 13th - 17th November 2000

R4-000996

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

Title:	⌘	Clarification of parallel measurement section
Source:	⌘	RAN WG4
Work item code: ⌘		***Date:*** ⌘ 13-17 Nov 2000
Category:	⌘ **F**	***Release:*** ⌘ R99

Use <u>one</u> of the following categories:
F (essential correction)
A (corresponds to a correction in an earlier release)
B (Addition of feature),
C (Functional modification of feature)
D (Editorial modification)
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

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

Reason for change:	⌘	CR on paralell measurement section.
Summary of change:	⌘	The requirements stating how many neighbours that should be supported by the UE is modified in order to fit with RAN WG2 signalling. In addition a requirements on UE measurement processing is added.
Consequences if not approved:	⌘	Inconsistency between 25.331 and 25.133.

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

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 UE Measurements Procedures

8.1 General Measurement Requirements s in CELL_DCH State

8.1.1 Introduction

This section contains requirements on the UE regarding measurement reporting in CELL_DCH state. The requirements are split in FDD intra frequency, FDD inter frequency, TDD and GSM measurements. These measurements may be used by the UTRAN, e.g. for handover decisions. The measurements are defined in TS 25.215, the measurement model is defined in TS 25.302 and measurement accuracies are specified in section 9. Control of measurement reporting is specified in TS 25.331 and parallel measurements are specified in section 8.2. Compressed mode is specified in TS 25.215.

8.1.2 Requirements

8.1.2.1A UE Measurement Capability

The UE shall be able to support and process up to

- 32 intra frequency FDD cells, and

- 32 inter frequency FDD cells, distributed on up to 2 additional FDD carriers.

Depending on UE capability, the UE shall also in addition be able to support and process 32 TDD cells, distributed on up to 3 TDD carriers.

Depending on UE capability, the UE shall also in addition be able to support and process at least 32 GSM cells distributed on up to 32 GSM carriers.

Performance requirements for different types of compressed mode patterns and different number of cells is defined in the following sections.

The requirements in section 9 are applicable for a UE performing measurements according to this section.

8.1.2.1 FDD intra frequency measurements

During the CELL_DCH state the UE shall continuously measure detected intra frequency cells and search for new intra frequency cells in the monitoring set. In case the network request the UE to report unlisted cells, the UE shall also search for intra frequency cells outside the monitored set. If a compressed mode pattern sequence is activated, intra frequency measurements can be performed between the transmission gaps simultaneously for data reception from the active set cell/s.

NEXT CHANGED SECTION

8.2 Parallel Measurements in CELL_DCH State with special requirements

8.2.1 Introduction

This section contains specific requirements for certain measurements beyond those specified in section 8.1. The purpose with this section is to ensure that all UE can handle a certain number of measurements in parallel. The measurements are defined in TS 25.215, the measurement model is defined in TS 25.302 and measurement accuracies are specified in section 9. Control of measurement reporting is specified in TS 25.331 and measurements reporting delays are specified in section 8.1. Compressed mode is specified in TS 25.215.

8.2.2　Requirements

Editors note:　The number of events that the UE shall be able to evaluate shall be considered either in this section or in a new section.

The requirements in section 9 are applicable for a UE performing measurements according to this section.

[The UE shall be able to handle at least 32 FDD cells per carrier on at least 3 FDD carriers + 32 GSM cells in the monitored set.]

The UE shall be able to perform parallel measurements according to table 8-4.

In addition to the requirements in table 8-4 the UE shall in parallel, in state CELL_DCH, also be able to measure and report the quantities according to section 8.1.

Table 8-4 Parallel measurement requirements

Measurement quantity	Number of parallel measurements possible to request from the UE
Transport channel BLER	[1] per Transport Channel
UE transmitted power	[1]
UE Rx-Tx time difference	[1] including timing to all radio links in active set
SFN-SFN observed time difference type 2	[]
UE GPS Timing of Cell Frames for LCS	[]

Editors Note:　The presence of the measurements for location services needs to be revised.

8.3　Capabilities for Support of Event Triggering and Reporting Criteria

8.3.1　Introduction

This section contains requirements on UE capabilities for support of event triggering and reporting criteria.

The UE can be requested to make measurements under different measurement identity numbers. With each identity number there may be associated multiple number of events. The purpose of this section is to set some limits on the number of different reporting criteria the UE may be requested to track in parallel.

8.3.2　Requirements

In this section reporting criteria can be either event triggered reporting criteria or periodic reporting criteria.

The UE shall be able to track in parallel per category up to E_{cat} reporting criteria according to Table 8.x. Beyond the individual limits per measurement category, the UE need not track more than [TBD] reporting criteria in total.

Table 8-x Requirements for reporting criteria per measurement category

Measurement category	E_{cat}
Intra-frequency	[]
Inter-frequency	[]
Inter-system	[]
UE internal measurements	[]
Traffic volume measurements	[]
Quality measurements	[]
LCS measurements	[]
Additional measurements	[]