TSG RAN Meeting #17 **RP-020481**
Biarritz, France, 3 - 6 September, 2002

Title **CRs (Rel-4 and Rel-5 Category A) to TS 25.133**
Source **TSG RAN WG4**
Agenda Item **7.4.4**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-021200	25.133	464		F	Rel-4	4.5.0	Removal of AMR speech codec requirement	TEI4
R4-021340	25.133	468		A	Rel-5	5.3.0	Removal of AMR speech codec requirement	TEI4
R4-021232	25.133	466		F	Rel-4	4.5.0	Completion of FDD-1.28 Mcps TDD	LCRTDD-RF
R4-021233	25.133	467		A	Rel-5	5.3.0	Completion of FDD-1.28 Mcps TDD	LCRTDD-RF

3GPP TSR RAN WG4 Meeting #24 **R4-021200**

Helsinki, Finland 12 - 16 August 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.133** **CR** **464** ⌘ **rev** ⌘ Current version: **4.5.0** ⌘

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

Title:	⌘	Removal of AMR speech codec requirement
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
Date:	⌘	21/08/2002
Category:	⌘	**F**
Release:	⌘	Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	The current version of TS 25.133 is not aligned with TS 26.103. According to TS 26.103, UMTS AMR2 is the default Codec Type in all terminals of Rel-4 and onwards. There is no need anymore to have UMTS AMR requirement included.
Summary of change:	⌘	1- the requirement related to the UMTS AMR codec is removed from the table 6.1 2- reference TS 26.103 is added
Consequences if not approved:	⌘	The TS 25.133 will remain inconsistent with TS 26.103.

Clauses affected:	⌘	2 – 6.4.2

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

Other comments:	⌘	- Equivalent CRs in other Releases: CR468 cat. A to 25.133 v5.3.0

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.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".

[2] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

[3] 3GPP TS 25.101: "UE Radio transmission and reception (FDD)".

[4] 3GPP TS 25.104: "BTS Radio transmission and reception (FDD)".

[5] 3GPP TS 25.102: "UE Radio transmission and reception (TDD)".

[6] 3GPP TS 25.105: "BTS Radio transmission and reception (TDD)".

[7] 3GPP TS 25.212: “Multiplexing and channel coding (FDD)”.

[8] 3GPP TS 25.141: "Base station conformance testing (FDD)".

[9] 3GPP TS 25.142: "Base station conformance testing (TDD)".

[10] 3GPP TS 25.113: "Base station EMC".

[11] 3GPP TR 25.942: "RF System scenarios".

[12] 3GPP TR 25.922: "RRM Strategies".

[13] 3GPP TS 25.215: "Physical Layer Measurements (FDD)".

[14] 3GPP TS 25.225: "Physical Layer Measurements (TDD)".

[15] 3GPP TS 25.302: "Services provided by Physical Layer".

[16] 3GPP TS 25.331: "RRC Protocol Specification".

[17] ETSI ETR 273-1-2: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes"

[18] 3GPP TS 25.214: "Physical layer procedures (FDD)"

[19] 3GPP TS 25.321: "MAC protocol specification"

[20] 3GPP TS 25.303: "Interlayer Procedures in Connected Mode"

[21] 3GPP TS 45.008: "Digital cellular telecommunications system (Phase 2+); Radio subsystem link control"

[22] 3GPP TS 45.005: "Digital cellular telecommunications system (Phase 2+); Radio transmission and reception"

[23] 3GPP TS 26.103: "Speech Codec List for GSM and UMTS

…

6.4.2 Requirements

The UE shall continuously evaluate based on the *Elimination*, *Recovery* and *Blocking* criteria defined below, how TFCs on an uplink DPDCH can be used for the purpose of TFC selection. The evaluation shall be performed for every TFC in the TFCS using the estimated UE transmit power. The UE transmit power estimation for a given TFC shall be made using the UE transmitted power measured over the measurement period, defined in 9.1.6.1 as one slot, and the gain factors of the corresponding TFC.

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

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

The UE shall consider the *Recovery* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC has not been greater than the Maximum UE transmitter power for the last Z successive measurement periods immediately preceding evaluation. 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 detected.

The evaluation of the *Elimination* criterion and the *Recovery* criterion shall be performed at least once per radio frame.

The definitions of the parameters X,Y and Z which shall be used when evaluating the *Elimination* and the *Recovery* criteria when no compressed mode patterns are activated are given in Table 6.0.

Table 6.0: X, Y, Z parameters for TFC selection

X	Y	Z
15	30	30

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~~

Table 6.1: T_{adapt}

Service	**T_{adapt} [ms]**
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].

3GPP TSR RAN WG4 Meeting #24 **R4-021232**

Helsinki, Finland 12 - 16 August 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.133** **CR** **466** ⌘ **rev** ⌘ Current version: **4.5.0** ⌘

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

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

Title:	⌘	**Completion of FDD-1.28 Mcps TDD**
Source:	⌘	RAN WG4
Work item code:	⌘	LCRTDD-RF
Date:	⌘	21/08/2002
Category:	⌘	**F**
Release:	⌘	Rel-4

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

Reason for change: ⌘ Test Ceases in Annex A do not reflect 1.28Mcps TDD Option Parameters.

Summary of change: ⌘ Addition of missing side condition to and inclusion of missing parameters to 1.28 Mcps TDD Option requirements and test cases applicable to terminals supporting this capability:

- UE procedures for TDD measurements: inclusion of side condition definitions appropriate to 1.28 Mcps TDD cells with same compressed mode patterns and requirements on Identification of a new cell, P-CCPCH RSCP measurement period and RRC reporting for requirements in CELL_DCH and CELL_FACH State. The Side Conditions for UEs, which support 1.28Mcps TDD are choosen in line with 25.123 requirements.

- For the Absolute accuracy requirements on P-CCPCH RSCP measurement are splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct the Io units for [dBm/1.28MHz] and the side conditions for 1.28Mcps TDD Option to
  P-CCPCH Ec/Io $\geq$ -8 dB
  DwPCH_Ec/Io $\geq$ -5 dB
  Measurement report mapping remains the same for both TDD Options.

- FDD/TDD Cell Re-selection test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for DwPCH instead of SCH parameters and for Io units to be [dBm/1.28MHz] in LCR case.

- FDD/TDD Handover test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for DwPCH instead of SCH parameters and for Io units to be [dBm/1.28MHz] in LCR case.

- UE procedures TDD measurements test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for the TDD cell for DwPCH

		instead of SCH parameters and for Io units to be [dBm/1.28MHz] in LCR case. - P-CCPCH RSCP Measurements test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for the TDD cell for DwPCH instead of SCH parameters and for Io units to be [dBm/1.28MHz] in LCR case.
Consequences if not approved:	⌘	There could be misleading implementation of Test Requirements for 1.28Mcps TDD Option Test Cases in Test Specification. **Isolated Impact Analysis:** Side conditions and parameters on requirements for 1.28 Mcps TDD have been modified. Would not affect the implementation behaving like indicated in the CR, would affect the implementation not behaving like indicated in the CR.

Clauses affected:	⌘	8.1.2.4.1, 8.4.2.4.1, 9.1.11.1, A.4.4.1, A.5.3.1, A.8.3.1.1, A.9.1.8.1.1			
Other specs affected:	⌘	**Y** / **N** **N**	Other core specifications	⌘	
		Y	Test specifications		34.121
		N	O&M Specifications		
Other comments:	⌘	Equivalent CRs in other Releases: CR467 cat. A to 25.133 v5.3.0			

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8.1.2.4 TDD measurements

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

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

In order for the requirements in the following subsections to apply, the Beacon timeslots of the inter-frequency TDD cells indicated in the measurement control information shall either be synchronised or non-overlapping in time such that the UE can measure an inter-frequency TDD cell at least once in every transmission gap pattern as given in [7] for the slot allocation case in use in this cell and by assuming 2*0.5 ms implementation margin per transmission gap.

UTRAN shall provide a transmission gap pattern sequence with measurement purpose TDD measurement using the combinations for TGL1, TGL2 and TGD in Table 8.2:

Table 8.2

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

8.1.2.4.1 Identification of a new cell

8.1.2.4.1.1 3.84 Mcps TDD Option

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

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

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

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

An inter-frequency TDD cell shall be considered detectable when P-CCPCH Ec/Io ≥ -8 dB and SCH_Ec/Io ≥ -13 dB. ~~a~~

The received P-CCPCH_E_c/I_o is defined as

$$\left(\frac{P-CCPCH\_E_c}{I_o} \right)_{in\ dB} = \left(\frac{P-CCPCH\_E_c}{I_{or}} \right)_{in\ dB} - \left| \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in\ dB}$$

and the received SCH_E_c/I_o is defined as

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

8.1.2.4.1.2 1.28 Mcps TDD Option

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

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

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

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

A cell shall be considered detectable when P-CCPCH Ec/Io > -8 dB and DwPCH_Ec/Io > -5 dB. When L3 filtering is used an additional delay can be expected.

The received P-CCPCH E_c/I_o is defined as

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{P-CCPCH\_E_c}{I_{or}}\right)_{in\ dB} - \left|\frac{I_o}{\hat{I}_{or}}\right|_{in\ dB}$$

The received DwPTS E_c/I_o is defined as

$$\left(\frac{DwPCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{DwPCH\_E_c}{I_{or}}\right)_{in\ dB} - \left|\frac{I_o}{\hat{I}_{or}}\right|_{in\ dB}$$

8.1.2.4.2 P-CCPCH RSCP measurement period

When transmission gaps are scheduled for inter frequency TDD measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.11 and with a measurement period as given by

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

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

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

where

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

$T_{Measurement\_Period\ TDD\ inter}$ = 480 ms. The time period used for calculating the measurement period $T_{measurement\_TDD\ inter}$ for inter frequency P-CCPCH RSCP measurements.

$N_{TDD\ inter}$: This is the smallest resulting integer number of transmission gap patterns in a transmission gap pattern sequence assigned to UE by UTRAN for inter frequency TDD measurements during the time period $T_{Measurement\_Period\ TDD\ inter}$ with an arbitrarily chosen timing.

$N_{basic\_identify\_TDD\ inter}$ =80. This is the number of transmission gap patterns in a transmission gap pattern sequence for inter-frequency TDD measurements during the time period used in the inter frequency TDD equation where the maximum allowed time for the UE to identify a new inter frequency TDD cell is defined.

$N_{basic\_measurement\_TDD\ inter}$ = 5. This is the number of transmission gap patterns in a transmission gap pattern sequence for inter-frequency TDD measurements during the time period $T_{Measurement\_Period\ TDD\ inter}$ with an arbitrarily chosen timing that is used in the inter-frequency TDD equation for defining where the measurement period for inter frequency P-CCPCH RSCP measurements is defined.

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

8.1.2.4.3 Periodic Reporting

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

8.1.2.4.4 Event Triggered Reporting

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

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

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

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify TDD inter}}$ defined in Section 8.1.2.4.1 When L3 filtering is used an additional delay can be expected.

<next changed section>

8.4.2.4 TDD measurements

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

In the CELL_FACH state when a measurement occasion cycle is provided by the network the UE shall continuously measure identified inter frequency TDD cells and search for new inter-frequency TDD cells indicated in the measurement control information.

8.4.2.4.1 Identification of a new cell

8.4.2.4.1.1 3.84 Mcps TDD Option

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

$$T_{identify,\ TDD} = Max\left\{5000, Ceil\left\{\frac{T_{basic\ identify\ TDD\ inter}}{T_{Inter\ FACH}}\right\} \cdot T_{meas} \cdot N_{Freq,TDD}\right\} \text{ ms}$$

where

$T_{basic\_identify\_TDD,inter}$ = 800ms

$N_{Freq,TDD}$: Number of TDD frequencies indicated in the inter-frequency cell info list

T_{Meas} is specified in section 8.4.2.1.

$T_{Inter\ FACH}$ is specified in section 8.4.2.3.1

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

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

An inter-frequency TDD cell shall be considered detectable when P-CCPCH_Ec/Io ≥ -8 dB and SCH_Ec/Io ≥ -13 dB.

The received P-CCPCH_E_c/I_o is defined as

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{P-CCPCH\_E_c}{I_{or}}\right)_{in\ dB} - \left(\frac{I_o}{\hat{I}_{or}}\right)_{in\ dB}$$

and the received SCH_E_c/I_o is defined as

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

8.4.2.4.1.2 1.28 Mcps TDD Option

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

$$T_{identify,\ TDD} = Max\left\{5000, Ceil\left\{\frac{T_{basic\ identify\ TDD\ inter}}{T_{Inter\ FACH}}\right\} \cdot T_{meas} \cdot N_{Freq,TDD}\right\} \text{ ms}$$

where

$T_{basic\_identify\_TDD,inter}$ = 800ms

$N_{Freq,TDD}$: Number of TDD frequencies indicated in the inter-frequency cell info list

T_{Meas} is specified in section 8.4.2.1.

$T_{Inter\ FACH}$ is specified in section 8.4.2.3.1

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

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

A cell shall be considered detectable when P-CCPCH Ec/Io > -8 dB and DwPCH_Ec/Io > -5 dB.

The received P-CCPCH E_c/I_o is defined as

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{P-CCPCH\_E_c}{I_{or}}\right)_{in\ dB} - \left(\frac{I_o}{\hat{I}_{or}}\right)_{in\ dB}$$

The received DwPTS E_c/I_o is defined as

$$\left(\frac{DwPCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{DwPCH\_E_c}{I_{or}}\right)_{in\ dB} - \left(\frac{I_o}{\hat{I}_{or}}\right)_{in\ dB}$$

8.4.2.4.2 P-CCPCH RSCP measurement period

When a measurement occasion cycle as previously described is scheduled for inter frequency TDD measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.11 and with a measurement period as given by

$$T_{measurement\ TDD} = Max\left\{T_{Measurement\_Period\ TDD\ inter}, 2\cdot T_{meas}, Ceil\left\{\frac{T_{basic\ measurement\ TDD\ inter}}{T_{Inter\ FACH}}\right\}\cdot T_{meas}\cdot N_{Freq,TDD}\right\}$$

where

$T_{basic\ measurement\ TDD\ inter}$ = 50 ms.

$T_{Measurement\ Period\ TDD\ inter}$ is specified in section 8.1.2.4.2.

T_{Meas} is specified in section 8.4.2.1.

$T_{Inter\ FACH}$ is specified in section 8.4.2.3.1

$N_{Freq,TDD}$: This is the number of TDD frequencies indicated in the inter-frequency cell info list

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

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

$X_{basic\ measurement\ TDD\ inter}$ is defined in section 8.1.2.4.2

<next changed section>

9.1.11 P-CCPCH RSCP

NOTE: This measurement is used for handover between UTRA FDD and UTRA TDD.

The requirements in this section are valid for terminals supporting this capability.

The measurement period for CELL_DCH state can be found in sub clause 8.1.2.4. The measurement period for CELL_FACH state can be found in sub clause 8.4.2.4.

9.1.11.1 Absolute accuracy requirements

9.1.11.1.1 3.84 Mcps TDD Option

The accuracy requirement in table 9.31is valid under the following conditions:

P-CCPCH_RSCP ≥ -102 dBm.

$$\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{P-CCPCH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 8dB$$

Table 9.31: P-CCPCH_RSCP Inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal conditions	Extreme conditions	Io [dBm/3.84 MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

9.1.11.1.2 1.28 Mcps TDD Option

The accuracy requirement in table 9.31A is valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm

P-CCPCH Ec/Io > -8 dB

Table 9.31A: P-CCPCH_RSCP Inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal conditions	Extreme conditions	Io [dBm/1.28 MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

9.1.11.2 P-CCPCH RSCP measurement report mapping

The reporting range is for *P-CCPCH RSCP* is from -115 ... -25 dBm.

In table 9.32 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.32

Reported value	Measured quantity value	Unit
PCCPCH_RSCP_LEV _00	PCCPCH RSCP< -115	dBm
PCCPCH_RSCP_LEV _01	-115 ≤ PCCPCH RSCP< -114	dBm
PCCPCH_RSCP_LEV _02	-114 ≤ PCCPCH RSCP< -113	dBm
PCCPCH_RSCP_LEV _03	-113 ≤ PCCPCH RSCP< -112	dBm
…	…	…
PCCPCH_RSCP_LEV _89	-27 ≤ PCCPCH RSCP< -26	dBm
PCCPCH_RSCP_LEV _90	-26 ≤ PCCPCH RSCP< -25	dBm
PCCPCH_RSCP_LEV _91	-25 ≤ PCCPCH RSCP	dBm

<next changed section>

A.4.4 FDD/TDD Cell Re-selection

A.4.4.1 Test Purpose and Environment

A.4.4.1.1 3.84 Mcps TDD Option

This test is to verify the requirement for the FDD/TDD cell re-selection delay reported in section 4.2.2.

This scenario implies the presence of UTRA FDD and 1 UTRA TDD cell as given in Table A.4.8, A.4.9 and A4.10. The maximum repetition period of the relevant system information blocks that need to be received by the UE to camp on a cell shall be 1280 ms.

Cell 1 and cell 2 shall belong to different Location Areas.

Table A.4.8: General test parameters for FDD/TDD cell re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	FDD cell
	Neighbour cells		Cell2	TDD cell
Final condition	Active cell		Cell2	TDD cell
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table A.4.9: FDD/TDD cell re-selection

Parameter	Unit	Cell 1	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
P-CCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
OCNS_Ec/Ior	dB	-0.941	
$\hat{I}_{or}/I_{oc}$	dB	9	3
I_{oc}	dBm / 3.84 MHz	-70	
CPICH_RSCP	dBm	-71	-77
Propagation Condition		AWGN	
Cell_selection_and_reselection_quality_measure		CPICH_Ec/No	
Qrxlevmin	dBm	-115	
$Qoffset1_{s,n}$	dB	0	
Qhyst1	dB	0	
PENALTY_TIME	s	0	
TEMPORARY_OFFSET	dB	0	
Treselection	s	0	
Sintrasearch	dB	not sent	
Sintersearch	dB	not sent	

Table A.4.10: Cell 2 specific test parameters for FDD/TDD Cell Re-Selection

Parameter	Unit	Cell 2			
DL timeslot number		**0**		**8**	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH_Ec/Ior	dB	-3		n.a.	
PICH_Ec/Ior	dB	n.a.		-3	
SCH_Ec/Ior	dB	-9			
SCH_t_{offset}	dB	10			
OCNS_Ec/Ior	dB	-3.12			
$\hat{I}_{or}/I_{oc}$	dB	-4	2	-4	2
P-CCPCH RSCP	dBm	-77	-71	n.a.	n.a.
I_{oc}	dBm/3,84 MHz	-70			
Propagation Condition		AWGN			
Qrxlevmin	dBm	-103			
$Qoffset2_{s,n}$	dB	0			
Qhyst2	dB	0			
PENALTY_TIME	s	0			
TEMPORARY_OFFSET	dB	0			
Treselection	s	0			
Sintrasearch	dB	not sent			
Sintersearch	dB	not sent			
Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.					

A.4.4.1.2 1.28 Mcps TDD Option

This test is to verify the requirement for the FDD/TDD cell re-selection delay reported in section 4.2.2.

This scenario implies the presence of UTRA FDD and 1 UTRA TDD cell as given in Table A.4.8A, A.4.9A and A4.10A. The maximum repetition period of the relevant system information blocks that need to be received by the UE to camp on a cell shall be 1280 ms.

Cell 1 and cell 2 shall belong to different Location Areas.

Table A.4.8A: General test parameters for FDD/TDD cell re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	FDD cell
	Neighbour cells		Cell2	TDD cell
Final condition	Active cell		Cell2	TDD cell
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table A.4.9A: FDD/TDD cell re-selection

Parameter	Unit	Cell 1	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
P-CCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
OCNS_Ec/Ior	dB	-0.941	
$\hat{I}_{or}/I_{oc}$	dB	9	3
I_{oc}	dBm / 3.84 MHz	-70	
CPICH_RSCP	dBm	-71	-77
Propagation Condition		AWGN	
Cell_selection_and_reselection_quality_measure		CPICH_Ec/No	
Qrxlevmin	dBm	-115	
$Qoffset1_{s,n}$	dB	0	
Qhyst1	dB	0	
Treselection	s	0	
Sintrasearch	dB	not sent	
Sintersearch	dB	not sent	

Table A.4.10A: Cell 2 specific test parameters for FDD/TDD Cell Re-Selection

Parameter	Unit	Cell 2			
DL timeslot number		0		DwPTs	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH_Ec/Ior	dB	-3			
DwPCH_Ec/Ior	dB			0	
OCNS_Ec/Ior	dB	-3			
$\hat{I}_{or}/I_{oc}$	dB	-4	2	-4	2
P-CCPCH RSCP	dBm	-77	-71		
I_{oc}	dBm/1.28 MHz	-70			
Propagation Condition		AWGN			
Qrxlevmin	dBm	-103			
$Qoffset1_{s,n}$	dB	0			
Qhyst1	dB	0			
Treselection	s	0			
Sintrasearch	dB	not sent			
Sintersearch	dB	not sent			

A.4.4.2 Test Requirements

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE: The cell re-selection delay can be expressed as:

$$T_{evaluateTDD} + T_{SI},$$

where:

$T_{evaluateTDD}$	See Table 4.1 in section 4.2.2.
T_{SI}	Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

<next changed section>

A.5.3 FDD/TDD Handover

A.5.3.1 Test purpose and Environment

A.5.3.1.1 3.84 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CA, A.5.0CB and A.5.0CD below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CA: General test parameters for FDD/TDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 2	TDD cell
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-75	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T_{SI}		s	1.28	The value shall be used for all cells in the test
T1		s	5	
T2		s	15	
T3		s	5	

Table A.5.0CB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1	
		T1, T2	T3
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
P-CCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
DPCH_Ec/Ior	dB	Note 1	n.a.
OCNS_Ec/Ior	dB	Note 2	
$\hat{I}_{or}/I_{oc}$	dB	0	
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-13	
Propagation Condition		AWGN	
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}			

Table A.5.0CC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2								
DL timeslot number		0			2			8		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 2								
P-CCPCH_Ec/Ior	dB	-3			n.a.			n.a.		
PICH_Ec/Ior	dB	n.a.			n.a.			-3		
SCH_Ec/Ior	dB	-9			n.a.			-9		
SCH_t_{offset}	dB	5			n.a.			5		
DPCH_Ec/Ior	dB	n.a.			n.a.		Note 1	n.a.		
OCNS_Ec/Ior	dB	-3.12			0		Note 2	-3.12		
$\hat{I}_{or}/I_{oc}$	dB	-Inf	6		-Inf	6		-Inf	6	
P-CCPCH RSCP	dBm	-Inf	-67		n.a.			n.a.		
I_{oc}	dBm/3,84 MHz	-70								
Propagation Condition		AWGN								
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior. Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.										

A.5.3.1.2 1.28 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0DA, A.5.0DB and A.5.0DD below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0DA: General test parameters for FDD/TDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 2	TDD cell
O		DB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		DB	0	Hysteresis parameter for event 2C
Time to Trigger		Ms	0	
Threshold non-used frequency		DBm	-75	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T_{SI}		S	1.28	The value shall be used for all cells in the test
T1		S	5	
T2		S	15	
T3		S	5	

Table A.5.0DB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1	
		T1, T2	T3
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
P-CCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
DPCH_Ec/Ior	dB	Note 1	n.a.
OCNS_Ec/Ior	dB	Note 2	
$\hat{I}_{or}/I_{oc}$	dB	0	
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-13	
Propagation Condition		AWGN	
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}			

Table A.5.0DC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2					
DL timeslot number		0			DwPTs		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 2					
P-CCPCH_Ec/Ior	dB	-3					
DwPCH_Ec/Ior	dB				0		
DPCH_Ec/Ior	dB						Note 1
OCNS_Ec/Ior	dB	-3					Note 2
$\hat{I}_{or}/I_{oc}$	dB	-Inf	6		-Inf	6	
P-CCPCH RSCP	dBm	-Inf	-67				
I_{oc}	dBm/1.28 MHz	-70					
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior.							

A.5.3.2 Test Requirements

The UE shall start to transmit the UL DPCH to Cell 2 less than 70 ms from the beginning of time period T3.

The rate of correct FDD/TDD handovers observed during repeated tests shall be at least 90%.

<next changed section>

A.8.3 TDD measurements

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

A.8.3.1.1 Test Purpose and Environment

A.8.3.1.1.1 3.84 Mcps TDD Option

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

The test parameters are given in Table A.8.13, A.8.14 and A.8.14A below. The test consists of two successive time periods, with time duration of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA FDD cell and cell 2 being a UTRA TDD neighbour cell.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

The TTI of the uplink DCCH shall be 20ms.

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	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 1	FDD cell
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-71	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1		s	15	
T2		s	10	

Table A.8.14: Cell 1 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 1
		T1, T2
UTRA RF Channel Number		Channel 1
CPICH_Ec/Ior	dB	-10
P-CCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DPCH_Ec/Ior	dB	Note 1
OCNS_Ec/Ior	dB	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.		

Table A.8.14A: Cell 2 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 2			
DL timeslot number		0		8	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH_Ec/Ior	dB	-3		n.a.	
PICH_Ec/Ior	dB	n.a.		-3	
SCH_Ec/Ior	dB	-9			
SCH_t_{offset}	dB	10			
OCNS_Ec/Ior	dB	-3.12			
P-CCPCH RSCP	dBm	-75	-67	n.a.	n.a.
$\hat{I}_{or}/I_{oc}$	dB	-2	6	-2	6
I_{oc}	dBm/3,84 MHz	-70			
Propagation Condition		AWGN			
Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.					

A.8.3.1.1.2 1.28 Mcps TDD Option

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

The test parameters are given in Table A.8.14B, A.8.14C and A.8.14D below. The test consists of two successive time periods, with time duration of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA FDD cell and cell 2 being a UTRA TDD neighbour cell.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

The TTI of the uplink DCCH shall be 20ms.

Table A.8.14B: 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	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 1	FDD cell
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-71	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1		s	15	
T2		s	10	

Table A.8.14C: Cell 1 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 1
		T1, T2
UTRA RF Channel Number		Channel 1
CPICH_Ec/Ior	dB	-10
P-CCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DPCH_Ec/Ior	dB	Note 1
OCNS_Ec/Ior	dB	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.		

Table A.8.14D: Cell 2 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 2			
DL timeslot number		0		DwPTs	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH Ec/Ior	dB	-3			
DwPCH Ec/Ior	dB			0	
OCNS Ec/Ior	dB	-3			
P-CCPCH RSCP	dBm	-75	-67		
$\hat{I}_{or}/I_{oc}$	dB	-2	6	-2	6
I_{oc}	dBm/1.28 MHz	-70			
Propagation Condition		AWGN			

A.8.3.1.2 Test Requirements

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 8.8 s from the beginning of time period T2.

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

The rate of events correctly reported during repeated tests shall be at least 90%.

<next changed section>

A.9.1.8 P-CCPCH RSCP

A.9.1.8.1 Test Purpose and Environment

The purpose of this test is to verify that the P-CCPCH RSCP measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.11 and applies to UE supporting this capability.

A.9.1.8.1.1 Inter frequency test parameters

A.9.1.8.1.1.1 3.84 Mcps TDD Option

In this case both cells are on different frequencies and compressed mode as specified in TS 25.101 section A.5, set 3 of table A.22, is applied. Cell 1 is a UTRA FDD cell and cell 2 is a UTRA TDD cell.

P-CCPCH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in Table A.9.13.

Table A.9.13: P-CCPCH RSCP inter frequency test parameters

Parameter	Unit	Test 1			Test 2		
		Cell 1	Cell 2		Cell 1	Cell 2	
DL timeslot number		n.a.	**0**	**8**	n.a.	**0**	**8**
UTRA RF Channel number		Channel 2	Channel 1		Channel 2	Channel 1	
CPICH_Ec/Ior	dB	-10	n.a.		-10	n.a.	
P-CCPCH_Ec/Ior	dB	-12	-3	n.a.	-12	-3	n.a
SCH_Ec/Ior	dB	-12	-9		-12	-9	
SCH_t_{offset}		n.a.	5		n.a.	5	
PICH_Ec/Ior	dB	-15	n.a.	-3	-15	n.a.	-3
DPCH_Ec/Ior	dB	-15	n.a.		-15	n.a.	
OCNS_Ec/Ior	dB	-1.11	-3.12		-1.11	-3.12	
Ioc	dBm/ 3.84 MHz	-60	-57.7		-84	-84.7	
Îor/Ioc	dB	9.54	7		0	3	
P-CCPCH RSCP, Note 1	dBm	n.a.	-53.7	n.a.	n.a.	-84.7	n.a.
CPICH RSCP, Note 1	dBm	-60.46	n.a.		-94	n.a.	
Io, Note 1	dBm/3.84 MHz	-50	-50		-81	-80	
Propagation condition	-	AWGN			AWGN		
Note 1: P-CCPCH RSCP, CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves. Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.							
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed, test parameters for test 2 shall be set within 5 seconds so that the UE does not lose the Cell 2 in between the test.							

A.9.1.8.1.1.2 1.28 Mcps TDD Option

In this case both cells are on different frequencies and compressed mode as specified in TS 25.101 section A.5, set 3 of table A.22, is applied. Cell 1 is a UTRA FDD cell and cell 2 is a UTRA TDD cell.

P-CCPCH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in Table A.9.13A.

Table A.9.13A: P-CCPCH RSCP inter frequency test parameters

Parameter	Unit	Test 1			Test 2		
		Cell 1	Cell 2		Cell 1	Cell 2	
DL timeslot number		n.a.	**0**	**DwPTs**	n.a.	**0**	**DwPTs**
UTRA RF Channel number		Channel 2	Channel 1		Channel 2	Channel 1	
CPICH_Ec/Ior	dB	-10	n.a.		-10	n.a.	
P-CCPCH_Ec/Ior	dB	-12	-3		-12	-3	
DwPCH_Ec/Ior	dB	-12		0	-12		0
PICH_Ec/Ior	dB	-15	n.a.	n.a.	-15	n.a.	n.a.
DPCH_Ec/Ior	dB	-15	n.a.	n.a.	-15	n.a.	n.a.
OCNS_Ec/Ior	dB	-1.11	-3		-1.11	-3	
Ioc		-60 dBm/ 3.84 MHz	-57.7 dBm/1.28 MHz		-84 dBm/ 3.84 MHz	-84.7 dBm/1.28 MHz	
Îor/Ioc	dB	9.54	7		0	3	
P-CCPCH RSCP, Note 1	dBm	n.a.	-53.7		n.a.	-84.7	
CPICH RSCP, Note 1	dBm	-60.46	n.a.		-94	n.a.	
Io, Note 1		-50 dBm/ 3.84 MHz	-50 dBm/1.28 MHz		-81 dBm/ 3.84 MHz	-80 dBm/1.28 MHz	
Propagation condition	-	AWGN			AWGN		
Note 1: P-CCPCH RSCP, CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed, test parameters for test 2 shall be set within 5 seconds so that the UE does not lose the Cell 2 in between the test.							

A.9.1.8.2 Test Requirements

The P-CCPCH RSCP measurement accuracy shall meet the requirements in section 9.1.11.

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

3GPP TSR RAN WG4 Meeting #24 **R4-021233**

Helsinki, Finland 12 - 16 August 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.133** **CR** **467** ⌘ **rev** ⌘ Current version: **5.3.0** ⌘

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

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

Title:	⌘	**Completion of FDD-1.28 Mcps TDD**
Source:	⌘	RAN WG4
Work item code:	⌘	LCRTDD-RF
Date:	⌘	21/08/2002
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)
Rel-6 (Release 6)

Reason for change:	⌘	Test Ceases in Annex A do not reflect 1.28Mcps TDD Option Parameters.
Summary of change:	⌘	Addition of missing side condition to and inclusion of missing parameters to 1.28 Mcps TDD Option requirements and test cases applicable to terminals supporting this capability: - UE procedures for TDD measurements: inclusion of side condition definitions appropriate to 1.28 Mcps TDD cells with same compressed mode patterns and requirements on Identification of a new cell, P-CCPCH RSCP measurement period and RRC reporting for requirements in CELL_DCH and CELL_FACH State. The Side Conditions for UEs, which support 1.28Mcps TDD are choosen in line with 25.123 requirements. - For the Absolute accuracy requirements on P-CCPCH RSCP measurement are splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct the Io units for [dBm/1.28MHz] and the side conditions for 1.28Mcps TDD Option to P-CCPCH Ec/Io ≥ -8 dB DwPCH_Ec/Io ≥ -5 dB Measurement report mapping remains the same for both TDD Options. - FDD/TDD Cell Re-selection test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for DwPCH instead of SCH parameters and for Io units to be [dBm/1.28MHz] in LCR case. - FDD/TDD Handover test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for DwPCH instead of SCH parameters and for Io units to be [dBm/1.28MHz] in LCR case. - UE procedures TDD measurements test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for the TDD cell for DwPCH

		instead of SCH parameters and for Io units to be [dBm/1.28MHz] in LCR case. - P-CCPCH RSCP Measurements test purpose and environment is splitted for 3.84 Mcps and 1.28 Mcps TDD Options to correct for the TDD cell for DwPCH instead of SCH parameters and for Io units to be [dBm/1.28MHz] in LCR case.
Consequences if not approved:	⌘	There could be misleading implementation of Test Requirements for 1.28Mcps TDD Option Test Cases in Test Specification. **Isolated Impact Analysis:** Side conditions and parameters on requirements for 1.28 Mcps TDD have been modified. Would not affect the implementation behaving like indicated in the CR, would affect the implementation not behaving like indicated in the CR.

Clauses affected:	⌘	8.1.2.4.1, 8.4.2.4.1, 9.1.11.1, A.4.4.1, A.5.3.1, A.8.3.1.1, A.9.1.8.1.1			
Other specs affected:	⌘	Y / N N Y N	Other core specifications Test specifications O&M Specifications	⌘	34.121
Other comments:	⌘	Equivalent CRs in other Releases: CR466 cat. F to 25.133 v4.5.0			

How to create CRs using this form:

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

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

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

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

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8.1.2.4 TDD measurements

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

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

In order for the requirements in the following subsections to apply, the Beacon timeslots of the inter-frequency TDD cells indicated in the measurement control information shall either be synchronised or non-overlapping in time such that the UE can measure an inter-frequency TDD cell at least once in every transmission gap pattern as given in [7] for the slot allocation case in use in this cell and by assuming 2*0.5 ms implementation margin per transmission gap.

UTRAN shall provide a transmission gap pattern sequence with measurement purpose TDD measurement using the combinations for TGL1, TGL2 and TGD in Table 8.2:

Table 8.2

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

8.1.2.4.1 Identification of a new cell

8.1.2.4.1.1 3.84 Mcps TDD Option

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

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

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

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

An inter-frequency TDD cell shall be considered detectable when P-CCPCH Ec/Io ≥ -8 dB and SCH_Ec/Io ≥ -13 dB. ~~a~~

The received P-CCPCH_E_c/I_o is defined as

$$\left(\frac{P-CCPCH\_E_c}{I_o} \right)_{in\ dB} = \left(\frac{P-CCPCH\_E_c}{I_{or}} \right)_{in\ dB} - \left| \frac{I_o}{\left(\hat{I}_{or}\right)} \right|_{in\ dB}$$

and the received SCH_E_c/I_o is defined as

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

8.1.2.4.1.2 1.28 Mcps TDD Option

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

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

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

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

A cell shall be considered detectable when P-CCPCH Ec/Io > -8 dB and DwPCH_Ec/Io > -5 dB. When L3 filtering is used an additional delay can be expected.

The received P-CCPCH E_c/I_o is defined as

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{P-CCPCH\_E_c}{I_{or}}\right)_{in\ dB} - \left|\frac{I_o}{\hat{I}_{or}}\right|_{in\ dB}$$

The received DwPTS E_c/I_o is defined as

$$\left(\frac{DwPCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{DwPCH\_E_c}{I_{or}}\right)_{in\ dB} - \left|\frac{I_o}{\hat{I}_{or}}\right|_{in\ dB}$$

8.1.2.4.2 P-CCPCH RSCP measurement period

When transmission gaps are scheduled for inter frequency TDD measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.11 and with a measurement period as given by

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

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

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

where

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

$T_{Measurement\_Period\ TDD\ inter}$ = 480 ms. The time period used for calculating the measurement period $T_{measurement\_TDD\ inter}$ for inter frequency P-CCPCH RSCP measurements.

$N_{TDD\ inter}$: This is the smallest resulting integer number of transmission gap patterns in a transmission gap pattern sequence assigned to UE by UTRAN for inter frequency TDD measurements during the time period $T_{Measurement\_Period\ TDD\ inter}$ with an arbitrarily chosen timing.

$N_{basic\_identify\_TDD\ inter}$ =80. This is the number of transmission gap patterns in a transmission gap pattern sequence for inter-frequency TDD measurements during the time period used in the inter frequency TDD equation where the maximum allowed time for the UE to identify a new inter frequency TDD cell is defined.

$N_{basic\_measurement\_TDD\ inter}$ = 5. This is the number of transmission gap patterns in a transmission gap pattern sequence for inter-frequency TDD measurements during the time period $T_{Measurement\_Period\ TDD\ inter}$ with an arbitrarily chosen timing that is used in the inter-frequency TDD equation for defining where the measurement period for inter frequency P-CCPCH RSCP measurements is defined.

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

8.1.2.4.3 Periodic Reporting

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

8.1.2.4.4 Event Triggered Reporting

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

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

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

The event triggered measurement reporting delay, measured without L3 filtering shall be less than $T_{\text{identify TDD inter}}$ defined in Section 8.1.2.4.1 When L3 filtering is used an additional delay can be expected.

<next changed section>

8.4.2.4 TDD measurements

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

In the CELL_FACH state when a measurement occasion cycle is provided by the network the UE shall continuously measure identified inter frequency TDD cells and search for new inter-frequency TDD cells indicated in the measurement control information.

8.4.2.4.1 Identification of a new cell

8.4.2.4.1.1 3.84 Mcps TDD Option

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

$$T_{identify,\ TDD} = Max\left\{5000, Ceil\left\{\frac{T_{basic\ identify\ TDD\ inter}}{T_{Inter\ FACH}}\right\} \cdot T_{meas} \cdot N_{Freq,TDD}\right\} \text{ ms}$$

where

$T_{basic\_identify\_TDD,inter}$ = 800ms

$N_{Freq,TDD}$: Number of TDD frequencies indicated in the inter-frequency cell info list

T_{Meas} is specified in section 8.4.2.1.

$T_{Inter\ FACH}$ is specified in section 8.4.2.3.1

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

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

An inter-frequency TDD cell shall be considered detectable when P-CCPCH_Ec/Io ≥ -8 dB and SCH_Ec/Io ≥ -13 dB.

The received P-CCPCH_E_c/I_o is defined as

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{P-CCPCH\_E_c}{I_{or}}\right)_{in\ dB} - \left(\frac{I_o}{\hat{I}_{or}}\right)_{in\ dB}$$

and the received SCH_E_c/I_o is defined as

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

8.4.2.4.1.2 1.28 Mcps TDD Option

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

$$T_{identify,\ TDD} = Max\left\{5000, Ceil\left\{\frac{T_{basic\ identify\ TDD\ inter}}{T_{Inter\ FACH}}\right\} \cdot T_{meas} \cdot N_{Freq,TDD}\right\} \text{ ms}$$

where

$T_{basic\_identify\_TDD,inter}$ = 800ms

$N_{Freq,TDD}$: Number of TDD frequencies indicated in the inter-frequency cell info list

T_{Meas} is specified in section 8.4.2.1.

$T_{Inter\ FACH}$ is specified in section 8.4.2.3.1

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

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

A cell shall be considered detectable when P-CCPCH Ec/Io > -8 dB and DwPCH_Ec/Io > -5 dB.

The received P-CCPCH E_c/I_o is defined as

$$\left(\frac{P-CCPCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{P-CCPCH\_E_c}{I_{or}}\right)_{in\ dB} - \left(\frac{I_o}{\hat{I}_{or}}\right)_{in\ dB}$$

The received DwPTS E_c/I_o is defined as

$$\left(\frac{DwPCH\_E_c}{I_o}\right)_{in\ dB} = \left(\frac{DwPCH\_E_c}{I_{or}}\right)_{in\ dB} - \left(\frac{I_o}{\hat{I}_{or}}\right)_{in\ dB}$$

8.4.2.4.2 P-CCPCH RSCP measurement period

When a measurement occasion cycle as previously described is scheduled for inter frequency TDD measurements the UE physical layer shall be capable of reporting measurements to higher layers with measurement accuracy as specified in sub-clause 9.1.11 and with a measurement period as given by

$$T_{measurement\ TDD} = Max\left\{T_{Measurement\_Period\ TDD\ inter}, 2\cdot T_{meas}, Ceil\left\{\frac{T_{basic\ measurement\ TDD\ inter}}{T_{Inter\ FACH}}\right\}\cdot T_{meas}\cdot N_{Freq,TDD}\right\}$$

where

$T_{basic\ measurement\ TDD\ inter}$ = 50 ms.

$T_{Measurement\ Period\ TDD\ inter}$ is specified in section 8.1.2.4.2.

T_{Meas} is specified in section 8.4.2.1.

$T_{Inter\ FACH}$ is specified in section 8.4.2.3.1

$N_{Freq,TDD}$: This is the number of TDD frequencies indicated in the inter-frequency cell info list

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

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

$X_{basic\ measurement\ TDD\ inter}$ is defined in section 8.1.2.4.2

<next changed section>

9.1.11 P-CCPCH RSCP

NOTE: This measurement is used for handover between UTRA FDD and UTRA TDD.

The requirements in this section are valid for terminals supporting this capability.

The measurement period for CELL_DCH state can be found in sub clause 8.1.2.4. The measurement period for CELL_FACH state can be found in sub clause 8.4.2.4.

9.1.11.1 Absolute accuracy requirements

9.1.11.1.1 3.84 Mcps TDD Option

The accuracy requirement in table 9.31is valid under the following conditions:

P-CCPCH_RSCP ≥ -102 dBm.

$$\left.\frac{I_o}{\left(\hat{I}_{or}\right)}\right|_{in\ dB} - \left.\left(\frac{P-CCPCH\_E_c}{I_{or}}\right)\right|_{in\ dB} \leq 8dB$$

Table 9.31: P-CCPCH_RSCP Inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal conditions	Extreme conditions	Io [dBm/3.84 MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

9.1.11.1.2 1.28 Mcps TDD Option

The accuracy requirement in table 9.31A is valid under the following conditions:

P-CCPCH RSCP ≥ -102 dBm

P-CCPCH Ec/Io > -8 dB

Table 9.31A: P-CCPCH_RSCP Inter frequency absolute accuracy

Parameter	Unit	Accuracy [dB]		Conditions
		Normal conditions	Extreme conditions	Io [dBm/1.28 MHz]
P-CCPCH_RSCP	dBm	± 6	± 9	-94...-70
	dBm	± 8	± 11	-70...-50

9.1.11.2 P-CCPCH RSCP measurement report mapping

The reporting range is for *P-CCPCH RSCP* is from -115 ... -25 dBm.

In table 9.32 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.32

Reported value	Measured quantity value	Unit
PCCPCH_RSCP_LEV _00	PCCPCH RSCP< -115	dBm
PCCPCH_RSCP_LEV _01	-115 ≤ PCCPCH RSCP< -114	dBm
PCCPCH_RSCP_LEV _02	-114 ≤ PCCPCH RSCP< -113	dBm
PCCPCH_RSCP_LEV _03	-113 ≤ PCCPCH RSCP< -112	dBm
…	…	…
PCCPCH_RSCP_LEV _89	-27 ≤ PCCPCH RSCP< -26	dBm
PCCPCH_RSCP_LEV _90	-26 ≤ PCCPCH RSCP< -25	dBm
PCCPCH_RSCP_LEV _91	-25 ≤ PCCPCH RSCP	dBm

<next changed section>

A.4.4 FDD/TDD Cell Re-selection

A.4.4.1 Test Purpose and Environment

A.4.4.1.1 3.84 Mcps TDD Option

This test is to verify the requirement for the FDD/TDD cell re-selection delay reported in section 4.2.2.

This scenario implies the presence of UTRA FDD and 1 UTRA TDD cell as given in Table A.4.8, A.4.9 and A4.10. The maximum repetition period of the relevant system information blocks that need to be received by the UE to camp on a cell shall be 1280 ms.

Cell 1 and cell 2 shall belong to different Location Areas.

Table A.4.8: General test parameters for FDD/TDD cell re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	FDD cell
	Neighbour cells		Cell2	TDD cell
Final condition	Active cell		Cell2	TDD cell
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table A.4.9: FDD/TDD cell re-selection

Parameter	Unit	Cell 1	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
P-CCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
OCNS_Ec/Ior	dB	-0.941	
$\hat{I}_{or}/I_{oc}$	dB	9	3
I_{oc}	dBm / 3.84 MHz	-70	
CPICH_RSCP	dBm	-71	-77
Propagation Condition		AWGN	
Cell_selection_and_reselection_quality_measure		CPICH_Ec/No	
Qrxlevmin	dBm	-115	
$Qoffset1_{s,n}$	dB	0	
Qhyst1	dB	0	
PENALTY_TIME	s	0	
TEMPORARY_OFFSET	dB	0	
Treselection	s	0	
Sintrasearch	dB	not sent	
Sintersearch	dB	not sent	

Table A.4.10: Cell 2 specific test parameters for FDD/TDD Cell Re-Selection

Parameter	Unit	Cell 2			
DL timeslot number		**0**		**8**	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH_Ec/Ior	dB	-3		n.a.	
PICH_Ec/Ior	dB	n.a.		-3	
SCH_Ec/Ior	dB	-9			
SCH_t_{offset}	dB	10			
OCNS_Ec/Ior	dB	-3.12			
$\hat{I}_{or}/I_{oc}$	dB	-4	2	-4	2
P-CCPCH RSCP	dBm	-77	-71	n.a.	n.a.
I_{oc}	dBm/3,84 MHz	-70			
Propagation Condition		AWGN			
Qrxlevmin	dBm	-103			
$Qoffset2_{s,n}$	dB	0			
Qhyst2	dB	0			
PENALTY_TIME	s	0			
TEMPORARY_OFFSET	dB	0			
Treselection	s	0			
Sintrasearch	dB	not sent			
Sintersearch	dB	not sent			
Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.					

A.4.4.1.2 1.28 Mcps TDD Option

This test is to verify the requirement for the FDD/TDD cell re-selection delay reported in section 4.2.2.

This scenario implies the presence of UTRA FDD and 1 UTRA TDD cell as given in Table A.4.8A, A.4.9A and A4.10A. The maximum repetition period of the relevant system information blocks that need to be received by the UE to camp on a cell shall be 1280 ms.

Cell 1 and cell 2 shall belong to different Location Areas.

Table A.4.8A: General test parameters for FDD/TDD cell re-selection

Parameter		Unit	Value	Comment
Initial condition	Active cell		Cell1	FDD cell
	Neighbour cells		Cell2	TDD cell
Final condition	Active cell		Cell2	TDD cell
UE_TXPWR_MAX_RACH		dBm	21	The value shall be used for all cells in the test.
Access Service Class (ASC#0) - Persistence value			1	Selected so that no additional delay is caused by the random access procedure. The value shall be used for all cells in the test.
HCS				Not used
DRX cycle length		s	1.28	The value shall be used for all cells in the test.
T1		s	15	
T2		s	15	

Table A.4.9A: FDD/TDD cell re-selection

Parameter	Unit	Cell 1	
		T1	T2
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
P-CCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
OCNS_Ec/Ior	dB	-0.941	
$\hat{I}_{or}/I_{oc}$	dB	9	3
I_{oc}	dBm / 3.84 MHz	-70	
CPICH_RSCP	dBm	-71	-77
Propagation Condition		AWGN	
Cell_selection_and_reselection_quality_measure		CPICH_Ec/No	
Qrxlevmin	dBm	-115	
$Qoffset1_{s,n}$	dB	0	
Qhyst1	dB	0	
Treselection	s	0	
Sintrasearch	dB	not sent	
Sintersearch	dB	not sent	

Table A.4.10A: Cell 2 specific test parameters for FDD/TDD Cell Re-Selection

Parameter	Unit	Cell 2			
DL timeslot number		0		DwPTs	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH_Ec/Ior	dB	-3			
DwPCH_Ec/Ior	dB			0	
OCNS_Ec/Ior	dB	-3			
$\hat{I}_{or}/I_{oc}$	dB	-4	2	-4	2
P-CCPCH RSCP	dBm	-77	-71		
I_{oc}	dBm/1.28 MHz	-70			
Propagation Condition		AWGN			
Qrxlevmin	dBm	-103			
$Qoffset1_{s,n}$	dB	0			
Qhyst1	dB	0			
Treselection	s	0			
Sintrasearch	dB	not sent			
Sintersearch	dB	not sent			

A.4.4.2 Test Requirements

The cell re-selection delay is defined as the time from the beginning of time period T2, to the moment when the UE camps on Cell 2, and starts to send the RRC CONNECTION REQUEST message to perform a Location Registration on cell 2.

The cell re-selection delay shall be less than 8 s.

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

NOTE: The cell re-selection delay can be expressed as:

$$T_{evaluateTDD} + T_{SI},$$

where:

$T_{evaluateTDD}$	See Table 4.1 in section 4.2.2.
T_{SI}	Maximum repetition period of relevant system info blocks that needs to be received by the UE to camp on a cell. 1280 ms is assumed in this test case.

This gives a total of 7.68 s, allow 8s in the test case.

<next changed section>

A.5.3 FDD/TDD Handover

A.5.3.1 Test purpose and Environment

A.5.3.1.1 3.84 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0CA, A.5.0CB and A.5.0CD below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0CA: General test parameters for FDD/TDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 2	TDD cell
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-75	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T_{SI}		s	1.28	The value shall be used for all cells in the test
T1		s	5	
T2		s	15	
T3		s	5	

Table A.5.0CB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1	
		T1, T2	T3
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
P-CCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
DPCH_Ec/Ior	dB	Note 1	n.a.
OCNS_Ec/Ior	dB	Note 2	
$\hat{I}_{or}/I_{oc}$	dB	0	
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-13	
Propagation Condition		AWGN	
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}			

Table A.5.0CC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2								
DL timeslot number		0			2			8		
		T1	T2	T3	T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 2								
P-CCPCH_Ec/Ior	dB	-3			n.a.			n.a.		
PICH_Ec/Ior	dB	n.a.			n.a.			-3		
SCH_Ec/Ior	dB	-9			n.a.			-9		
SCH_t_{offset}	dB	5			n.a.			5		
DPCH_Ec/Ior	dB	n.a.			n.a.		Note 1	n.a.		
OCNS_Ec/Ior	dB	-3.12			0		Note 2	-3.12		
$\hat{I}_{or}/I_{oc}$	dB	-Inf	6		-Inf	6		-Inf	6	
P-CCPCH RSCP	dBm	-Inf	-67		n.a.			n.a.		
I_{oc}	dBm/3,84 MHz	-70								
Propagation Condition		AWGN								
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior. Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.										

A.5.3.1.2 1.28 Mcps TDD Option

The purpose of this test is to verify the requirement for the FDD/TDD handover delay in CELL_DCH state reported in section 5.3.2.1.

The test parameters are given in Table A.5.0DA, A.5.0DB and A.5.0DD below. In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. The test consists of three successive time periods, with a time duration of T1, T2 and T3 respectively. At the start of time duration T1, the UE may not have any timing information of cell 2.

UTRAN shall send a Physical Channel reconfiguration message with activation time at the beginning of T3 with a new active cell, cell 2. The Physical Channel reconfiguration message shall be sent to the UE such that the delay between the end of the last received TTI containing the message and the beginning of T3 is at least equal to the RRC procedure delay as defined in [16].

The UL DPCH in cell 2 shall be transmitted in timeslot 10.

Table A.5.0DA: General test parameters for FDD/TDD handover

Parameter		Unit	Value	Comment
DCH parameters			DL Reference Measurement Channel 12.2 kbps	As specified in TS 25.101 section A.3.1 and in TS 25.102 section A.2.2
Power Control			On	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 2	TDD cell
O		DB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		DB	0	Hysteresis parameter for event 2C
Time to Trigger		Ms	0	
Threshold non-used frequency		DBm	-75	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T_{SI}		S	1.28	The value shall be used for all cells in the test
T1		S	5	
T2		S	15	
T3		S	5	

Table A.5.0DB: Cell 1 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 1	
		T1, T2	T3
UTRA RF Channel Number		Channel 1	
CPICH_Ec/Ior	dB	-10	
P-CCPCH_Ec/Ior	dB	-12	
SCH_Ec/Ior	dB	-12	
PICH_Ec/Ior	dB	-15	
DPCH_Ec/Ior	dB	Note 1	n.a.
OCNS_Ec/Ior	dB	Note 2	
$\hat{I}_{or}/I_{oc}$	dB	0	
I_{oc}	dBm/3.84 MHz	-70	
CPICH_Ec/Io	dB	-13	
Propagation Condition		AWGN	
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}			

Table A.5.0DC: Cell 2 specific test parameters for FDD/TDD handover

Parameter	Unit	Cell 2					
DL timeslot number		0			DwPTs		
		T1	T2	T3	T1	T2	T3
UTRA RF Channel Number		Channel 2					
P-CCPCH_Ec/Ior	dB	-3					
DwPCH_Ec/Ior	dB				0		
DPCH_Ec/Ior	dB						Note 1
OCNS_Ec/Ior	dB	-3					Note 2
$\hat{I}_{or}/I_{oc}$	dB	-Inf	6		-Inf	6	
P-CCPCH RSCP	dBm	-Inf	-67				
I_{oc}	dBm/1.28 MHz	-70					
Propagation Condition		AWGN					
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior.							

A.5.3.2 Test Requirements

The UE shall start to transmit the UL DPCH to Cell 2 less than 70 ms from the beginning of time period T3.

The rate of correct FDD/TDD handovers observed during repeated tests shall be at least 90%.

<next changed section>

A.8.3 TDD measurements

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

A.8.3.1.1 Test Purpose and Environment

A.8.3.1.1.1 3.84 Mcps TDD Option

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

The test parameters are given in Table A.8.13, A.8.14 and A.8.14A below. The test consists of two successive time periods, with time duration of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA FDD cell and cell 2 being a UTRA TDD neighbour cell.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

The TTI of the uplink DCCH shall be 20ms.

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	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 1	FDD cell
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-71	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1		s	15	
T2		s	10	

Table A.8.14: Cell 1 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 1
		T1, T2
UTRA RF Channel Number		Channel 1
CPICH_Ec/Ior	dB	-10
P-CCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DPCH_Ec/Ior	dB	Note 1
OCNS_Ec/Ior	dB	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.		

Table A.8.14A: Cell 2 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 2			
DL timeslot number		0		8	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH_Ec/Ior	dB	-3		n.a.	
PICH_Ec/Ior	dB	n.a.		-3	
SCH_Ec/Ior	dB	-9			
SCH_t_{offset}	dB	10			
OCNS_Ec/Ior	dB	-3.12			
P-CCPCH RSCP	dBm	-75	-67	n.a.	n.a.
$\hat{I}_{or}/I_{oc}$	dB	-2	6	-2	6
I_{oc}	dBm/3,84 MHz	-70			
Propagation Condition		AWGN			
Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.					

A.8.3.1.1.2 1.28 Mcps TDD Option

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

The test parameters are given in Table A.8.14B, A.8.14C and A.8.14D below. The test consists of two successive time periods, with time duration of T1 and T2 respectively. Two cells shall be present in the test, cell 1 being the serving UTRA FDD cell and cell 2 being a UTRA TDD neighbour cell.

In the measurement control information it is indicated to the UE that event-triggered reporting with Event 2C shall be used. The P-CCPCH RSCP of the best cell on the unused frequency shall be reported together with Event 2C reporting. At the start of time duration T1, the UE may not have any timing information of cell 2.

The TTI of the uplink DCCH shall be 20ms.

Table A.8.14B: 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	
Target quality value on DTCH		BLER	0.01	
Compressed mode			A.22 set 3	As specified in TS25.101 section A.5
Initial conditions	Active cell		Cell 1	FDD cell
	Neighbour cell		Cell 2	TDD cell
Final condition	Active cell		Cell 1	FDD cell
O		dB	0	Cell individual offset. This value shall be used for all cells in the test.
Hysteresis		dB	0	Hysteresis parameter for event 2C
Time to Trigger		ms	0	
Threshold non-used frequency		dBm	-71	Applicable for Event 2C
Filter coefficient			0	
Monitored cell list size			6 FDD neighbours on Channel 1 6 TDD neighbours on Channel 2	
T1		s	15	
T2		s	10	

Table A.8.14C: Cell 1 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 1
		T1, T2
UTRA RF Channel Number		Channel 1
CPICH_Ec/Ior	dB	-10
P-CCPCH_Ec/Ior	dB	-12
SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
DPCH_Ec/Ior	dB	Note 1
OCNS_Ec/Ior	dB	Note 2
$\hat{I}_{or}/I_{oc}$	dB	0
I_{oc}	dBm/3.84 MHz	-70
CPICH_Ec/Io	dB	-13
Propagation Condition		AWGN
Note 1: The DPCH level is controlled by the power control loop Note 2 : The power of the OCNS channel that is added shall make the total power from the cell to be equal to I_{or}.		

Table A.8.14D: Cell 2 specific test parameters for Correct reporting of TDD neighbours in AWGN propagation condition

Parameter	Unit	Cell 2			
DL timeslot number		0		DwPTs	
		T1	T2	T1	T2
UTRA RF Channel Number		Channel 2			
P-CCPCH Ec/Ior	dB	-3			
DwPCH Ec/Ior	dB			0	
OCNS Ec/Ior	dB	-3			
P-CCPCH RSCP	dBm	-75	-67		
$\hat{I}_{or}/I_{oc}$	dB	-2	6	-2	6
I_{oc}	dBm/1.28 MHz	-70			
Propagation Condition		AWGN			

A.8.3.1.2 Test Requirements

The UE shall send one Event 2C triggered measurement report for Cell 2 with a measurement reporting delay less than 8.8 s from the beginning of time period T2.

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

The rate of events correctly reported during repeated tests shall be at least 90%.

<next changed section>

A.9.1.8 P-CCPCH RSCP

A.9.1.8.1 Test Purpose and Environment

The purpose of this test is to verify that the P-CCPCH RSCP measurement accuracy is within the specified limits. This test will verify the requirements in section 9.1.11 and applies to UE supporting this capability.

A.9.1.8.1.1 Inter frequency test parameters

A.9.1.8.1.1.1 3.84 Mcps TDD Option

In this case both cells are on different frequencies and compressed mode as specified in TS 25.101 section A.5, set 3 of table A.22, is applied. Cell 1 is a UTRA FDD cell and cell 2 is a UTRA TDD cell.

P-CCPCH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in Table A.9.13.

Table A.9.13: P-CCPCH RSCP inter frequency test parameters

Parameter	Unit	Test 1			Test 2		
		Cell 1	Cell 2		Cell 1	Cell 2	
DL timeslot number		n.a.	**0**	**8**	n.a.	**0**	**8**
UTRA RF Channel number		Channel 2	Channel 1		Channel 2	Channel 1	
CPICH_Ec/Ior	dB	-10	n.a.		-10	n.a.	
P-CCPCH_Ec/Ior	dB	-12	-3	n.a.	-12	-3	n.a
SCH_Ec/Ior	dB	-12	-9		-12	-9	
SCH_t_{offset}		n.a.	5		n.a.	5	
PICH_Ec/Ior	dB	-15	n.a.	-3	-15	n.a.	-3
DPCH_Ec/Ior	dB	-15	n.a.		-15	n.a.	
OCNS_Ec/Ior	dB	-1.11	-3.12		-1.11	-3.12	
Ioc	dBm/ 3.84 MHz	-60	-57.7		-84	-84.7	
Îor/Ioc	dB	9.54	7		0	3	
P-CCPCH RSCP, Note 1	dBm	n.a.	-53.7	n.a.	n.a.	-84.7	n.a.
CPICH RSCP, Note 1	dBm	-60.46	n.a.		-94	n.a.	
Io, Note 1	dBm/3.84 MHz	-50	-50		-81	-80	
Propagation condition	-	AWGN			AWGN		
Note 1: P-CCPCH RSCP, CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves. Note that the transmit energy per PN chip for the SCH is averaged over the 256 chip duration when the SCH is present in the time slot.							
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed, test parameters for test 2 shall be set within 5 seconds so that the UE does not lose the Cell 2 in between the test.							

A.9.1.8.1.1.2 1.28 Mcps TDD Option

In this case both cells are on different frequencies and compressed mode as specified in TS 25.101 section A.5, set 3 of table A.22, is applied. Cell 1 is a UTRA FDD cell and cell 2 is a UTRA TDD cell.

P-CCPCH RSCP inter frequency absolute accuracy requirements are tested by using test parameters in Table A.9.13A.

Table A.9.13A: P-CCPCH RSCP inter frequency test parameters

Parameter	Unit	Test 1			Test 2		
		Cell 1	Cell 2		Cell 1	Cell 2	
DL timeslot number		n.a.	**0**	**DwPTs**	n.a.	**0**	**DwPTs**
UTRA RF Channel number		Channel 2	Channel 1		Channel 2	Channel 1	
CPICH_Ec/Ior	dB	-10	n.a.		-10	n.a.	
P-CCPCH_Ec/Ior	dB	-12	-3		-12	-3	
DwPCH_Ec/Ior	dB	-12		0	-12		0
PICH_Ec/Ior	dB	-15	n.a.	n.a.	-15	n.a.	n.a.
DPCH_Ec/Ior	dB	-15	n.a.	n.a.	-15	n.a.	n.a.
OCNS_Ec/Ior	dB	-1.11	-3		-1.11	-3	
Ioc		-60 dBm/ 3.84 MHz	-57.7 dBm/1.28 MHz		-84 dBm/ 3.84 MHz	-84.7 dBm/1.28 MHz	
Îor/Ioc	dB	9.54	7		0	3	
P-CCPCH RSCP, Note 1	dBm	n.a.	-53.7		n.a.	-84.7	
CPICH RSCP, Note 1	dBm	-60.46	n.a.		-94	n.a.	
Io, Note 1		-50 dBm/ 3.84 MHz	-50 dBm/1.28 MHz		-81 dBm/ 3.84 MHz	-80 dBm/1.28 MHz	
Propagation condition	-	AWGN			AWGN		
Note 1: P-CCPCH RSCP, CPICH RSCP and Io levels have been calculated from other parameters for information purposes. They are not settable parameters themselves.							
Tests shall be done sequentially. Test 1 shall be done first. After test 1 has been executed, test parameters for test 2 shall be set within 5 seconds so that the UE does not lose the Cell 2 in between the test.							

A.9.1.8.2 Test Requirements

The P-CCPCH RSCP measurement accuracy shall meet the requirements in section 9.1.11.

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

3GPP TSR RAN WG4 Meeting #24 **R4-021340**

Helsinki, Finland 12 - 16 August 2002

CR-Form-v7

CHANGE REQUEST

⌘ **25.133** **CR** **468** ⌘ **rev** ⌘ Current version: **5.3.0** ⌘

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

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

Title:	⌘	Removal of AMR speech codec requirement
Source:	⌘	RAN WG4
Work item code:	⌘	TEI4
Date:	⌘	21/08/2002
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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The current version of TS 25.133 is not aligned with TS 26.103. According to TS 26.103, UMTS AMR2 is the default Codec Type in all terminals of Rel-4 and onwards. There is no need anymore to have UMTS AMR requirement included.
Summary of change:	⌘	1- the requirement related to the UMTS AMR codec is removed from the table 6.1 2- reference TS 26.103 is added
Consequences if not approved:	⌘	The TS 25.133 will remain inconsistent with TS 26.103.

Clauses affected:	⌘	2 – 6.4.2

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

Other comments:	⌘	- Equivalent CRs in other Releases: CR464 cat. F to 25.133 v4.5.0

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

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

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

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

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode"

[2] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

[3] 3GPP TS 25.101: "UE Radio transmission and reception (FDD)".

[4] 3GPP TS 25.104: "BTS Radio transmission and reception (FDD)".

[5] 3GPP TS 25.102: "UE Radio transmission and reception (TDD)".

[6] 3GPP TS 25.105: "BTS Radio transmission and reception (TDD)".

[7] 3GPP TS 25.212: “Multiplexing and channel coding (FDD)”.

[8] 3GPP TS 25.141: "Base station conformance testing (FDD)".

[9] 3GPP TS 25.142: "Base station conformance testing (TDD)".

[10] 3GPP TS 25.113: "Base station EMC".

[11] 3GPP TR 25.942: "RF System scenarios".

[12] 3GPP TR 25.922: "RRM Strategies".

[13] 3GPP TS 25.215: "Physical Layer Measurements (FDD)".

[14] 3GPP TS 25.225: "Physical Layer Measurements (TDD)".

[15] 3GPP TS 25.302: "Services provided by Physical Layer".

[16] 3GPP TS 25.331: "RRC Protocol Specification".

[17] ETSI ETR 273-1-2: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Improvement of radiated methods of measurement (using test sites) and evaluation of the corresponding measurement uncertainties; Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-part 2: Examples and annexes"

[18] 3GPP TS 25.214: "Physical layer procedures (FDD)"

[19] 3GPP TS 25.321: "MAC protocol specification"

[20] 3GPP TS 25.303: "Interlayer Procedures in Connected Mode"

[21] 3GPP TS 45.008: "Digital cellular telecommunications system (Phase 2+); Radio subsystem link control"

[22] 3GPP TS 45.005: "Digital cellular telecommunications system (Phase 2+); Radio transmission and reception"

[23] 3GPP TS 26.103: "Speech Codec List for GSM and UMTS"

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6.4.2 Requirements

The UE shall continuously evaluate based on the *Elimination, Recovery* and *Blocking* criteria defined below, how TFCs on an uplink DPDCH can be used for the purpose of TFC selection. The evaluation shall be performed for every TFC in the TFCS using the estimated UE transmit power. The UE transmit power estimation for a given TFC shall be made using the UE transmitted power measured over the measurement period, defined in 9.1.6.1 as one slot, and the gain factors of the corresponding TFC.

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

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

The UE shall consider the *Recovery* criterion for a given TFC to be detected if the estimated UE transmit power needed for this TFC has not been greater than the Maximum UE transmitter power for the last Z successive measurement periods immediately preceding evaluation. 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 detected.

The evaluation of the *Elimination* criterion and the *Recovery* criterion shall be performed at least once per radio frame.

The definitions of the parameters X,Y and Z which shall be used when evaluating the *Elimination* and the *Recovery* criteria when no compressed mode patterns are activated are given in Table 6.0.

Table 6.0: X, Y, Z parameters for TFC selection

X	Y	Z
15	30	30

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~~

Table 6.1: T_{adapt}

Service	**T_{adapt} [ms]**
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].