Title: **CRs (R'99 and Rel-4/Rel-5 Category A) to TS 25.133 (1)**

Source: **TSG RAN WG4**

Agenda Item: **7.4.3**

RAN4 Tdoc	Spec	CR	Rev	Phase	Title	Cat	Curr Ver	New Ver
R4-020109	25.133	256		R99	Clarification of measurement period for UTRA Carrier RSSI	F	3.8.0	3.9.0
R4-020110	25.133	257		Rel-4	Clarification of measurement period for UTRA Carrier RSSI	A	4.3.0	4.4.0
R4-020111	25.133	258		Rel-5	Clarification of measurement period for UTRA Carrier RSSI	A	5.1.0	5.2.0
R4-020240	25.133	303		R99	UTRAN GSM Cell Reselection	F	3.8.0	3.9.0
R4-020241	25.133	304		Rel-4	UTRAN GSM Cell Reselection	A	4.3.0	4.4.0
R4-020242	25.133	305		Rel-5	UTRAN GSM Cell Reselection	A	5.1.0	5.2.0
R4-020318	25.133	315		R99	Requirement for Blind HO from UTRAN to GSM (R99)	F	3.8.0	3.9.0
R4-020319	25.133	316		Rel-4	Requirement for Blind HO from UTRAN to GSM (Rel-4)	A	4.3.0	4.4.0
R4-020320	25.133	317		Rel-5	Requirement for Blind HO from UTRAN to GSM (Rel-5)	A	5.1.0	5.2.0
R4-020406	25.133	312	1	R99	Inclusion of AMR 2 requirement (R99)	F	3.8.0	3.9.0
R4-020407	25.133	313	1	Rel-4	Inclusion of AMR 2 requirement (Rel-4)	A	4.3.0	4.4.0
R4-020408	25.133	314	1	Rel-5	Inclusion of AMR 2 requirement (Rel-5)	A	5.1.0	5.2.0
R4-020415	25.133	291	1	R99	FDD inter frequency measurements and test cases	F	3.8.0	3.9.0
R4-020494	25.133	294	1	Rel-4	FDD inter frequency measurements and test cases	A	4.3.0	4.4.0
R4-020495	25.133	295	1	Rel-5	FDD inter frequency measurements and test cases	A	5.1.0	5.2.0
R4-020416	25.133	259	1	R99	Mapping of UE Rx-Tx time difference type 1	F	3.8.0	3.9.0
R4-020417	25.133	260	1	Rel-4	Mapping of UE Rx-Tx time difference type 1	A	4.3.0	4.4.0
R4-020418	25.133	261	1	Rel-5	Mapping of UE Rx-Tx time difference type 1	A	5.1.0	5.2.0

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CHANGE REQUEST

| ⌘ | **25.133** CR **256** | ⌘ **rev** | **-** | ⌘ | Current version: | **3.8.0** | ⌘ |

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

Title:	⌘	Clarification of measurement period for UTRA Carrier RSSI
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 1/2/2002

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

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

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

Reason for change:	⌘	From the requirement for the UE measurement UTRA Carrier RSSI it is not clear what the measurement period is for the measurement. It refers to section 8 where CPICH merasurement performance is specified but nothing is stated regarding this measurement in section 8.
Summary of change:	⌘	It is clarified that the measurement period for the UTRA carrier RSSI measurement is equal to the measurement period for CPICH measurements as specified in section 8. Also an incorrect reference stating the measurement period for inter-frequency measurement is corrected. <u>Isolated Impact Analysis:</u> The CR clarifies possible ambiguities. Would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.
Consequences if not approved:	⌘	The specified measurement period for UTRA carrier RSSI will be unclear. Different UEs may use different averaging time and would therefore report different measurement results even under the same conditions.

Clauses affected:	⌘	9.1.3

Other specs affected:	⌘	☐ Other core specifications ⌘	
		X Test specifications	34.121
		☐ 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.

9.1.3 UTRA Carrier RSSI

NOTE: This measurement is for Inter-frequency handover evaluation.

The measurement period is equal to the measurement period for UE CPICH measurements. Ffor CELL_DCH state the measurement period can be found in sub clause 8.1.2.2 for intra frequency measurements and in sub clause 8.1.2.32 for inter frequency measurements. The measurement period for CELL_FACH state can be found in sub clause 8.4.2.2 for intra frequency measurements and in sub clause 8.4.2.3 for inter frequency measurements.

9.1.3.1 Absolute accuracy requirement

Table 9.10: UTRA Carrier RSSI Inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	Extreme condition	Io [dBm]
UTRA Carrier RSSI	dBm	± 4	± 7	-94...-70
	dBm	± 6	± 9	-70...-50

CR-Form-v5

CHANGE REQUEST

| ⌘ | **25.133 CR** | **317** | ⌘ **rev** | **-** | ⌘ | Current version: | **5.1.0** | ⌘ |

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

Title:	⌘	Requirement for Blind HO from UTRAN to GSM (Rel-5)
Source:	⌘	RAN WG4
Work item code: ⌘	TEI	*Date:* ⌘ 1/2/2002
Category:	⌘ **A**	*Release:* ⌘ Rel-5

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

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

Reason for change: ⌘	There is already an existing requirement (delay and interruption time) when the UE has not synchronised to the target cell before the HANDOVER FROM UTRAN COMMAND is received: The behavior of the UE when this operation of synchronisation fails is not specified.
Summary of change: ⌘	The same time specified in the GSM specification (for the Blind Ho from GSM to UTRAN see GSM 45.008 sub 7.2) is proposed, in order to give a limit in time for the synchronisation task. A reference to the RRC procedure of the Handover Failure is added when the synchronisation is not completed before this limit. An editorial correction is also included in a reference to the 25.331.
Consequences if *not approved:* ⌘	The behavior of the Ue will be not specified in a failure case. If not approved, the behavior of the Ue in case of failure during the synchronisation task (requested by a HO from UTRAN to GSM) is not specified. Isolated Impact analysis: Correction to a function where the specification was uncomplete.. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected:	⌘	5.2.2.1 ; 5.4.2
Other specs *affected:*	⌘ ☐	Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	This Cr is proposed in R99 and onwards because this blind Ho is a Release 99 functionnality.

How to create CRs using this form:

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

UTRAN Connected mode mobility

This section contains the requirements on the mobility procedures in UTRAN connected mode such as handover and cell re-selection.

Requirements related to the measurements in support of the execution of the UTRAN connected mode mobility procedures are specified, currently not necessarily for all UTRAN connected mode states, in section 8 .

The radio links the UE shall use are controlled by UTRAN with RRC signalling.

UE behaviour in response to UTRAN RRC messages is described in TS25.331.

The purpose of Cell reselection in CELL_FACH, CELL_PCH and URA_PCH states is that the UE shall select a better cell according to the cell reselection criteria in TS 25.304. CELL_FACH, CELL_PCH and URA_PCH states are described in TS 25.331.

5.1 FDD/FDD Soft Handover

5.1.1 Introduction

Soft handover is a function in which the UE is connected to several UTRAN access points at the same time. Addition and/or release of radio links are controlled by the ACTIVE SET UPDATE procedure.

The soft handover function includes a measurement phase, a decision algorithm in UTRAN and the ACTIVE SET UPDATE procedure.

5.1.2 Requirements

5.1.2.1 Active set dimension

The UE shall be capable of supporting at least 6 radio links in the active set.

As described in TS 25.211, the UE may be informed by UTRAN that for one or more links in the active set neither S-CPICH or P-CPICH is available as phase reference and the UE shall thus use the Dedicated Pilot as phase reference. The UE shall then support at least 6 radio links in the active set, out of which up to 4 radio links are such that the Dedicated Pilot shall be used as a phase reference.

5.1.2.2 Active set update delay

The active set update delay is defined as the time from when the UE has received the ACTIVE SET UPDATE message from UTRAN, or at the time stated through the activation time when to perform the active set update, to the time when the UE successfully uses the set of radio links stated in that message for power control.

The active set update delay is depending on the number of known cells referred to in the ACTIVE SET UPDATE message. A cell is known if either or both of the following conditions are true:

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

- the cell has been measured by the UE during the last 5 seconds and the SFN of the cell has been decoded by the UE..

And the phase reference is the primary CPICH.

The active set update delay shall be less than $50+10*KC+100*OC$ ms, where

KC is the number of known cells in the active set update message.

OC is the number of cells that are not known in the active set update message.

If the UE have radio links in the active set that it can not use for data detection (due to low signal level), the UE shall at least every 150 ms search for the radio link

5.1.2.3 Interruption Time

The UE shall not interrupt the data flow when adding, changing or removing radio links to the active set.

5.2 FDD/FDD Hard Handover

5.2.1 Introduction

The hard handover procedure is initiated from UTRAN with a RRC message that implies a hard handover, see TS 25.331 section 8.3.5.

5.2.2 Requirements

5.2.2.1 Hard handover delay

Procedure delay for all procedures, that can command a hard handover, are specified in {TS25.331 section 1113.5.2}.

When the UE receives a RRC message implying hard handover with the activation time "now" or earlier than than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCCH within $D_{handover}$ seconds from the end of the last TTI containing the RRC command.

If the access is delayed to an indicated activation time later than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCCH at the designated activation time.

where:

$D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.2.2.2.

5.2.2.2 Interruption time

The interruption time, i.e. the time between the last TTI containing a transport block on the old DPDCH and the time the UE starts transmission of the new uplink DPCCH, is depending on whether the target cell is known for the UE or not.

If intra-frequency hard handover is commanded or inter-frequency hard handover is commanded when the UE does not need compressed mode to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt1}$

$$T_{interrupt1} = T_{IU} + 40 + 20*KC + 150*OC \text{ ms}$$

where

T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

KC is the number of known target cells in the message, and

OC is the number of target cells that are not known in the message.

Note: The figure 40 ms is the time required for measuring the downlink DPCCH channel as stated in TS 25.214 section 4.3.1.2.

In the interruption requirement $T_{interrupt1}$ a cell is known if either or both of the following conditions are true:

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

- the cell has been measured by the UE during the last 5 seconds and the SFN of the cell has been decoded by the UE.

If inter-frequency hard handover is commanded and the UE needs compressed mode to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt2}$

$$T_{interrupt2} = T_{IU}+40+50*KC+150*OC \text{ ms}$$

In the interruption requirement $T_{interrupt2}$ a cell is known if:

- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The requirements in this section assume that N312 has the smallest possible value i.e. only one insync is required.

5.3   FDD/TDD Handover

5.3.1   Introduction

The purpose of FDD/TDD hard handover is to change the mode between FDD and TDD. The handover procedure is initiated from UTRAN with a RRC message that implies a hard handover, refer to TS25.331.

Compressed mode according to the UE Capability may be used to be able to make any measurements on the other mode.

5.3.2   Requirements

These requirements shall apply only to FDD/TDD UE.

5.3.2.1   Hard handover delay

Procedure delay for all procedures, that can command a hard handover, are specified in TS25.331 section 13.5.2.

When the UE receives a RRC message implying hard handover with the activation time "now" or earlier than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH within $D_{handover}$ seconds from the end of the last TTI containing the RRC command.

If the access is delayed to an indicated activation time later than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH at the designated activation time.

where:

$D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.3.2.2.

5.3.2.2   Interruption time

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old DPDCH and the time the UE starts transmission of the new uplink DPCH. The interruption time shall be less than the value in table 5-3. There is different requirement on the interruption time depending on if the cell is known or not and if the SFN of the target cell needs to be decoded by the UE during the interruption time or not.

In this interruption requirement a cell is known if the cell has been measured by the UE during the last 5 seconds.

Table 5.1: FDD/TDD interruption time

cell present in the handover command message	Interruption time [ms]		
	Known cell		Unknown cell
	SFN not to be decoded	SFN needs to be decoded	SFN needs to be decoded
1	[100]	[130]	[400]

The interruption time includes the time that can elapse till the appearance of the channel required for the synchronisation, which can be up to one frame (10ms). And the time that can elapse till the appearance of the slot in which the new uplink DPCH shall be transmitted , which can be up to one frame (10ms).

The requirement in Table 5.1 for the unknown cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

NOTE: One synchronisation attempt can consist of coherent averaging using several frames.

5.4 FDD/GSM Handover

5.4.1 Introduction

The purpose of inter-RAT handover from UTRAN FDD to GSM is to transfer a connection between the UE and UTRAN FDD to GSM. The handover procedure is initiated from UTRAN with a RRC message (HANDOVER FROM UTRAN COMMAND). The procedure is described in TS25.331 section 8.3.7.

Compressed mode according to the UE Capability may be used to be able to make measurements on GSM.

5.4.2 Requirements

The requirements in this section shall apply to UE supporting FDD and GSM.

The requirements given below in Tables 5.2 and 5.3 for the case where the UE has not synchronised to the GSM cell before receiving the HANDOVER FROM UTRAN COMMAND are valid when the signal quality of the GSM cell is sufficient for successful synchronisation with one attempt. If the UE is unable to synchronise to the GSM cell on the first attempt, it shall continue to search for synchronisation information for up to 800 ms. If after 800 ms the UE has not synchronised to the GSM cell it shall follow the handover failure procedure specified in [16].

5.4.2.1 Handover delay

When the UE receives a RRC HANDOVER FROM UTRAN COMMAND with the activation time "now" or earlier than the value in table 5.2 from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in GSM45.010) on the channel of the new RAT within the value in table 5.2 from the end of the last TTI containing the RRC command.

If the access is delayed to an indicated activation time later than the value in table 5.2 from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in GSM 45.010) on the channel of the new RAT at the designated activation time.

The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms. If the activation time is used, it corresponds to the CFN of the UTRAN channel.

Table 5.2: FDD/GSM handover –handover delay

UE synchronisation status	Handover delay [ms]
The UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	90
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	190

5.4.2.2   Interruption time

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old channel and the time the UE is ready to transmit on the new channel, shall be less than The value in table 5.3. ~~The requirement in table 5.3 for the case, that UE is not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received, is valid when the signal quality of the GSM cell is good enough for successful synchronisation with one attempt.~~

Table 5.3: FDD/GSM handover - interruption time

Synchronisation status	Interruption time [ms]
The UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	40
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	140

5.5   Cell Re-selection in CELL_FACH

5.5.1   Introduction

When a Cell Re-selection process is triggered according to TS 25.331, 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.

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CHANGE REQUEST

| ⌘ | **25.133 CR** | **316** | ⌘ **rev** | **-** | ⌘ | Current version: | **4.3.0** | ⌘ |

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

Title: ⌘	Requirement for Blind HO from UTRAN to GSM (Rel-4)	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI	**Date:** ⌘ 1/2/2002

Category: ⌘ **A**	**Release:** ⌘ Rel-4

Use <u>one</u> of the following categories:
F (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: ⌘	There is already an existing requirement (delay and interruption time) when the UE has not synchronised to the target cell before the HANDOVER FROM UTRAN COMMAND is received: The behavior of the UE when this operation of synchronisation fails is not specified.
Summary of change: ⌘	The same time specified in the GSM specification (for the Blind Ho from GSM to UTRAN see GSM 45.008 sub 7.2) is proposed, in order to give a limit in time for the synchronisation task. A reference to the RRC procedure of the Handover Failure is added when the synchronisation is not completed before this limit. An editorial correction is also included in a reference to the 25.331.
Consequences if not approved: ⌘	The behavior of the Ue will be not specified in a failure case. If not approved, the behavior of the Ue in case of failure during the synchronisation task (requested by a HO from UTRAN to GSM) is not specified. Isolated Impact analysis: Correction to a function where the specification was uncomplete. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected: ⌘	5.2.2.1 ; 5.4.2		
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications		
Other comments: ⌘	This Cr is proposed in R99 and onwards because this blind Ho is a Release 99 functionnality.		

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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.

5   UTRAN Connected mode mobility

This section contains the requirements on the mobility procedures in UTRAN connected mode such as handover and cell re-selection.

Requirements related to the measurements in support of the execution of the UTRAN connected mode mobility procedures are specified, currently not necessarily for all UTRAN connected mode states, in section 8 .

The radio links the UE shall use are controlled by UTRAN with RRC signalling.

UE behaviour in response to UTRAN RRC messages is described in TS25.331.

The purpose of Cell reselection in CELL_FACH, CELL_PCH and URA_PCH states is that the UE shall select a better cell according to the cell reselection criteria in TS 25.304. CELL_FACH, CELL_PCH and URA_PCH states are described in TS 25.331.

5.1   FDD/FDD Soft Handover

5.1.1   Introduction

Soft handover is a function in which the UE is connected to several UTRAN access points at the same time. Addition and/or release of radio links are controlled by the ACTIVE SET UPDATE procedure.

The soft handover function includes a measurement phase, a decision algorithm in UTRAN and the ACTIVE SET UPDATE procedure.

5.1.2   Requirements

5.1.2.1   Active set dimension

The UE shall be capable of supporting at least 6 radio links in the active set.

5.1.2.2   Active set update delay

The active set update delay is defined as the time from when the UE has received the ACTIVE SET UPDATE message from UTRAN, or at the time stated through the activation time when to perform the active set update, to the time when the UE successfully uses the set of radio links stated in that message for power control.

The active set update delay is depending on the number of known cells referred to in the ACTIVE SET UPDATE message. A cell is known if either or both of the following conditions are true:

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

-    the cell has been measured by the UE during the last 5 seconds and the SFN of the cell has been decoded by the UE..

And the phase reference is the primary CPICH.

The active set update delay shall be less than $50+10*KC+100*OC$ ms, where

KC is the number of known cells in the active set update message.

OC is the number of cells that are not known in the active set update message.

If the UE have radio links in the active set that it can not use for data detection (due to low signal level), the UE shall at least every 150 ms search for the radio link

5.1.2.3   Interruption Time

The UE shall not interrupt the data flow when adding, changing or removing radio links to the active set.

5.2   FDD/FDD Hard Handover

5.2.1   Introduction

The hard handover procedure is initiated from UTRAN with a RRC message that implies a hard handover, see TS 25.331 section 8.3.5.

5.2.2   Requirements

5.2.2.1   Hard handover delay

Procedure delay for all procedures, that can command a hard handover, are specified in [TS25.331 section ~~11~~13.5.2].

When the UE receives a RRC message implying hard handover with the activation time "now" or earlier than than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCCH within $D_{handover}$ seconds from the end of the last TTI containing the RRC command.

If the access is delayed to an indicated activation time later than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCCH at the designated activation time.

where:

$D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.2.2.2.

5.2.2.2   Interruption time

The interruption time, i.e. the time between the last TTI containing a transport block on the old DPDCH and the time the UE starts transmission of the new uplink DPCCH, is depending on whether the target cell is known for the UE or not.

If intra-frequency hard handover is commanded or inter-frequency hard handover is commanded when the UE does not need compressed mode to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt1}$

$T_{interrupt1} = T_{IU} + 40 + 20*KC + 150*OC$ ms

where

> T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

> KC is the number of known target cells in the message, and

> OC is the number of target cells that are not known in the message.

> Note: The figure 40 ms is the time required for measuring the downlink DPCCH channel as stated in TS 25.214 section 4.3.1.2.

In the interruption requirement $T_{interrupt1}$ a cell is known if either or both of the following conditions are true:

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

- the cell has been measured by the UE during the last 5 seconds and the SFN of the cell has been decoded by the UE.

If inter-frequency hard handover is commanded and the UE needs compressed mode to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt2}$

$T_{interrupt2} = T_{IU}+40+50*KC+150*OC$ ms

In the interruption requirement $T_{interrupt2}$ a cell is known if:

- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The requirements in this section assume that N312 has the smallest possible value i.e. only one insync is required.

5.3   FDD/TDD Handover

5.3.1   Introduction

The purpose of FDD/TDD hard handover is to change the mode between FDD and TDD. The handover procedure is initiated from UTRAN with a RRC message that implies a hard handover, refer to TS25.331.

Compressed mode according to the UE Capability may be used to be able to make any measurements on the other mode.

5.3.2   Requirements

These requirements shall apply only to FDD/TDD UE.

5.3.2.1   Hard handover delay

Procedure delay for all procedures, that can command a hard handover, are specified in TS25.331 section 13.5.2.

When the UE receives a RRC message implying hard handover with the activation time "now" or earlier than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH within $D_{handover}$ seconds from the end of the last TTI containing the RRC command.

If the access is delayed to an indicated activation time later than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH at the designated activation time.

where:

$D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.3.2.2.

5.3.2.2   Interruption time

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old DPDCH and the time the UE starts transmission of the new uplink DPCH. The interruption time shall be less than the value in table 5-3. There is different requirement on the interruption time depending on if the cell is known or not and if the SFN of the target cell needs to be decoded by the UE during the interruption time or not.

In this interruption requirement a cell is known if the cell has been measured by the UE during the last 5 seconds.

Table 5.1: FDD/TDD interruption time

cell present in the handover command message	Interruption time [ms]		
	Known cell		Unknown cell
	SFN not to be decoded	SFN needs to be decoded	SFN needs to be decoded
1	[100]	[130]	[400]

The interruption time includes the time that can elapse till the appearance of the channel required for the synchronisation, which can be up to one frame (10ms). And the time that can elapse till the appearance of the slot in which the new uplink DPCH shall be transmitted , which can be up to one frame (10ms).

The requirement in Table 5.1 for the unknown cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

NOTE: One synchronisation attempt can consist of coherent averaging using several frames.

5.4   FDD/GSM Handover

5.4.1   Introduction

The purpose of inter-RAT handover from UTRAN FDD to GSM is to transfer a connection between the UE and UTRAN FDD to GSM. The handover procedure is initiated from UTRAN with a RRC message (HANDOVER FROM UTRAN COMMAND). The procedure is described in TS25.331 section 8.3.7.

Compressed mode according to the UE Capability may be used to be able to make measurements on GSM.

5.4.2   Requirements

The requirements in this section shall apply to UE supporting FDD and GSM.

The requirements given below in Tables 5.2 and 5.3 for the case where the UE has not synchronised to the GSM cell before receiving the HANDOVER FROM UTRAN COMMAND are valid when the signal quality of the GSM cell is sufficient for successful synchronisation with one attempt. If the UE is unable to synchronise to the GSM cell on the first attempt, it shall continue to search for synchronisation information for up to 800 ms. If after 800 ms the UE has not synchronised to the GSM cell it shall follow the handover failure procedure specified in [16].

5.4.2.1   Handover delay

When the UE receives a RRC HANDOVER FROM UTRAN COMMAND with the activation time "now" or earlier than the value in table 5.2 from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in GSM 45.010) on the channel of the new RAT within the value in table 5.2 from the end of the last TTI containing the RRC command.

If the access is delayed to an indicated activation time later than the value in table 5.2 from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in GSM 45.010) on the channel of the new RAT at the designated activation time.

The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms. If the activation time is used, it corresponds to the CFN of the UTRAN channel.

Table 5.2: FDD/GSM handover –handover delay

UE synchronisation status	handover delay [ms]
The UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	90
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	190

5.4.2.2   Interruption time

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old channel and the time the UE is ready to transmit on the new channel, shall be less than The value in table 5.3. The requirement in table 5.3 for the case, that UE is not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received, is valid when the signal quality of the GSM cell is good enough for successful synchronisation with one attempt.

Table 5.3: FDD/GSM handover - interruption time

Synchronisation status	Interruption time [ms]
The UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	40
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	140

5.5   Cell Re-selection in CELL_FACH

5.5.1   Introduction

When a Cell Re-selection process is triggered according to TS 25.331, 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.

CR-Form-v5

CHANGE REQUEST

| ⌘ | **25.133** CR | **315** ⌘ **rev** | **-** | ⌘ | Current version: | **3.8.0** | ⌘ |

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

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

Title: ⌘	Requirement for Blind HO from UTRAN to GSM (R99)	
Source: ⌘	RAN WG4	
Work item code: ⌘		**Date:** ⌘ 1/2/2002
Category: ⌘ **F**		**Release:** ⌘ R99

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

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

Reason for change: ⌘	There is already an existing requirement (delay and interruption time) when the UE has not synchronised to the target cell before the HANDOVER FROM UTRAN COMMAND is received: The behavior of the UE when this operation of synchronisation fails is not specified.
Summary of change: ⌘	The same time specified in the GSM specification (for the Blind Ho from GSM to UTRAN see GSM 45.008 sub 7.2) is proposed, in order to give a limit in time for the synchronisation task. A reference to the RRC procedure of the Handover Failure is added when the synchronisation is not completed before this limit. An editorial correction is also included in a reference to the 25.331.
Consequences if not approved: ⌘	The behavior of the Ue will be not specified in a failure case. If not approved, the behavior of the Ue in case of failure during the synchronisation task (requested by a HO from UTRAN to GSM) is not specified. Isolated Impact analysis: Correction to a function where the specification was uncomplete. Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected: ⌘	5.2.2.1 ; 5.4.2
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments: ⌘	This Cr is proposed in R99 and onwards because this blind Ho is a Release 99 functionnality.

How to create CRs using this form:

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

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

5   UTRAN Connected mode mobility

This section contains the requirements on the mobility procedures in UTRAN connected mode such as handover and cell re-selection.

Requirements related to the measurements in support of the execution of the UTRAN connected mode mobility procedures are specified, currently not necessarily for all UTRAN connected mode states, in section 8 .

The radio links the UE shall use are controlled by UTRAN with RRC signalling.

UE behaviour in response to UTRAN RRC messages is described in TS25.331.

The purpose of Cell reselection in CELL_FACH, CELL_PCH and URA_PCH states is that the UE shall select a better cell according to the cell reselection criteria in TS 25.304. CELL_FACH, CELL_PCH and URA_PCH states are described in TS 25.331.

5.1   FDD/FDD Soft Handover

5.1.1   Introduction

Soft handover is a function in which the UE is connected to several UTRAN access points at the same time. Addition and/or release of radio links are controlled by the ACTIVE SET UPDATE procedure.

The soft handover function includes a measurement phase, a decision algorithm in UTRAN and the ACTIVE SET UPDATE procedure.

5.1.2   Requirements

5.1.2.1   Active set dimension

The UE shall be capable of supporting at least 6 radio links in the active set.

5.1.2.2   Active set update delay

The active set update delay is defined as the time from when the UE has received the ACTIVE SET UPDATE message from UTRAN, or at the time stated through the activation time when to perform the active set update, to the time when the UE successfully uses the set of radio links stated in that message for power control.

The active set update delay is depending on the number of known cells referred to in the ACTIVE SET UPDATE message. A cell is known if either or both of the following conditions are true:

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

-    the cell has been measured by the UE during the last 5 seconds and the SFN of the cell has been decoded by the UE..

And the phase reference is the primary CPICH.

The active set update delay shall be less than 50+10*KC+100*OC ms, where

    KC is the number of known cells in the active set update message.

    OC is the number of cells that are not known in the active set update message.

If the UE have radio links in the active set that it can not use for data detection (due to low signal level), the UE shall at least every 150 ms search for the radio link

5.1.2.3   Interruption Time

The UE shall not interrupt the data flow when adding, changing or removing radio links to the active set.

5.2   FDD/FDD Hard Handover

5.2.1   Introduction

The hard handover procedure is initiated from UTRAN with a RRC message that implies a hard handover, see TS 25.331 section 8.3.5.

5.2.2   Requirements

5.2.2.1   Hard handover delay

Procedure delay for all procedures, that can command a hard handover, are specified in [TS25.331 section 11 13.5.2].

When the UE receives a RRC message implying hard handover with the activation time "now" or earlier than than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCCH within $D_{handover}$ seconds from the end of the last TTI containing the RRC command.

If the access is delayed to an indicated activation time later than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCCH at the designated activation time.

where:

$D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.2.2.2.

5.2.2.2   Interruption time

The interruption time, i.e. the time between the last TTI containing a transport block on the old DPDCH and the time the UE starts transmission of the new uplink DPCCH, is depending on whether the target cell is known for the UE or not.

If intra-frequency hard handover is commanded or inter-frequency hard handover is commanded when the UE does not need compressed mode to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt1}$

$$T_{interrupt1} = T_{IU} + 40 + 20*KC + 150*OC \text{ ms}$$

where

> T_{IU} is the interruption uncertainty when changing the timing from the old to the new cell. T_{IU} can be up to one frame (10 ms).

> KC is the number of known target cells in the message, and

> OC is the number of target cells that are not known in the message.

> Note: The figure 40 ms is the time required for measuring the downlink DPCCH channel as stated in TS 25.214 section 4.3.1.2.

In the interruption requirement $T_{interrupt1}$ a cell is known if either or both of the following conditions are true:

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

-      the cell has been measured by the UE during the last 5 seconds and the SFN of the cell has been decoded by the UE.

If inter-frequency hard handover is commanded and the UE needs compressed mode to perform inter-frequency measurements, the interruption time shall be less than $T_{interrupt2}$

$T_{interrupt2} = T_{IU}+40+50*KC+150*OC$ ms

In the interruption requirement $T_{interrupt2}$ a cell is known if:

- the cell has been measured by the UE during the last 5 seconds.

The phase reference is the primary CPICH.

The requirements in this section assume that N312 has the smallest possible value i.e. only one insync is required.

5.3 FDD/TDD Handover

5.3.1 Introduction

The purpose of FDD/TDD hard handover is to change the mode between FDD and TDD. The handover procedure is initiated from UTRAN with a RRC message that implies a hard handover, refer to TS25.331.

Compressed mode according to the UE Capability may be used to be able to make any measurements on the other mode.

5.3.2 Requirements

These requirements shall apply only to FDD/TDD UE.

5.3.2.1 Hard handover delay

Procedure delay for all procedures, that can command a hard handover, are specified in TS25.331 section 13.5.2.

When the UE receives a RRC message implying hard handover with the activation time "now" or earlier than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH within $D_{handover}$ seconds from the end of the last TTI containing the RRC command.

If the access is delayed to an indicated activation time later than $D_{handover}$ seconds from the end of the last TTI containing the RRC command, the UE shall be ready to start the transmission of the new uplink DPCH at the designated activation time.

where:

$D_{handover}$ equals the RRC procedure delay defined in TS25.331 Section 13.5.2 plus the interruption time stated in section 5.3.2.2.

5.3.2.2 Interruption time

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old DPDCH and the time the UE starts transmission of the new uplink DPCH. The interruption time shall be less than the value in table 5-3. There is different requirement on the interruption time depending on if the cell is known or not and if the SFN of the target cell needs to be decoded by the UE during the interruption time or not.

In this interruption requirement a cell is known if the cell has been measured by the UE during the last 5 seconds.

Table 5.1: FDD/TDD interruption time

cell present in the handover command message	Interruption time [ms]		
	Known cell		Unknown cell
	SFN not to be decoded	SFN needs to be decoded	SFN needs to be decoded
1	[100]	[130]	[400]

The interruption time includes the time that can elapse till the appearance of the channel required for the synchronisation, which can be up to one frame (10ms). And the time that can elapse till the appearance of the slot in which the new uplink DPCH shall be transmitted , which can be up to one frame (10ms).

The requirement in Table 5.1 for the unknown cell shall apply if the signal quality of the unknown cell is good enough for successful synchronisation with one attempt.

NOTE: One synchronisation attempt can consist of coherent averaging using several frames.

5.4 FDD/GSM Handover

5.4.1 Introduction

The purpose of inter-RAT handover from UTRAN FDD to GSM is to transfer a connection between the UE and UTRAN FDD to GSM. The handover procedure is initiated from UTRAN with a RRC message (HANDOVER FROM UTRAN COMMAND). The procedure is described in TS25.331 section 8.3.7.

Compressed mode according to the UE Capability may be used to be able to make measurements on GSM.

5.4.2 Requirements

The requirements in this section shall apply to UE supporting FDD and GSM.

The requirements given below in Tables 5.2 and 5.3 for the case where the UE has not synchronised to the GSM cell before receiving the HANDOVER FROM UTRAN COMMAND are valid when the signal quality of the GSM cell is sufficient for successful synchronisation with one attempt. If the UE is unable to synchronise to the GSM cell on the first attempt, it shall continue to search for synchronisation information for up to 800 ms. If after 800 ms the UE has not synchronised to the GSM cell it shall follow the handover failure procedure specified in [16].

5.4.2.1 Handover delay

When the UE receives a RRC HANDOVER FROM UTRAN COMMAND with the activation time "now" or earlier than the value in table 5.2 from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in GSM 05.10) on the channel of the new RAT within the value in table 5.2 from the end of the last TTI containing the RRC command.

If the access is delayed to an indicated activation time later than the value in table 5.2 from the end of the last TTI containing the RRC command, the UE shall be ready to transmit (as specified in GSM 05.10) on the channel of the new RAT at the designated activation time.

The UE shall process the RRC procedures for the RRC HANDOVER FROM UTRAN COMMAND within 50 ms. If the activation time is used, it corresponds to the CFN of the UTRAN channel.

Table 5.2: FDD/GSM handover –handover delay

UE synchronisation status	handover delay [ms]
The UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	90
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	190

5.4.2.2 Interruption time

The interruption time, i.e. the time between the end of the last TTI containing a transport block on the old channel and the time the UE is ready to transmit on the new channel, shall be less than The value in table 5.3. ~~The requirement in table 5.3 for the case, that UE is not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received, is valid when the signal quality of the GSM cell is good enough for successful synchronisation with one attempt.~~

Table 5.3: FDD/GSM handover - interruption time

Synchronisation status	Interruption time [ms]
The UE has synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	40
The UE has not synchronised to the GSM cell before the HANDOVER FROM UTRAN COMMAND is received	140

5.5 Cell Re-selection in CELL_FACH

5.5.1 Introduction

When a Cell Re-selection process is triggered according to TS 25.331, 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.

CHANGE REQUEST

⌘	**25.133** CR	**314** ⌘ **rev**	**1**	⌘	Current version:	**5.1.0**	⌘

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

Title: ⌘	Inclusion of AMR 2 requirement (Rel-5)	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI	***Date:*** ⌘ 1/2/2002

Category: ⌘	**A**	***Release:*** ⌘	Rel-5

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

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

Reason for change: ⌘	It was decided by CN#4 (see TS 23.153 Out of band trancoder control) to have the AMR2 taken as the default speech codec for all dual mode UE for R99 and onwards. Therefore an update to 25.133 is required.

Summary of change: ⌘	An additional requirement is added to take into account the AMR2 speech codec:

In the UMTS_AMR case: the change of the Codec Mode can be performed every speech frame for both Uplink and Downlink. The current requirement is equal to 20+20= 40 ms and left unchanged.

In the UMTS_AMR2 case: the change of the Codec Mode is done every speech frame for Downlink direction, and every second speech frame for Uplink direction.

Since AMR2 may take 20 additionnal ms to adapt the speech codec for the uplink, it is proposed to add 20 ms (one speech frame length) to UMTS_AMR requirement to define the UMTS_AMR2 requirement. |

Consequences if not approved: ⌘	A major requirement for the default speech codec AMR2 will be missing.

Clauses affected: ⌘	6.4.2

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

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

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

6.4 Transport format combination selection in UE

6.4.1 Introduction

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format set, according to the functionality specified in section 11.4 in TS25.321. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321.

6.4.2 Requirements

The UE shall continuously evaluate based on the *Elimination, Recovery* and *Blocking* criteria defined below, how TFCs can be used for the purpose of TFC selection. The evaluation shall be performed using the estimated UE transmit power of a given TFC. The UE transmit power estimation shall be made using the UE transmitted power measured over the measurement period and the gain factors of the corresponding TFC.

The UE shall consider the *Elimination* criterion for a given TFC to be fulfilled if the estimated UE transmit power needed for this TFC is greater than the Maximum UE transmitter power for at least X out of Y successive measurement periods. The MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within [15 ms] from the moment the *Elimination* criterion was fulfilled.

The UE shall consider the *Recovery* criterion for a given TFC to be fulfilled if the estimated UE transmit power needed for this TFC has not been greater than the Maximum UE transmitter power for at least Y successive measurement periods. The MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

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

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

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

where:

T_{notify} equals [15] ms, and

T_{modify} equals $MAX(T_{adapt\_max}, T_{TTI})$, and

$T_{L1\ proc}$ equals 15 ms, and

T_{adapt_max} equals $MAX(T_{adapt\_1}, T_{adapt\_2}, ..., T_{adapt\_N})$, and

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

T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. Table 6.1 defines T_{adapt} times for different services. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms.

Table 6.1: T_{adapt}

Service	T_{adapt} [ms]
UMTS_AMR	40
UMTS_AMR2	60

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

The Maximum UE transmitter power is defined as follows

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

where

Maximum allowed UL TX Power is set by UTRAN and defined in [16], and

UE maximum transmit power is defined by the UE power class, and specified in [3].

6.5 Maximum allowed UL TX Power

UTRAN may limit the power the UE is using on the uplink by setting the maximum allowed UL TX power IE defined in TS25.331.

CR-Form-v5

CHANGE REQUEST

⌘   **25.133 CR**   **313** ⌘ **rev** **1** ⌘   Current version: **4.3.0** ⌘

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

Title: ⌘	Inclusion of AMR 2 requirement (Rel-4)	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI	***Date:*** ⌘ 1/2/2002

Category: ⌘ **A**	***Release:*** ⌘ Rel-4

Use <u>one</u> of the following categories:
    F *(correction)*
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    B *(addition of feature),*
    C *(functional modification of feature)*
    D *(editorial modification)*
Detailed explanations of the above categories can
be found in 3GPP <u>TR 21.900</u>.

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

Reason for change: ⌘	It was decided by CN#4 (see TS 23.153 Out of band trancoder control) to have the AMR2 taken as the default speech codec for all dual mode UE for R99 and onwards. Therefore an update to 25.133 is required.
Summary of change: ⌘	An additional requirement is added to take into account the AMR2 speech codec: In the UMTS_AMR case: the change of the Codec Mode can be performed every speech frame for both Uplink and Downlink. The current requirement is equal to 20+20= 40 ms and left unchanged. In the UMTS_AMR2 case: the change of the Codec Mode is done every speech frame for Downlink direction, and every second speech frame for Uplink direction. Since AMR2 may take 20 additionnal ms to adapt the speech codec for the uplink, it is proposed to add 20 ms (one speech frame length) to UMTS_AMR requirement to define the UMTS_AMR2 requirement. Isolated Impact analysis: addition of a requirement.Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.
Consequences if not approved: ⌘	A major requirement for the default speech codec AMR2 will be missing.

Clauses affected: ⌘	6.4.2
Other specs affected: ⌘	☐ Other core specifications ⌘ ☐ Test specifications

	O&M Specifications	

Other comments:	⌘	

How to create CRs using this form:

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

6.4 Transport format combination selection in UE

6.4.1 Introduction

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format set, according to the functionality specified in section 11.4 in TS25.321. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321.

6.4.2 Requirements

The UE shall continuously evaluate based on the *Elimination, Recovery* and *Blocking* criteria defined below, how TFCs can be used for the purpose of TFC selection. The evaluation shall be performed using the estimated UE transmit power of a given TFC. The UE transmit power estimation shall be made using the UE transmitted power measured over the measurement period and the gain factors of the corresponding TFC.

The UE shall consider the *Elimination* criterion for a given TFC to be fulfilled if the estimated UE transmit power needed for this TFC is greater than the Maximum UE transmitter power for at least X out of Y successive measurement periods. The MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bitrate for each logical channel to upper layers within [15 ms] from the moment the *Elimination* criterion was fulfilled.

The UE shall consider the *Recovery* criterion for a given TFC to be fulfilled if the estimated UE transmit power needed for this TFC has not been greater than the Maximum UE transmitter power for at least Y successive measurement periods. The MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

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

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

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

where:

T_{notify} equals [15] ms, and

T_{modify} equals $MAX(T_{adapt\_max}, T_{TTI})$, and

$T_{L1\ proc}$ equals 15 ms, and

T_{adapt_max} equals $MAX(T_{adapt\_1}, T_{adapt\_2}, ..., T_{adapt\_N})$, and

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

T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical channel n. Table 6.1 defines T_{adapt} times for different services. For services where no codec is used T_{adapt} shall be considered to be equal to 0 ms.

Table 6.1: T_{adapt}

Service	T_{adapt} [ms]
UMTS_AMR	40
UMTS_AMR2	60

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

The Maximum UE transmitter power is defined as follows

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

where

Maximum allowed UL TX Power is set by UTRAN and defined in [16], and

UE maximum transmit power is defined by the UE power class, and specified in [3].

6.5 Maximum allowed UL TX Power

UTRAN may limit the power the UE is using on the uplink by setting the maximum allowed UL TX power IE defined in TS25.331.

CR-Form-v5

CHANGE REQUEST

| ⌘ | **25.133 CR** | **312** ⌘**rev** | **1** ⌘ | Current version: | **3.8.0** ⌘ |

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

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

Title: ⌘	Inclusion of AMR 2 requirement (Rel-99)	
Source: ⌘	RAN WG4	
Work item code: ⌘		***Date:*** ⌘ 1/2/2002
Category: ⌘ **F**		***Release:*** ⌘ R99

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

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

Reason for change: ⌘	It was decided by CN#4 (see TS 23.153 Out of band trancoder control) to have the AMR2 taken as the default speech codec for all dual mode UE for R99 and onwards. Therefore an update to 25.133 is required.
Summary of change: ⌘	An additional requirement is added to take into account the AMR2 speech codec:

In the UMTS_AMR case: the change of the Codec Mode can be performed every speech frame for both Uplink and Downlink. The current requirement is equal to 20+20= 40 ms and left unchanged.

In the UMTS_AMR2 case: the change of the Codec Mode is done every speech frame for Downlink direction, and every second speech frame for Uplink direction.

Since AMR2 may take 20 additionnal ms to adapt the speech codec for the uplink, it is proposed to add 20 ms (one speech frame length) to UMTS_AMR requirement to define the UMTS_AMR2 requirement.

Isolated Impact analysis: addition of a requirement.
Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise. |
| ***Consequences if not approved:*** ⌘ | A major requirement for the default speech codec AMR2 will be missing. |

Clauses affected: ⌘	6.4.2
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.

6.4   Transport format combination selection in UE

6.4.1   Introduction

When the UE estimates that a certain TFC would require more power than the maximum transmit power, it shall limit the usage of transport format combinations for the assigned transport format set, according to the functionality specified in section 11.4 in TS25.321. This in order to make it possible for the network operator to maximise the coverage. Transport format combination selection is described in section 11.4 of TS 25.321.

6.4.2   Requirements

The UE shall continuously evaluate based on the *Elimination, Recovery* and *Blocking* criteria defined below, how TFCs can be used for the purpose of TFC selection. The evaluation shall be performed using the estimated UE transmit power of a given TFC. The UE transmit power estimation shall be made using the UE transmitted power measured over the measurement period and the gain factors of the corresponding TFC.

The UE shall consider the *Elimination* criterion for a given TFC to be fulfilled if the estimated UE transmit power needed for this TFC is greater than the Maximum UE transmitter power for at least X out of Y successive measurement periods. The MAC in the UE shall consider that the TFC is in Excess-Power state for the purpose of TFC selection.

MAC in the UE shall indicate the available bit rate for each logical channel to upper layers within [15 ms] from the moment the *Elimination* criterion was fulfilled.

The UE shall consider the *Recovery* criterion for a given TFC to be fulfilled if the estimated UE transmit power needed for this TFC has not been greater than the Maximum UE transmitter power for at least Y successive measurement periods. The MAC in the UE shall consider that the TFC is in Supported state for the purpose of TFC selection.

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

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

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

where:

   T_{notify} equals [15] ms, and

   T_{modify} equals $MAX(T_{adapt\_max}, T_{TTI})$, and

   $T_{L1 proc}$ equals 15 ms, and

   T_{adapt_max} equals $MAX(T_{adapt\_1}, T_{adapt\_2}, ..., T_{adapt\_N})$, and

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

   T_{adapt_n} equals the time it takes for higher layers to provide data to MAC in a new supported bitrate, for logical
        channel n. Table 6.1 defines T_{adapt} times for different services. For services where no codec is used T_{adapt} shall be
        considered to be equal to 0 ms.

Table 6.1: T_{adapt}

Service	T_{adapt} [ms]
UMTS_AMR	40
UMTS_AMR2	60

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

The Maximum UE transmitter power is defined as follows

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

where

      Maximum allowed UL TX Power is set by UTRAN and defined in [16], and

      UE maximum transmit power is defined by the UE power class, and specified in [3].

6.5   Maximum allowed UL TX Power

UTRAN may limit the power the UE is using on the uplink by setting the maximum allowed UL TX power IE defined in TS25.331.

CR-Form-v4

CHANGE REQUEST

| | ⌘ | **25.133** CR **305** | ⌘ | ev | **-** | ⌘ | Current version: | **5.1.0** | ⌘ |

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

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

Title:	⌘	UTRAN –GSM Cell Reselection
Source:	⌘	RAN WG4
Work item code: ⌘	TEI	**Date:** ⌘ 1/2/2002

Category:	⌘	**A**	**Release:** ⌘ Rel-5

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

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

Reason for change:	⌘	Requirements for T_{BCCH} and T_{RA} are not defined for UE not requirement measurement occasions
Summary of change:	⌘	The definition of T_{BCCH} and T_{RA} are moved so they apply to both cases
Consequences if not approved:	⌘	The cell reselection delay was not defined. Isolation impact analysis – this does not impact implementation and only corrects an editorial error when rhe the CR was implemented. – Without this change the requirements in the fomula are not complete.

Clauses affected:	⌘	5.5.2.1.4

Other specs affected:	⌘	☐ Other core specifications	⌘	TS34.121
		X Test specifications		
		☐ O&M Specifications		

Other comments:	⌘	

How to create CRs using this form:
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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

5.5.2.1.4   UTRAN-GSM Cell Reselection

The cell re-selection delay in CELL_FACH state to a GSM cell shall be less than

$$T_{reselection,\,GSM} = T_{identify,\,GSM} + T_{measurement,\,GSM} + T_{BCCH} + T_{RA} \text{ ms}$$

where

T_{BCCH} = is the maximum time allowed to read the BCCH data from a GSM cell [21].

T_{RA} = the additional delay caused by the random access procedure.

a) For UE requiring measurement occasions.

$T_{identify,\,GSM}$ is specified in 8.4.2.5.2.1

~~T_{BCCH} = is the maximum time allowed to read the BCCH data from a GSM cell [21].~~

~~T_{RA} = the additional delay caused by the random access procedure.~~

$$T_{measurement,\,GSM} = Max\left\{ 8 \cdot \frac{N_{carriers}}{N_{GSM\,carrier\,RSSI}} \cdot T_{meas}, 4 * T_{meas}, 480ms \right\}$$

where:

$N_{carriers}$ is the number of GSM carriers in the Inter-RAT cell info list

$N_{GSM\,carrier\,RSSI}$ is specified in 8.4.2.5.1.

b) For UE not requiring measurement occasions

$T_{identify,\,GSM}$ = 150 ms

$T_{measurement,\,GSM}$ = 480 ms

CHANGE REQUEST

| ⌘ | **25.133** CR **304** | ⌘ | ev | **-** | ⌘ | Current version: | **4.3.0** | ⌘ |

*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 ☐   Radio Access Network ☐   Core Network ☐

Title: ⌘	UTRAN –GSM Cell Reselection	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI	***Date:*** ⌘ 1/2/2002

Category: ⌘ **A**	***Release:*** ⌘ Rel-4

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

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

Reason for change: ⌘	Requirements for T_{BCCH} and T_{RA} are not defined for UE not requirement measurement occasions
Summary of change: ⌘	The definition of T_{BCCH} and T_{RA} are moved so they apply to both cases
Consequences if not approved: ⌘	The cell reselection delay was not defined.

Isolation impact analysis – this does not impact implementation and only corrects an editorial error when rhe the CR was implemented. – Without this change the requirements in the fomula are not complete. |

Clauses affected: ⌘	5.5.2.1.4

Other specs affected: ⌘	☐ Other core specifications	⌘	TS34.121
	X 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.

5.5.2.1.4 UTRAN-GSM Cell Reselection

The cell re-selection delay in CELL_FACH state to a GSM cell shall be less than

$$T_{reselection, GSM} = T_{identify, GSM} + T_{measurement, GSM} + T_{BCCH} + T_{RA} \text{ ms}$$

where

T_{BCCH} = is the maximum time allowed to read the BCCH data from a GSM cell [21].

T_{RA} = the additional delay caused by the random access procedure.

a) For UE requiring measurement occasions.

$T_{identify, GSM}$ is specified in 8.4.2.5.2.1

~~T_{BCCH} = is the maximum time allowed to read the BCCH data from a GSM cell [21].~~

~~T_{RA} = the additional delay caused by the random access procedure.~~

$$T_{measurement, GSM} = Max\left\{ 8 \cdot \frac{N_{carriers}}{N_{GSM\,carrier\,RSSI}} \cdot T_{meas}, 4 * T_{meas}, 480ms \right\}$$

where:

$N_{carriers}$ is the number of GSM carriers in the Inter-RAT cell info list

$N_{GSM\,carrier\,RSSI}$ is specified in 8.4.2.5.1.

b) For UE not requiring measurement occasions

$T_{identify, GSM} = 150 \text{ ms}$

$T_{measurement, GSM} = 480 \text{ ms}$

CR-Form-v4

CHANGE REQUEST

⌘　　　**25.133** CR **303**　　⌘ ev **-** ⌘　Current version: **3.8.0** ⌘

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

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

Title:	⌘	UTRAN –GSM Cell Reselection
Source:	⌘	RAN WG4
Work item code:	⌘	**Date:** ⌘　1/2/2002
Category:	⌘ **F**	**Release:** ⌘　R99

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

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

Reason for change:	⌘	Requirements for T_{BCCH} and T_{RA} are not defined for UE not requirement measurement occasions
Summary of change:	⌘	The definition of T_{BCCH} and T_{RA} are moved so they apply to both cases
Consequences if not approved:	⌘	The cell reselection delay was not defined. Isolation impact analysis – this does not impact implementation and only corrects an editorial error when rhe the CR was implemented. – Without this change the requirements in the fomula are not complete.

Clauses affected:	⌘	5.5.2.1.4		
Other specs affected:	⌘	☐ Other core specifications **X** Test specifications ☐ O&M Specifications	⌘	TS34.121
Other comments:	⌘			

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

5.5.2.1.4 UTRAN-GSM Cell Reselection

The cell re-selection delay in CELL_FACH state to a GSM cell shall be less than

$$T_{reselection,\ GSM} = T_{identify,\ GSM} + T_{measurement,\ GSM} + T_{BCCH} + T_{RA}\ ms$$

where

T_{BCCH} = is the maximum time allowed to read the BCCH data from a GSM cell [21].

T_{RA} = the additional delay caused by the random access procedure.

a) For UE requiring measurement occasions.

$T_{identify,\ GSM}$ is specified in 8.4.2.5.2.1

~~T_{BCCH} = is the maximum time allowed to read the BCCH data from a GSM cell [21].~~

~~T_{RA} = the additional delay caused by the random access procedure.~~

$$T_{measurement,\ GSM} = Max\left\{8 \cdot \frac{N_{carriers}}{N_{GSM\ carrier\ RSSI}} \cdot T_{meas}, 4 * T_{meas}, 480ms\right\}$$

where:

$N_{carriers}$ is the number of GSM carriers in the Inter-RAT cell info list

$N_{GSM\ carrier\ RSSI}$ is specified in 8.4.2.5.1.

b) For UE not requiring measurement occasions

$T_{identify,\ GSM} = 150$ ms

$T_{measurement,\ GSM} = 480$ ms

CR-Form-v4

CHANGE REQUEST

⌘   **25.133** CR **295**   ⌘ ev **1** ⌘   Current version: **5.1.0** ⌘

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

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

Title: ⌘	FDD inter frequency measurements and test cases	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI	***Date:*** ⌘ 1/2/2002

Category: ⌘   **A**   ***Release:*** ⌘   Rel-5

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

Reason for change: ⌘	Test cases have not yet been aligned with the general performance requirements.
	The current wording in the definition of Tinter in the general performance requirements does not exactly reflect the original intention. Hence, there could be several interpretations for the same parameter.

Summary of change: ⌘	1) The definition of T_{Inter} is corrected in the general requirements.
	2) Test case A.8.2.1:
	- The square brackets for T1 and T2 are removed from Test case A.8.2.1.
	- Reporting delay requirement for Event 2C is corrected to be according to the identification time requirements defined in the general performance requirements.
	Idle length for slot format 11B = 4.266667 ms
	Idle length with implementation margin (2*0.5 ms) is 3.266667 ms, which corresponds 4 full slots.
	In this compressed mode pattern there are 16 gaps per 480 ms.
	Allowed identification time for inter frequency cell = **9 s**. (according to Section 8.1.2.3.1 Identification of a new cell)
	- Reporting delay requirement for Event 1A is corrected to be according to the identification time requirements of intra frequency cells when compressed mode is activated.
	In the worst case there are 7 gaps per the measurement period (200 ms),

which means that T_{intra} becomes 167.33333 ms ((300 - 7*7) slots = 251 slots).

Allowed identification time for intra frequency cell = **956.2 ms** (according to Section 8.1.2.2.1 Identification of a new cell).

3) Test case A.8.2.2 is removed from this release, since the test case is not yet finalised and the finishing of the test case would require further simulations in order to take the impact of fading propagation condition into account.

Isolated Impact Analysis:

The correction of the definition of T_{inter} has small impact on the requirement of identification time for inter frequency cell but the correction does not have any negative impact on the implementation of the UE following the original wording.

The test case corrections of this CR follow the general performance requirements of TS25.133 and therefore the proposed modifications do not have an impact on implementation or on the requirements of TS25.133.

Consequences if not approved: ⌘	The definition of $T_{Inter\ could}$ be could be interpreted on more than one way. The inter frequency test cases are not aligned with the general performance requirements of TS25.133 and the test cases are not complete.

Clauses affected: ⌘	8.1.2.3.2, A.8.2.1.1, A.8.2.1.2 and A.8.2.2

Other specs affected: ⌘	☐ Other core specifications ⌘	
	☒ Test specifications	34.121
	☐ 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 FDD inter frequency measurements

In the CELL_DCH state when a transmission gap pattern sequence with the "FDD measurements" purpose is provided by the network the UE shall continuously measure identified inter frequency cells and search for new inter frequency cells indicated in the measurement control information.

In order for the requirements in the following subsections to apply the UTRAN must provide a transmission gap pattern sequence with measurement purpose FDD measurement using the following combinations for TGL1, TGL2 and TGD:

Table 8.1

TGL1 [slots]	TGL2 [slots]	TGD [slots]
7	-	undefined
14	-	undefined
10	-	undefined
7	7	15…269
14	14	15…269
10	5	15…269

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

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

A cell shall be considered detectable when CPICH Ec/Io $\geq$ -20 dB, SCH_Ec/Io $\geq$ -17 dB and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

8.1.2.3.2 UE CPICH measurement capability

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 9.1.1 and 9.1.2 with measurement period given by

$$T_{measurement\ inter} = Max\left\{T_{Measurement\_Period\ Inter}, T_{basic\ measurement\ FDD\ inter} \cdot \frac{T_{Measurement\_Period\ Inter}}{T_{Inter}} \cdot N_{Freq}\right\}ms$$

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

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

$X_{basic\ measurement\ FDDinter} = 6$

$T_{Measurement\_Period\ Inter} = 480$ ms. The period used for calculating the measurement period $T_{measurement\_inter}$ for inter frequency CPICH measurements.

$T_{Inter:}$ This is the minimum time ~~as full slots~~ that is available for inter frequency measurements , during the period $T_{Measurement\_Period\ inter}$ with an arbitrarily chosen timing. The minimum time per transmission gap 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 and by assuming 2*0.5 ms for implementation margin and after that taking only full slots into account in the calculation.

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

$T_{basic\_measurement\_FDD\ inter} = 50$ 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 inter frequency measurement control information.

8.1.2.3.3 Periodic Reporting

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

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 and section 8.1.2.3.

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables A.8.9 and A.8.10 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

Table A.8.9: 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 1	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Threshold non used frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range	dB	4	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		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.8.10: 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	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		-1.049		−0.941		−0.941	
$\hat{I}_{or}/I_{oc}$	dB	0	4.39	-Infinity	2.39	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/Io	dB	-13	-13	-Infinity	-15	-14	-14
Propagation Condition	AWGN						

A.8.2.1.2   Test Requirements

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 9~~5~~ seconds from the beginning of time period T1.

b) The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 956.2~~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.

The rate of correct events observed during repeated tests shall be at least 90%.

A.8.2.2   Correct reporting of neighbours in Fading propagation condition

A.8.2.2.1   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 parameters are given in Table A.8.11 and A.8.12. In the measurement control information it is indicated to the UE that event-triggered reporting 2C shall be used.

Table A.8.11: 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	
Compressed mode		Case 2.1	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Absolute Threshold (Ec/N0) for Event 2c	dB	-18	
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		Total 24 X on frequency Channel 2	Measurement control information is sent before the compressed mode pattern starts.

Table A.8.12: Test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Cell 1	Cell 2
UTRA RF Channel Number		Channel 1	Channel 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	0	-1.8
I_{oc}	dBm/3.84 MHz	-70	-70
CPICH_Ec/Io	dB	-13	-14
Propagation Condition		Case 5 as specified in Annex B of TS25.101	

A.8.2.2.2   Test Requirements

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 5 seconds from the start of the test.

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

The rate of correct events observed during repeated tests shall be at least TBD%.

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.8.13 and A.8.14. In the measurement control information it is indicated to the UE that event triggered reporting with Event 2C shall be used.

Table A.8.13: 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 as 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.8.14: 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

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than [5] seconds from the start of time period T2.

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

										CR-Form-v4

CHANGE REQUEST

⌘   **25.133** CR **294**   ⌘ ev **1** ⌘   Current version: **4.3.0** ⌘

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

Title: ⌘	FDD inter frequency measurements and test cases
Source: ⌘	RAN WG4

Work item code: ⌘	TEI	***Date:*** ⌘	1/2/2002

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

Reason for change: ⌘	Test cases have not yet been aligned with the general performance requirements. The current wording in the definition of Tinter in the general performance requirements does not exactly reflect the original intention. Hence, there could be several interpretations for the same parameter.

Summary of change: ⌘	1) The definition of T_{Inter} is corrected in the general requirements.
	
	2) Test case A.8.2.1:
	
	- The square brackets for T1 and T2 are removed from Test case A.8.2.1.
	
	- Reporting delay requirement for Event 2C is corrected to be according to the identification time requirements defined in the general performance requirements.
	
	  Idle length for slot format 11B = 4.266667 ms
	
	  Idle length with implementation margin (2*0.5 ms) is 3.266667 ms, which corresponds 4 full slots.
	
	  In this compressed mode pattern there are 16 gaps per 480 ms.
	
	  Allowed identification time for inter frequency cell = **9 s**. (according to Section 8.1.2.3.1 Identification of a new cell)
	
	- Reporting delay requirement for Event 1A is corrected to be according to the identification time requirements of intra frequency cells when compressed mode is activated.
	
	  In the worst case there are 7 gaps per the measurement period (200 ms),

which means that T_{intra} becomes 167.33333 ms ((300 - 7*7) slots = 251 slots).

Allowed identification time for intra frequency cell = **956.2 ms** (according to Section 8.1.2.2.1 Identification of a new cell).

3) Test case A.8.2.2 is removed from this release, since the test case is not yet finalised and the finishing of the test case would require further simulations in order to take the impact of fading propagation condition into account.

<u>Isolated Impact Analysis:</u>

The correction of the definition of T_{inter} has small impact on the requirement of identification time for inter frequency cell but the correction does not have any negative impact on the implementation of the UE following the original wording.

The test case corrections of this CR follow the general performance requirements of TS25.133 and therefore the proposed modifications do not have an impact on implementation or on the requirements of TS25.133.

Consequences if not approved:	⌘	The definition of $T_{Inter\ could}$ be could be interpreted on more than one way. The inter frequency test cases are not aligned with the general performance requirements of TS25.133 and the test cases are not complete.

Clauses affected:	⌘	8.1.2.3.2, A.8.2.1.1, A.8.2.1.2 and A.8.2.2		
Other specs affected:	⌘	☐ Other core specifications ☒ Test specifications ☐ O&M Specifications	⌘	 34.121
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 FDD inter frequency measurements

In the CELL_DCH state when a transmission gap pattern sequence with the "FDD measurements" purpose is provided by the network the UE shall continuously measure identified inter frequency cells and search for new inter frequency cells indicated in the measurement control information.

In order for the requirements in the following subsections to apply the UTRAN must provide a transmission gap pattern sequence with measurement purpose FDD measurement using the following combinations for TGL1, TGL2 and TGD:

Table 8.1

TGL1 [slots]	TGL2 [slots]	TGD [slots]
7	-	undefined
14	-	undefined
10	-	undefined
7	7	15…269
14	14	15…269
10	5	15…269

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

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

A cell shall be considered detectable when CPICH Ec/Io $\geq$ -20 dB, SCH_Ec/Io $\geq$ -17 dB and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

8.1.2.3.2 UE CPICH measurement capability

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 9.1.1 and 9.1.2 with measurement period given by

$$
T_{measurement\ inter} = Max\left\{T_{Measurement\_Period\ Inter}, T_{basic\ measurement\ FDD\ inter} \cdot \frac{T_{Measurement\_Period\ Inter}}{T_{Inter}} \cdot N_{Freq}\right\} ms
$$

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

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

$X_{basic\ measurement\ FDDinter} = 6$

$T_{Measurement\_Period\ Inter} = 480$ ms. The period used for calculating the measurement period $T_{measurement\_inter}$ for inter frequency CPICH measurements.

$T_{Inter::}$ This is the minimum time ~~as full slots~~ that is available for inter frequency measurements , during the period $T_{Measurement\_Period\ inter}$ with an arbitrarily chosen timing. The minimum time per transmission gap 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 and by assuming 2*0.5 ms for implementation margin and after that taking only full slots into account in the calculation.

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

$T_{basic\_measurement\_FDD\ inter} = 50$ 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 inter frequency measurement control information.

8.1.2.3.3 Periodic Reporting

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

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 and section 8.1.2.3.

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables A.8.9 and A.8.10 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

Table A.8.9: 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 1	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Threshold non used frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range	dB	4	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		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.8.10: 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	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		-1.049		−0.941		−0.941	
$\hat{I}_{or}/I_{oc}$	dB	0	4.39	-Infinity	2.39	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/Io	dB	-13	-13	-Infinity	-15	-14	-14
Propagation Condition	AWGN						

A.8.2.1.2 Test Requirements

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 9<s>5</s> seconds from the beginning of time period T1.

b) The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 956.2<s>800</s> 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.

The rate of correct events observed during repeated tests shall be at least 90%.

A.8.2.2 Correct reporting of neighbours in Fading propagation condition

A.8.2.2.1 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 parameters are given in Table A.8.11 and A.8.12. In the measurement control information it is indicated to the UE that event-triggered reporting 2C shall be used.

Table A.8.11: 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	
Compressed mode		Case 2.1	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Absolute Threshold (Ec/N0) for Event 2c	dB	-18	
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		Total 24 X on frequency Channel 2	Measurement control information is sent before the compressed mode pattern starts.

Table A.8.12: Test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Cell 1	Cell 2
UTRA RF Channel Number		Channel 1	Channel 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	0	-1.8
I_{oc}	dBm/3.84 MHz	-70	-70
CPICH_Ec/Io	dB	-13	-14
Propagation Condition	Case 5 as specified in Annex B of TS25.101		

A.8.2.2.2 Test Requirements

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 5 seconds from the start of the test.

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

The rate of correct events observed during repeated tests shall be at least TBD%.

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.8.13 and A.8.14. In the measurement control information it is indicated to the UE that event triggered reporting with Event 2C shall be used.

Table A.8.13: 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 as 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.8.14: 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

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than [5] seconds from the start of time period T2.

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

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CHANGE REQUEST

⌘   **25.133 CR 291**   ⌘ ev **1** ⌘   Current version: **3.8.0** ⌘

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

Title: ⌘	FDD inter frequency measurements and test cases	
Source: ⌘	RAN WG4	
Work item code: ⌘		*Date:* ⌘ 1/2/2002

Category: ⌘ **F**	*Release:* ⌘ R99

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

Reason for change: ⌘	Test cases have not yet been aligned with the general performance requirements.
	The current wording in the definition of Tinter in the general performance requirements does not exactly reflect the original intention. Hence, there could be several interpretations for the same parameter.

Summary of change: ⌘	1) The definition of T_{Inter} is corrected in the general requirements.
	2) Test case A.8.2.1:
	- The square brackets for T1 and T2 are removed from Test case A.8.2.1.
	- Reporting delay requirement for Event 2C is corrected to be according to the identification time requirements defined in the general performance requirements.
	Idle length for slot format 11B = 4.266667 ms
	Idle length with implementation margin (2*0.5 ms) is 3.266667 ms, which corresponds 4 full slots.
	In this compressed mode pattern there are 16 gaps per 480 ms.
	Allowed identification time for inter frequency cell = **9 s**. (according to Section 8.1.2.3.1 Identification of a new cell)
	- Reporting delay requirement for Event 1A is corrected to be according to the identification time requirements of intra frequency cells when compressed mode is activated.
	In the worst case there are 7 gaps per the measurement period (200 ms),

which means that T_{intra} becomes 167.33333 ms ((300 - 7*7) slots = 251 slots).

Allowed identification time for intra frequency cell = **956.2 ms** (according to Section 8.1.2.2.1 Identification of a new cell).

Isolated Impact Analysis:

The correction of the definition of T_{inter} has small impact on the requirement of identification time for inter frequency cell but the correction does not have any negative impact on the implementation of the UE following the original wording.

The test case corrections of this CR follow the general performance requirements of TS25.133 and therefore the proposed modifications do not have an impact on implementation or on the requirements of TS25.133.

Consequences if not approved:	⌘	The definition of $T_{Inter\ could}$ be could be interpreted on more than one way. The inter frequency test cases are not aligned with the general performance requirements of TS25.133 and the test cases are not complete.

Clauses affected:	⌘	8.1.2.3.2, A.8.2.1.1 and A.8.2.1.2		
Other specs affected:	⌘	☐ Other core specifications **X** Test specifications ☐ O&M Specifications	⌘	 34.121
Other comments:	⌘			

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

8.1.2.3   FDD inter frequency measurements

In the CELL_DCH state when a transmission gap pattern sequence with the "FDD measurements" purpose is provided by the network the UE shall continuously measure identified inter frequency cells and search for new inter frequency cells indicated in the measurement control information.

In order for the requirements in the following subsections to apply the UTRAN must provide a transmission gap pattern sequence with measurement purpose FDD measurement using the following combinations for TGL1, TGL2 and TGD:

Table 8.1

TGL1 [slots]	TGL2 [slots]	TGD [slots]
7	-	undefined
14	-	undefined
10	-	undefined
7	7	15…269
14	14	15…269
10	5	15…269

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

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

A cell shall be considered detectable when CPICH Ec/Io $\geq$ -20 dB, SCH_Ec/Io $\geq$ -17 dB and SCH_Ec/Ior is equally divided between primary synchronisation code and secondary synchronisation code. When L3 filtering is used an additional delay can be expected.

8.1.2.3.2   UE CPICH measurement capability

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 9.1.1 and 9.1.2 with measurement period given by

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

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

The UE shall be capable of performing CPICH measurements for $X_{\text{basic measurement FDD inter}}$ inter-frequency cells per FDD frequency of the monitored set or the virtual active set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of $\text{T}_{\text{Measurement\_ Inter}}$.

$X_{\text{basic measurement FDDinter}} = 6$

$\text{T}_{\text{Measurement\_Period Inter}} = 480$ 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 ~~as full slots~~ that is available for inter frequency measurements , during the period $\text{T}_{\text{Measurement\_Period inter}}$ with an arbitrarily chosen timing. The minimum time per transmission gap 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 and by assuming 2*0.5 ms for implementation margin and after that taking only full slots into account in the calculation.

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

$T_{basic\_measurement\_FDD\ inter} = 50$ 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 inter frequency measurement control information.

8.1.2.3.3 Periodic Reporting

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

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 and section 8.1.2.3.

The test consists of two successive time periods, with a time duration T1 and T2. The test parameters are given in tables A.8.9 and A.8.10 below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 1A and 2C shall be used. The CPICH Ec/I0 of the best cell on the unused frequency shall be reported together with Event 2C reporting.

Table A.8.9: 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 1	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Threshold non used frequency	dB	-18	Absolute Ec/I0 threshold for event 2C
Reporting range	dB	4	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		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.8.10: 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	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		-1.049		−0.941		−0.941	
$\hat{I}_{or}/I_{oc}$	dB	0	4.39	- Infinity	2.39	-1.8	-1.8
I_{oc}	dBm/3.84 MHz	-70				-70	
CPICH_Ec/Io	dB	-13	-13	- Infinity	-15	-14	-14
Propagation Condition	AWGN						

A.8.2.1.2 Test Requirements

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 9~~5~~ seconds from the beginning of time period T1.

b) The UE shall send one Event 1A triggered measurement report, with a measurement reporting delay less than 956.2~~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.

The rate of correct events observed during repeated tests shall be at least 90%.

A.8.2.2 Correct reporting of neighbours in Fading propagation condition

A.8.2.2.1 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 parameters are given in Table A.8.11 and A.8.12. In the measurement control information it is indicated to the UE that event-triggered reporting 2C shall be used.

Table A.8.11: 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	
Compressed mode		Case 2.1	As specified in TS 25.101 section A.5.
Active cell		Cell 1	
Absolute Threshold (Ec/N0) for Event 2c	dB	-18	
Hysteresis	dB	0	
Time to Trigger	ms	0	
Filter coefficient		0	
Monitored cell list size		Total 24 X on frequency Channel 2	Measurement control information is sent before the compressed mode pattern starts.

Table A.8.12: Test parameters for Correct reporting of neighbours in Fading propagation condition

Parameter	Unit	Cell 1	Cell 2
UTRA RF Channel Number		Channel 1	Channel 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	0	-1.8
I_{oc}	dBm/3.84 MHz	-70	-70
CPICH_Ec/Io	dB	-13	-14
Propagation Condition	Case 5 as specified in Annex B of TS25.101		

A.8.2.2.2 Test Requirements

a) The UE shall send one Event 2C triggered measurement report, with a measurement reporting delay less than 5 seconds from the start of the test.

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

The rate of correct events observed during repeated tests shall be at least TBD%.

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.133** CR **261** | ⌘ | ev | **1** | ⌘ | Current version: | **5.1.0** | ⌘ |

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

Title: ⌘	Mapping of UE Rx-Tx time difference type 1	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI	***Date:*** ⌘ 1/2/2002

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

Reason for change: ⌘	The current mapping of the UE Rx-Tx time difference type 1 measurement in 25.133 is not inline with the signalling range defined in 25.331.
Summary of change: ⌘	The mapping of the UE Rx-Tx time difference type 1 is aligned with the mapping in 25.331, i.e. by changing the granularity in the reporting from 1/16th of a chip to 1 chip. To avoid having RAN2 to change the integer range in 25.331 also the the mapping to integers is aligned with what is currently specified in 25.331, i.e. starting at the value 768 and ending at the value 1280.

Also the brackets around the measurement period (100ms) is proposed to be removed as it has been in the specification for a very long time and has not been questioned.

Isolated Impact analysis:
Correction to a function where the specification was:
• Contradictory between 25.133 and 25.331
Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

The corrected functionality is the UE Rx-Tx time difference type 1 measurement.
• If the network implements the change but not the UE, there will be a mismatch in the number of bits expected for the reporting of the measurement quantity
• If the UE implements the change but not the network, there will be a mismatch in the number of bits expected for the reporting of the measurement quantity |
| ***Consequences if not approved:*** ⌘ | The mapping of the UE Rx-Tx time difference measurement will not be inline with the signalling defined in 25.331 meaning that it will not be clear which measured value the signalled value corresponds too. Therefore the measurement will not be useful. |
| ***Clauses affected:*** ⌘ | 9.1.9 |

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

Other comments:	⌘	Corresponding R99 CR in Tdoc R4-020416

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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.

9.1.9 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 9.25

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 9.26 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.26

Reported value	Measured quantity value	Unit
RX-TX_TIME _768~~0000~~	UE Rx-Tx Time difference type 1< 768~~.000~~	chip
RX-TX_TIME _769~~0001~~	768~~.000~~ ≤ UE Rx-Tx Time difference type 1< 769~~8.0625~~	chip
RX-TX_TIME _770~~0002~~	769~~8.0625~~ ≤ UE Rx-Tx Time difference type 1< 770~~68.1250~~	chip
RX-TX_TIME _771~~0003~~	770~~68.1250~~ ≤ UE Rx-Tx Time difference type 1< 771~~68.1875~~	chip
…	…	…
RX-TX_TIME _1277~~8190~~	1276~~9.8125~~ ≤ UE Rx-Tx Time difference type 1< 1277~~9.8750~~	chip
RX-TX_TIME _1278~~8191~~	1277~~9.8750~~ ≤ UE Rx-Tx Time difference type 1< 1278~~9.9375~~	chip
RX-TX_TIME _1279~~8192~~	1278~~9.9375~~ ≤ UE Rx-Tx Time difference type 1< 1279~~80.0000~~	chip
RX-TX_TIME _1280~~8193~~	1280~~.0000~~ ≤ UE Rx-Tx Time difference type 1	chip

CR-Form-v4

CHANGE REQUEST

⌘　**25.133** CR **260**　⌘　ev **1**　⌘　Current version: **4.3.0**　⌘

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

Title: ⌘	Mapping of UE Rx-Tx time difference type 1	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI	***Date:*** ⌘ 1/2/2002

Category: ⌘ **A**　　　　　　　　　　　　　　　　　　***Release:*** ⌘ Rel-4

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

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

Reason for change: ⌘	The current mapping of the UE Rx-Tx time difference type 1 measurement in 25.133 is not inline with the signalling range defined in 25.331.
Summary of change: ⌘	The mapping of the UE Rx-Tx time difference type 1 is aligned with the mapping in 25.331, i.e. by changing the granularity in the reporting from 1/16th of a chip to 1 chip. To avoid having RAN2 to change the integer range in 25.331 also the the mapping to integers is aligned with what is currently specified in 25.331, i.e. starting at the value 768 and ending at the value 1280. Also the brackets around the measurement period (100ms) is proposed to be removed as it has been in the specification for a very long time and has not been questioned. Isolated Impact analysis: Correction to a function where the specification was: 　• Contradictory between 25.133 and 25.331 Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise. The corrected functionality is the UE Rx-Tx time difference type 1 measurement. 　• If the network implements the change but not the UE, there will be a mismatch in the number of bits expected for the reporting of the measurement quantity 　• If the UE implements the change but not the network, there will be a mismatch in the number of bits expected for the reporting of the measurement quantity
Consequences if not approved: ⌘	The mapping of the UE Rx-Tx time difference measurement will not be inline with the signalling defined in 25.331 meaning that it will not be clear which measured value the signalled value corresponds too. Therefore the measurement will not be useful.
Clauses affected: ⌘	9.1.9

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

Other comments:	⌘	Corresponding R99 CR in Tdoc R4-020416

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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.

9.1.9 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 9.25

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 9.26 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.26

Reported value	Measured quantity value	Unit
RX-TX_TIME _7680000	UE Rx-Tx Time difference type 1< 768.000	chip
RX-TX_TIME _7690001	768.000 ≤ UE Rx-Tx Time difference type 1< 7698.0625	chip
RX-TX_TIME _7700002	7698.0625 ≤ UE Rx-Tx Time difference type 1< 77068.1250	chip
RX-TX_TIME _7710003	77068.1250 ≤ UE Rx-Tx Time difference type 1< 77168.1875	chip
…	…	…
RX-TX_TIME _12778190	12769.8125 ≤ UE Rx-Tx Time difference type 1< 12779.8750	chip
RX-TX_TIME _12788191	12779.8750 ≤ UE Rx-Tx Time difference type 1< 12789.9375	chip
RX-TX_TIME _12798192	12789.9375 ≤ UE Rx-Tx Time difference type 1< 127980.0000	chip
RX-TX_TIME _12808193	1280.0000 ≤ UE Rx-Tx Time difference type 1	chip

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.133** CR **259** | ⌘ | ev | **1** | ⌘ | Current version: | **3.8.0** | ⌘ |

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

Title:	⌘	Mapping of UE Rx-Tx time difference type 1
Source:	⌘	RAN WG4
Work item code: ⌘		*Date:* ⌘ 1/2/2002

Category:	⌘	**F**	*Release:* ⌘	R99

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

Reason for change:	⌘	The current mapping of the UE Rx-Tx time difference type 1 measurement in 25.133 is not inline with the signalling range defined in 25.331.

Summary of change:	⌘	The mapping of the UE Rx-Tx time difference type 1 is aligned with the mapping in 25.331, i.e. by changing the granularity in the reporting from 1/16th of a chip to 1 chip. To avoid having RAN2 to change the integer range in 25.331 also the the mapping to integers is aligned with what is currently specified in 25.331, i.e. starting at the value 768 and ending at the value 1280.

Also the brackets around the measurement period (100ms) is proposed to be removed as it has been in the specification for a very long time and has not been questioned.

<u>Isolated Impact analysis:</u>
Correction to a function where the specification was:
  • Contradictory between 25.133 and 25.331
Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

The corrected functionality is the UE Rx-Tx time difference type 1 measurement.
  • If the network implements the change but not the UE, there will be a mismatch in the number of bits expected for the reporting of the measurement quantity
  • If the UE implements the change but not the network, there will be a mismatch in the number of bits expected for the reporting of the measurement quantity

Consequences if not approved:	⌘	The mapping of the UE Rx-Tx time difference measurement will not be inline with the signalling defined in 25.331 meaning that it will not be clear which measured value the signalled value corresponds too. Therefore the measurement will not be useful.

Clauses affected:	⌘	9.1.9

Other specs affected:	⌘	☐ Other core specifications	⌘	
		☒ Test specifications		34.121
		☐ 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.

9.1.9 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 9.25

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 9.26 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.26

Reported value	Measured quantity value	Unit
RX-TX_TIME _768~~0000~~	UE Rx-Tx Time difference type 1< 768.~~000~~	chip
RX-TX_TIME _769~~0001~~	768.~~000~~ ≤ UE Rx-Tx Time difference type 1< 769~~8.0625~~	chip
RX-TX_TIME _770~~0002~~	769~~8.0625~~ ≤ UE Rx-Tx Time difference type 1< 770~~68.1250~~	chip
RX-TX_TIME _771~~0003~~	770~~68.1250~~ ≤ UE Rx-Tx Time difference type 1< 771~~68.1875~~	chip
…	…	…
RX-TX_TIME _1277~~8190~~	1276~~9.8125~~ ≤ UE Rx-Tx Time difference type 1< 1277~~9.8750~~	chip
RX-TX_TIME _1278~~8191~~	1277~~9.8750~~ ≤ UE Rx-Tx Time difference type 1< 1278~~9.9375~~	chip
RX-TX_TIME _1279~~8192~~	1278~~9.9375~~ ≤ UE Rx-Tx Time difference type 1< 1279~~80.0000~~	chip
RX-TX_TIME _1280~~8193~~	1279~~80.0000~~ ≤ UE Rx-Tx Time difference type 1	chip

<table>
<tr><td colspan="2" align="right"><i>CR-Form-v5</i></td></tr>
<tr><td align="center">CHANGE REQUEST</td></tr>
</table>

⌘ **25.133 CR 258** ⌘**rev** **-** ⌘ Current version: **5.1.0** ⌘

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

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

Title:	⌘	Clarification of measurement period for UTRA Carrier RSSI
Source:	⌘	RAN WG4
Work item code: ⌘	TEI	***Date:*** ⌘ 1/2/2002
Category: ⌘	**A**	***Release:*** ⌘ Rel-5

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

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

Reason for change:	⌘	From the requirement for the UE measurement UTRA Carrier RSSI it is not clear what the measurement period is for the measurement. It refers to section 8 where CPICH merasurement performance is specified but nothing is stated regarding this measurement in section 8.
Summary of change: ⌘		It is clarified that the measurement period for the UTRA carrier RSSI measurement is equal to the measurement period for CPICH measurements as specified in section 8. Also an incorrect reference stating the measurement period for inter-frequency measurement is corrected. <u>Isolated Impact Analysis:</u> The CR clarifies possible ambiguities. Would not affect implementations behaving like indicated in the CR, would affect implementations that do not behave like indicated in the CR.
Consequences if not approved:	⌘	The specified measurement period for UTRA carrier RSSI will be unclear. Different UEs may use different averaging time and would therefore report different measurement results even under the same conditions.

Clauses affected:	⌘	9.1.3

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

Other comments:	⌘	Corresponding R99 CR in Tdoc R4-020109

How to create CRs using this form:

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

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

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

9.1.3 UTRA Carrier RSSI

NOTE: This measurement is for Inter-frequency handover evaluation.

The measurement period is equal to the measurement period for UE CPICH measurements. fFor CELL_DCH state the measurement period can be found in sub clause 8.1.2.2 for intra frequency measurements and in sub clause 8.1.2.32 for inter frequency measurements. The measurement period for CELL_FACH state can be found in sub clause 8.4.2.2 for intra frequency measurements and in sub clause 8.4.2.3 for inter frequency measurements.

9.1.3.1 Absolute accuracy requirement

Table 9.10: UTRA Carrier RSSIInter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal condition	**Extreme condition**	**Io [dBm]**
UTRA Carrier RSSI	dBm	$\pm$ 4	$\pm$ 7	-94...-70
	dBm	$\pm$ 6	$\pm$ 9	-70...-50

CR-Form-v5

CHANGE REQUEST

⌘	**25.133** CR **257**	⌘ **rev**	**-**	⌘	Current version:	**4.3.0**	⌘

*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 ☐ Core Network ☐

Title: ⌘	Clarification of measurement period for UTRA Carrier RSSI	
Source: ⌘	RAN WG4	
Work item code: ⌘	TEI	***Date:*** ⌘ 1/2/2002

Category: ⌘	**A**	***Release:*** ⌘ Rel-4
	Use one of the following categories:	*Use one of the following releases:*
	F *(correction)*	*2 (GSM Phase 2)*
	A *(corresponds to a correction in an earlier release)*	*R96 (Release 1996)*
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	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)*

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Consequences if not approved: ⌘	The specified measurement period for UTRA carrier RSSI will be unclear. Different UEs may use different averaging time and would therefore report different measurement results even under the same conditions.	

Clauses affected: ⌘	9.1.3	
Other specs affected: ⌘	☐ Other core specifications ⌘ **X** Test specifications ☐ O&M Specifications	34.121
Other comments: ⌘	Corresponding R99 CR in Tdoc R4-020109	

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