TSG RAN Meeting #15 **RP-020019**

Cheju, Korea, 5 - 8 March 2002

Title: **CRs (R'99 and Rel-4 Category A) to TS 25.123 (2)**

Source: **TSG RAN WG4**

Agenda Item: **7.4.3**

RAN4 Tdoc	Spec	CR	Rev	Phase	Title	Cat	Curr Ver	New Ver
R4-020400	25.123	147	1	R99	Introduction of Test Case for correct event 1H/I reporting	F	3.8.0	3.9.0
R4-020401	25.123	167	1	Rel-4	Introduction of Test Case for correct event 1H/I reporting	A	4.3.0	4.4.0
R4-020431	25.123	145	1	R99	Corrections measurement requirements in CELL_DCH and CELL_FACH states	F	3.8.0	3.9.0
R4-020432	25.123	166	1	Rel-4	Corrections measurement requirements in CELL_DCH and CELL_FACH states	A	4.3.0	4.4.0
R4-020433	25.123	154	1	R99	Corrections to Idle Mode sections	F	3.8.0	3.9.0
R4-020434	25.123	168	1	Rel-4	Corrections to Idle Mode sections	A	4.3.0	4.4.0

3GPP TSG RAN WG4 Meeting #21 **R4-020431**

Sophia Antipolis, France 28th January - 1st February 2002

CR-Form-v4

CHANGE REQUEST

⌘ **25.123** **CR** **145** ⌘ ev **1** ⌘ Current version: **3.8.0** ⌘

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

Title:	⌘	Correction to measurement requirements in CELL_DCH and CELL_FACH states
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 1/2/2002
Category:	⌘	**F** ***Release:*** ⌘ R99

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

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

Use one of the following releases:

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

Reason for change:	⌘	Current requirements on number of measured intra-frequency neighbour cells in section 8.1.2.2 and 8.4.2.2 for CELL DCH and CELL FACH state are ambiguous with respect to whether these belong to the monitored / detected / active set. A clarification is needed in order to stay within the current assumptions on signalling in 25.331. Especially CELL FACH state does not offer the possibility of measuring and reporting cells belonging to the detected set (25.331), even if in 8.4.2.2, a statement in this sense is made. Need for correction.
Summary of change:	⌘	Clarify whether "identified cell" refers to cells in the monitored / detected / active set for CELL DCH and CELL FACH sections. Remove statement on cells in detected set from CELL_FACH sections.
Consequences if not approved:	⌘	Contradictory specification in 25.331 and 25.123. Isolated impact analysis: This CR is a correction to a function where the specification is ambiguous or not sufficiently explicit. It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected:	⌘	8.1.2.2, 8.4.2.2
Other specs affected:	⌘	- Other core specifications ⌘ - Test specifications - O&M Specifications
Other comments:	⌘	-

8.1.2.2 TDD intra frequency measurements

During the CELL_DCH state the UE shall continuously measure ~~detected~~ identified intra frequency cells and search for new intra frequency cells in the monitoring set. In case the network requests the UE to report ~~unlisted~~ detected set cells, the UE shall also search for intra frequency cells outside the monitored and active set. Cells, which are neither included in the active set nor in the monitored set, and are identified by the UE belong to the detected set according to [16]. Intra frequency measurements can be performed (simultaneously to data reception from the active cell) in all time slots not allocated to transmission nor the time used for inter frequency measurements.

8.1.2.2.1 Identification of a new cell

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

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

8.1.2.2.2 UE P-CCPCH measurement capability

In the CELL_DCH state the measurement period for intra frequency measurements is 200 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing P-CCPCH measurements for 6 ~~detected~~ identified intra-frequency cells of the monitored set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 200 ms. When inter-frequency measurements are required by the network, the UE shall be capable of performing P-CCPCH measurements for at least $Y_{\text{measurement intra}}$ cells, where $Y_{\text{measurement intra}}$ is defined in the following equation. The detectable cells, that were not measured during that measurement period, shall be measured in the following measurement periods. The measurement accuracy for all measured cells shall be as specified in the section 9.

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

whereby function Floor(x) takes the integer part of x.

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

$T_{\text{Measurement\_Period, Intra}}$ = 200 ms. The measurement period for Intra frequency P-CCPCH measurements.

T_{Intra}: This is the minimum time (representing a time corresponding to an integer number of full slots) that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing. It is assumed for the requirement that the slot allocation allows measurement windows to be of minimum duration necessary to perform the measurements.

$T_{\text{basic\_identify\_TDD, intra}}$ = 800 ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new TDD cell is defined. (side conditions are defined in subclause 8.1.2.6).

8.1.2.2.3 Periodic Reporting

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

8.1.2.2.4 Event-triggered Periodic Reporting

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

The first report in event triggered periodic measurement reporting shall meet the requirements specified in section 8.1.2.2.5 Event Triggered Reporting.

8.1.2.2.5 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 resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The event triggered measurement reporting delay, on cells belonging to the monitored set, measured without L3 filtering shall be less than $T_{identify\ intra}$ defined in Section 8.1.2.2.1. When L3 filtering is used an additional delay can be expected..

If a cell, belonging to the monitored set, has been detectable at least for the time period $T_{identify\ intra}$ and then enters the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement\_Period\ Intra}$ when the L3 filter has not been used. and the UE P-CCPCH measurement capabilities of section 8.1.2.2.2 are valid.

< Next changed section >

8.4.2.2 TDD intra frequency measurements

During the CELL_FACH state the UE shall continuously measure ~~detected~~ identified intra frequency cells and search for new intra frequency cells in the monitoring set. ~~In case the network requests the UE to report unlisted cells, the UE shall also search for intra frequency cells outside the monitored set.~~ Intra frequency measurements can be performed (simultaneously to data reception from the active cell) in all time slots not allocated to transmission nor the time used for inter frequency measurements.

8.4.2.2.1 Identification of a new cell

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

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

8.4.2.2.2 UE P-CCPCH measurement capability

In the CELL_FACH state the measurement period for intra frequency measurements is 200 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing P-CCPCH measurements for 6 ~~detected~~ identified intra-frequency cells of the monitored set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 200 ms. When inter-frequency measurements are required by the network, the UE shall be capable of performing P-CCPCH measurements for ~~at least~~ the $Y_{measurement\ intra}$ strongest cells, where $Y_{measurement\ intra}$ is defined in the following equation. The detectable cells, that were not measured during that measurement period, shall be measured in the following measurement periods. The measurement accuracy for all measured cells shall be as specified in the section 9.

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

whereby function Floor(x) takes the integer part of x.

$X_{basic\ measurement\ TDD}$ is specified in section 8.1.2.2.2

$T_{Measurement\_Period,\ Intra}$ is specified in section 8.1.2.2.2

T_{Intra}: is specified in section 8.1.2.2.2

$T_{basic\_identify\_TDD,\ intra}$ is specified in section 8.1.2.2.2

3GPP TSG RAN WG4 Meeting #21 **R4-020434**

Sophia Antipolis, France 28th January - 1st February 2002

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CHANGE REQUEST

⌘ **25.123** **CR** **168** ⌘ ev **1** ⌘ Current version: **4.3.0** ⌘

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

Title:	⌘	Corrections to Idle Mode sections (3.84 Mcps TDD option)
Source:	⌘	RAN WG4
Work item code:	⌘	TEI
Date:	⌘	1/2/2002
Category:	⌘	**A**
Release:	⌘	Rel-4

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

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

Reason for change:	⌘	Camped on Any Cell state: requirements for Cell Re-selection apply to both "Camped Normally" and "Camped on Any Cell" state (TS25.304), but the text in TS25.123 does not reflect this. Correction "detected cell" to "identified cell": The term "detected cell" as used in TS25.123 is not in accordance with definition of sets of cells given in TS25.331, section 8.4. Inter-RAT GSM cell re-selection in Idle Mode: It is not indicated what the criteria for deriving the best-ranked GSM BCCH cell for cell re-selection is. Ambiguities in the text include that ranking as per TS25.304 cannot be performed on a carrier, it can only be performed on a cell bases. It is also unclear if the ranking is based on signal level or if the measurement rules defined in TS25.304 apply. Allowed interruption times in paging monitoring are unclear for inter-frequency and inter-RAT cell re-selection.
Summary of change:	⌘	Add requirements for Camped on Any Cell state for Cell Re-selection. "Detected" cells corrected to "identified" cells. Corrections to inter-RAT GSM cell re-selection sections: - all GSM BCCH carriers in the monitored cell list shall be measured - The 4 highest GSM BCCH carrier are identified and the BSIC verified - The 4 verified GSM BCCH cells are ranked as per the measurement rules in TS25.304. Interruption times in paging monitoring for inter-frequency and inter-RAT cell re-selection set to T_{SI} + 50 ms and T_{BCCH} + 50 ms respectively. Other clarifications.
Consequences if	⌘	Misleading and contradictory specifications (TS25.304, TS25.331, TS25.123).

not approved:	Non-uniform UE behaviour in inter-RAT cell re-selection procedure. Isolated impact analysis: This CR is a correction to a function where the specification is ambiguous or not sufficiently explicit. It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected:	⌘	4.2		
Other specs affected:	⌘	- Other core specifications - Test specifications - O&M Specifications	⌘	
Other comments:	⌘	-		

4 Idle Mode

4.1 Cell Selection

4.1.1 Introduction

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

4.2 Cell Re-selection

4.2.1 Introduction

4.2.1.1 3.84 Mcps TDD option

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

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

4.2.1.2 1.28 Mcps TDD option

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

When the UE is in *Normally Camped* state on a TDD cell, the UE shall attempt to detect, synchronise and monitor intra-frequency, inter-frequency and inter-RAT cells indicated in the measurement control system information of the serving cell. If the occasions/triggers occur, as specified in 25.304, the UE shall perform the Cell Reselection Evaluation process.

4.2.2 Requirements

4.2.2.1 Measurement and evaluation of cell selection criteria $S_{~~rxlev~~}$ of serving cell

4.2.2.1.1 3.84 Mcps TDD option

The UE shall measure the PCCPCH RSCP level of the serving cell and evaluate the cell selection criterion S_{rxlev} defined in TS25.304 for the serving cell at least ~~once per~~ every DRX cycle. The UE shall filter the PCCPCH RSCP measurement of the serving cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$ (see table 4.1).

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

If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells indicated in the measurement control system information for 12 s, the UE shall initiate cell selection procedures for the selected PLMN as defined in TS25.304.

4.2.2.1.2 1.28 Mcps TDD option

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

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

If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells indicated in the measurement control system information for 12 s, the UE shall initiate cell selection procedures for the selected PLMN as defined in TS25.304.

4.2.2.2 Measurement of intra-frequency cells

4.2.2.2.1 3.84 Mcps option

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

The filtering shall be such that the UE shall be capable of evaluating that an intra-frequency cell has become better ranked than the serving cell within $T_{evaluateTDD}$ (see table 4.1), from the moment the intra-frequency cell became at least 2 dB better ranked than the current serving cell, provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the intra frequency cell is better ranked than the serving cell, the UE shall evaluate this intra frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.2.2 1.28 Mcps option

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

The filtering shall be such that the UE shall be capable of evaluating that an intra-frequency cell has become better than the serving cell within $T_{evaluateNTDD}$ (see table 4.1A), from the moment the intra-frequency cell became at least [2] dB better ranked than the current serving cell, provided that Treselection timer is set to zero and PCCPCH RSCP is used as measurement quantity for cell reselection.

If Treselection timer has a non zero value and the intra frequency cell is better ranked than the serving cell, the UE shall evaluate this intra frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.3 Measurement of inter-frequency TDD cells

4.2.2.3.1 3.84 Mcps option

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

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already ~~detected~~ identified inter-frequency cell has become better ranked than the serving cell within ($N_{carrier}$-1) * -$T_{evaluateTDD}$ from the moment the inter-frequency cell became at least 3 dB better than the current serving cell provided that Treselection

timer is set to zero. For non-~~detected~~ identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.3.2 1.28 Mcps option

The UE shall measure PCCPCH RSCP at least every $(N_{carrier}-1) * T_{measureNTDD}$ (see table 4.1A) for inter-frequency cells that are detected and measured according to the measurement rules. The parameter $N_{carrier}$ is the number of carriers used for 1.28 Mcps TDD OPTION cells. The maximum number of carriers is [3] including the carrier the UE is camped on. The UE shall filter PCCPCH RSCP measurements of each measured inter-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureNTDD}/2$.

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already detected inter-frequency cell has become better ranked than the serving cell within $(N_{carrier}-1) * T_{evaluateNTDD}$ from the moment the inter-frequency cell became at least [3] dB better than the current serving cell provided that Treselection timer is set to zero. For non-detected inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least [3] dB better than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.3A 1.28 Mcps TDD to 3.84 Mcps TDD cell re-selection

This requirement only applies to 1.28 Mcps UEs supporting this mode.

The ranking of the low and high chip rate TDD cells shall be made according to the cell reselection criteria specified in TS25.304. The use of mapping functions is indicated in the broadcast.

The UE shall measure PCCPCH RSCP at least every $N_{TDDcarrier} * T_{measureTDD}$ (see table 4.1A) for inter-frequency cells that are detected and measured according to the measurement rules. The parameter $N_{carrier}$ is the number of carriers used for 3.84 Mcps TDD cells. The maximum number of carriers is 3.The UE shall filter PCCPCH RSCP measurements of each measured high chip rate TDD cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$.

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that a high chip rate TDD cell has become better ranked than the serving cell within $N_{TDDcarrier} * T_{evaluateTDD}$ from the moment the inter-frequency cell became at least [3] better ranked than the current serving cell provided that Treselection timer is set to zero. For non-detected inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least [3] dB better than the current serving cell provided that Treselection timer is set to zero.

4.2.2.4 Measurement of inter-frequency FDD cells

4.2.2.4.1 3.84 Mcps option

The UE shall measure the ~~signal level~~ CPICH RSCP and CPICH Ec/Io of each FDD neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in TS25.304, at least every $T_{measureFDD}$ (see table 4.1). The UE shall filter CPICH RSCP measurements of each measured inter-frequency cell using at least 2 measurements which are taken so that the time difference between the measurements is at least $T_{measureFDD}/2$. ~~The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.~~

~~CPICH RSCP is used as basic measurement quantity for cell ranking, t~~The filtering of CPICH RSCP shall be such that the UE shall be capable of evaluating that an already ~~detected~~ identified inter-frequency cell has become better ranked than the serving cell within $N_{carrierFDD} * -T_{evaluateFDD}$ from the moment the inter-frequency cell became at least 5 dB better

than the current serving cell provided that Treselection timer is set to zero. For non-~~detected~~ identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero. The parameter $N_{carrierFDD}$ is the number of carriers used for FDD cells.

If Treselection timer has a non zero value and the inter-frequency cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. If FDD cell has been ranked as the best cell and IE cell_selection_and_reselection-quality_measure is set to CPICH Ec/No, then UE shall perform a second ranking of the FDD cells using CPICH Ec/Io as the measurement quantity, before performing cell re-selection.

4.2.2.4.2 1.28 Mcps option

This requirement only applies to 1.28 Mcps UEs supporting this mode.

The UE shall measure the signal level CPICH RSCP and CPICH Ec/Io of each FDD neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in TS25.304, at least every $T_{measureFDD}$ (see table 4.1A). The UE shall filter CPICH RSCP measurements of each measured inter-frequency cell using at least 2 measurements. The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.

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

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. If FDD cell has been ranked as the best cell and IE cell_selection_and_reselection-quality_measure is set to CPICH Ec/No, then UE shall perform a second ranking of the FDD cells using CPICH Ec/Io as the measurement quantity, before performing cell re-selection.

4.2.2.5 Measurement of inter-RAT GSM cells

4.2.2.5.1 3.84 Mcps option

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

If GSM measurements are required by the measurement rules in TS25.304, ~~T~~the UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 ~~best ranked~~ strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell re-selection criteria in TS25.304. ~~(the best ranked according to the cell reselection criteria defined in TS25.304) at least every 30 seconds if GSM cells are measured according to the measurement rules.~~ If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

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

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

4.2.2.5.2 1.28 Mcps option

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

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

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

4.2.2.6 Evaluation of cell reselection criteria

4.2.2.6.1 3.84 Mcps option

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

UE shall perform ~~C~~cell reselection ~~shall take place~~ immediately after the UE has found a better ranked suitable cell unless less than ~~the UE has made cell reselection within the last~~ 1 second has elapsed from the moment the UE started camping on the current serving cell.

4.2.2.6.2 1.28 Mcps option

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

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

4.2.2.7 Maximum interruption time in paging reception

4.2.2.7.1 3.84 Mcps option

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

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

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

T_{SI} is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS25.331 for a UTRAN cell.

T_{BCCH} is the maximum time allowed to read BCCH data from a GSM cell as defined in TS45.008.

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

Table 4.1: $T_{measureTDD}$, $T_{evaluateTDD}$, $T_{measureFDD}$, $T_{evaluateFDD}$ and $T_{measureGSM}$

DRX cycle length [s]	N_{serv} [(number of ~~successive measurements~~ DRX cycles])]	$T_{measureTDD}$ [s] (number of DRX cycles)	$T_{evaluateTDD}$ [s] (number of DRX cycles)	$T_{measureFDD}$ [s] (number of DRX cycles)	$T_{evaluateFDD}$ [s] (number of DRX cycles)	$T_{measureGSM}$ [s] (number of DRX cycles)
0.08	4	0.64 (8 DRX cycles)	2.56 (32 DRX cycles)	0.64 (8 DRX cycles)	2.56 (32 DRX cycles)	2.56 (32 DRX cycles)
0.16	4	0.64 (4)	2.56 (16)	0.64 (4)	2.56 (16)	2.56 (16)
0.32	4	1.28 (4)	5.12 (16)	1.28 (4)	5.12 (16)	5.12 (16)
0.64	4	1.28 (2)	5.12 (8)	1.28 (2)	5.12 (8)	5.12 (8)
1.28	2	1.28 (1)	6.4 (5)	1.28 (1)	6.4 (5)	6.4 (5)
2.56	2	2.56 (1)	7.68 (3)	2.56 (1)	7.68 (3)	7.68 (3)
5.12	1	5.12 (1)	10.24 (2)	5.12 (1)	10.24 (2)	10.24 (2)

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

4.2.2.7.2 1.28 Mcps option

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

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

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

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

Table 4.1A: $T_{measureNTDD}$, $T_{evaluateNTDD}$, $T_{measureTDD}$, $T_{evaluateTDD}$, $T_{measureFDD}$, $T_{evaluateFDD}$ and $T_{measureGSM}$

DRX cycle length [s]	N_{serv} [number of successive measurements]	$T_{measureNTDD}$ [s] (number of DRX cycles)	$T_{evaluateNTDD}$ [s] (number of DRX cycles)	$T_{measureTDD}$ [s] (number of DRX cycles)	$T_{evaluateTDD}$ [s] (number of DRX cycles)	$T_{measureFDD}$ [s] (number of DRX cycles)	$T_{evaluateFDD}$ [s] (number of DRX cycles)	$T_{measureGSM}$ [s] (number of DRX cycles)
0.08	4	0.64 (8 DRX cycles)	2.56 (32 DRX cycles)	0.64 (8 DRX cycles)	2.56 (32 DRX cycles)	0.64 (8 DRX cycles)	2.56 (32 DRX cycles)	2.56 (32 DRX cycles)
0.16	4	0.64 (4)	2.56 (16)	0.64 (4)	2.56 (16)	0.64 (4)	2.56 (16)	2.56 (16)
0.32	4	1.28 (4)	5.12 (16)	1.28 (4)	5.12 (16)	1.28 (4)	5.12 (16)	5.12 (16)
0.64	4	1.28 (2)	5.12 (8)	1.28 (2)	5.12 (8)	1.28 (2)	5.12 (8)	5.12 (8)
1.28	2	1.28 (1)	6.4 (5)	1.28 (1)	6.4 (5)	1.28 (1)	6.4 (5)	6.4 (5)
2.56	2	2.56 (1)	7.68 (3)	2.56 (1)	7.68 (3)	2.56 (1)	7.68 (3)	7.68 (3)
5.12	1	5.12 (1)	10.24 (2)	5.12 (1)	10.24 (2)	5.12 (1)	10.24 (2)	10.24 (2)

In idle mode, UE shall support DRX cycles lengths 0.64, 1.28, 2.56 and 5.12 s.

4.2.2.8 Number of cells in cell lists

4.2.2.8.1 3.84 Mcps option

For idle mode cell re-selection purposes, the UE shall be capable of monitoring:

- 32 intra-frequency cells (including serving cell), and
- 32 inter-frequency cells, including
  - TDD mode cells on maximum 2 additional TDD carriers, and

- Depending on UE capability, FDD mode cells, distributed on up to 3 FDD carriers~~.~~, and
- Depending on UE capability, 32 inter RAT GSM cells,

as indicated in cell information lists sent in system information (BCCH).

4.2.2.8.2 1.28 Mcps option

The UE shall be capable of monitoring [32] intra-frequency 1.28 Mcps TDD OPTION cells (including serving cell), - [32] inter-frequency cells including low and high chip rate TDD Mode cells and FDD Mode cells if FDD and/or high chip rate TDD is supported by the UE.

The 1.28 Mcps TDD OPTION inter-frequency cells can be located on [x] additional frequencies besides the serving cell.

The inter-frequency cells can be located on up to [x] carriers.

In addition the UE shall be able to monitor 32 GSM carriers if GSM is supported by the UE. UE measurement activity is controlled by measurement rules defined in in TS25.304, allowing the UE to limit its measurement activity if certain conditions are fulfilled.

3GPP TSG RAN WG4 Meeting #21 **R4-020401**

Sophia Antipolis, France 28th January - 1st February 2002

CR-Form-v4

CHANGE REQUEST

⌘ **25.123** **CR** **167** ⌘ ev **1** ⌘ Current version: **4.3.0** ⌘

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

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

Title:	⌘	Introduction of test case for event 1H/I triggered reporting in AWGN (3.84 Mcps TDD option)
Source:	⌘	RAN WG4
Work item code:	⌘	TEI
Date:	⌘	1/2/2002
Category:	⌘	**A**
Release:	⌘	Rel-4

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

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

Reason for change: ⌘ DCA is a critical and well-recognised tool for efficient TDD operation. To achieve its full potential, TDD will rely on the ability of the UE to correctly report TS ISCP measurements upon event triggers 1H and 1I. Currently, section A.8 contains a test case only on event 1G triggered reporting in AWGN.

Summary of change: ⌘ Introduction of test case for event 1H/I triggered reporting in AWGN

Test Environment and Scenario:

The test environment consists of 2 synchronised TDD cells: cell 1 is the serving cell throughout the test and cell 2 a neighbour cell on the same frequency. Beacon Channels are located in TS0 and 8. The 12.2kbps DL DPCH is in TS2. The UE is required to monitor DL TS ISCP on TS2,3,4 of cell 1 and DLTS 4 of cell 2.

The test scenario is a UE monitoring events 1H and 1I on its own active DL DPCH TS2 and in addition on "escape" candidate TS's 3 and 4 of cell 1 and DL TS4 of cell 2.

Test sequence:

TS ISCP is adjusted by Ior hat/Ioc settings of the neighbour cell TS's. There are 5 time periods of 5 sec each in the test.

- At T2, cell 2 starts interfering the UE's active DL TS2 in cell 1 and ISCP increases, the UE must detect and report event 1I on cell 1.
- At T3, ISCP on TS2 returns to normal, i.e. like during T1 and the UE shall detect and report 1H on cell 1 TS2.
- At T4, ISCP on TS4 of cell 1 decreases, the UE must detect and report 1H on cell 1
- At T5, ISCP on TS4 of cell 2 increases and the UE shall detect and

		report 1I on TS4 cell 2
Consequences if not approved:	⌘	Missing critical test case for UE TS ISCP event 1H and 1I reporting. Isolated impact analysis: This CR is a correction to a functionality, event 1H/I reporting, where the specification is not sufficiently explicit and a test case for a critical RRM requirement is missing. It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected:	⌘	New A.8.1.2.1			
Other specs affected:	⌘	-	Other core specifications	⌘	
		-	Test specifications		
		-	O&M Specifications		
Other comments:	⌘	-			

A.8.1.2 Event 1H and 1I triggered reporting in AWGN propagation conditions

A.8.1.2.1 3.84 Mcps TDD option

A.8.1.2.1.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of event 1H and event 1I. This test will partly verify the requirements in section 8.1.2 and section 9.1.

The test parameters are given in Table A.8.1.2, Table A.8.1.2A and Table A.8.1.2B below. The test consists of five successive time periods, with a time duration of T1, T2, T3, T4 and T5 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

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

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

Table A.8.1.2: General test parameters for correct event 1H and 1I reporting in AWGN propagation condition

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

Table A.8.1.2A: Cell 1 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit	Cell 1									
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRA RF Channel Number		Channel 1									
DL timeslot number		**0**					**2**				
PCCPCH_Ec/Ior	dB	-3					n.a.				
SCH_Ec/Ior	dB	-9					n.a.				
SCH_t_{offset}	dB	5					n.a.				
DPCH_Ec/Ior	dB	n.a.					Note 1				
OCNS_Ec/Ior	dB	-3.12					Note 2				
$\hat{I}_{or}/I_{oc}$	dB	4					4				
PCCPCH RSCP	dBm	-69					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
DL timeslot number		**3**					**4**				
PCCPCH_Ec/Ior	dB	n.a.					n.a.				
SCH_Ec/Ior	dB	n.a.					n.a.				
SCH_t_{offset}	dB	n.a.					n.a.				
DPCH_Ec/Ior	dB	n.a.					n.a.				
OCNS_Ec/Ior	dB	0					0				
$\hat{I}_{or}/I_{oc}$	dB	3					0				6
PCCPCH RSCP	dBm	n.a.					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior											

Table A.8.1.2B: Cell 2 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit	Cell 2									
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRA RF Channel Number		Channel 1									
DL timeslot number		**0**					**2**				
PCCPCH_Ec/Ior	dB	-3					n.a.				
SCH_Ec/Ior	dB	-9					n.a.				
SCH_t_{offset}	dB	10					n.a.				
DPCH_Ec/Ior	dB	n.a.					n.a.				
OCNS_Ec/Ior	dB	-3.12					0				
$\hat{I}_{or}/I_{oc}$	dB	1					0	6	0		
PCCPCH RSCP	dBm	-72					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
DL timeslot number		**3**					**4**				
PCCPCH_Ec/Ior	dB	n.a.					n.a.				
SCH_Ec/Ior	dB	n.a.					n.a.				
SCH_t_{offset}	dB	n.a.					n.a.				
DPCH_Ec/Ior	dB	n.a.					n.a.				
OCNS_Ec/Ior	dB	0					0				
$\hat{I}_{or}/I_{oc}$	dB	3					6			0	
PCCPCH RSCP	dBm	n.a.					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									

A.8.1.2.1.2 Test Requirements

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T2.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T3.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T4.

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T5.

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

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

A.8.1.2.2 1.28 Mcps TDD option

Void

3GPP TSG RAN WG4 Meeting #21 **R4-020432**

Sophia Antipolis, France 28th January - 1st February 2002

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CHANGE REQUEST

⌘ **25.123** **CR** **166** ⌘ ev **1** ⌘ Current version: **4.3.0** ⌘

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

Title:	⌘	Correction to measurement requirements in CELL_DCH and CELL_FACH states (3.84 Mcps TDD option)
Source:	⌘	RAN WG4
Work item code:	⌘	TEI
Date:	⌘	1/2/2002
Category:	⌘	**A**
Release:	⌘	Rel-4

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

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

Use one of the following releases:

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

Reason for change:	⌘	Current requirements on number of measured intra-frequency neighbour cells in section 8.1.2.2 and 8.4.2.2 for CELL_DCH and CELL_FACH state are ambiguous with respect to whether these belong to the monitored / detected / active set. A clarification is needed in order to stay within the current assumptions on signalling in 25.331. Especially CELL_FACH state does not offer the possibility of measuring and reporting cells belonging to the detected set (25.331), even if in 8.4.2.2, a statement in this sense is made. Need for correction.
Summary of change:	⌘	Clarify whether "identified cell" refers to cells in the monitored / detected / active set for CELL_DCH and CELL_FACH sections. Remove statement on cells in detected set from CELL_FACH sections.
Consequences if not approved:	⌘	Contradictory specification in 25.331 and 25.123. Isolated impact analysis: This CR is a correction to a function where the specification is ambiguous or not sufficiently explicit. It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.
Clauses affected:	⌘	8.1.2.2, 8.4.2.2
Other specs affected:	⌘	- Other core specifications - Test specifications - O&M Specifications
	⌘	

Other comments:	⌘	-

8.1.2.2 TDD intra frequency measurements

During the CELL_DCH state the UE shall continuously measure ~~detected~~ identified intra frequency cells and search for new intra frequency cells in the monitoring set. In case the network requests the UE to report ~~unlisted~~ detected set cells, the UE shall also search for intra frequency cells outside the monitored and active set. Cells, which are neither included in the active set nor in the monitored set, and are identified by the UE belong to the detected set according to [16]. Intra frequency measurements can be performed (simultaneously to data reception from the active cell) in all time slots not allocated to transmission nor the time used for inter frequency measurements.

8.1.2.2.1 Identification of a new cell

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

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

8.1.2.2.2 UE P-CCPCH measurement capability

In the CELL_DCH state the measurement period for intra frequency measurements is 200 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing P-CCPCH measurements for 6 ~~detected~~ identified intra-frequency cells of the monitored set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 200 ms. When inter-frequency measurements are required by the network, the UE shall be capable of performing P-CCPCH measurements for at least $Y_{\text{measurement intra}}$ cells, where $Y_{\text{measurement intra}}$ is defined in the following equation. The detectable cells, that were not measured during that measurement period, shall be measured in the following measurement periods. The measurement accuracy for all measured cells shall be as specified in the section 9.

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

whereby function Floor(x) takes the integer part of x.

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

$T_{\text{Measurement\_Period, Intra}}$ = 200 ms. The measurement period for Intra frequency P-CCPCH measurements.

T_{Intra}: This is the minimum time (representing a time corresponding to an integer number of full slots) that is available for intra frequency measurements, during the measurement period with an arbitrarily chosen timing. It is assumed for the requirement that the slot allocation allows measurement windows to be of minimum duration necessary to perform the measurements.

$T_{\text{basic\_identify\_TDD, intra}}$ = 800 ms. This is the time period used in the intra frequency equation where the maximum allowed time for the UE to identify a new TDD cell is defined. (side conditions are defined in subclause 8.1.2.6).

8.1.2.2.3 Periodic Reporting

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

8.1.2.2.4 Event-triggered Periodic Reporting

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

The first report in event triggered periodic measurement reporting shall meet the requirements specified in section 8.1.2.2.5 Event Triggered Reporting.

8.1.2.2.5 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 resulted when inserting the measurement report to the TTI of the uplink DCCH . The delay uncertainty is twice the TTI of the uplink DCCH.

The event triggered measurement reporting delay, on cells belonging to the monitored set, measured without L3 filtering shall be less than $T_{identify\ intra}$ defined in Section 8.1.2.2.1. When L3 filtering is used an additional delay can be expected..

If a cell, belonging to the monitored set, has been detectable at least for the time period $T_{identify\ intra}$ and then enters the reporting range, the event triggered measurement reporting delay shall be less than $T_{Measurement\_Period\ Intra}$ when the L3 filter has not been used. and the UE P-CCPCH measurement capabilities of section 8.1.2.2.2 are valid.

< Next changed section >

8.4.2.2 TDD intra frequency measurements

During the CELL_FACH state the UE shall continuously measure ~~detected~~ identified intra frequency cells and search for new intra frequency cells in the monitoring set. ~~In case the network requests the UE to report unlisted cells, the UE shall also search for intra frequency cells outside the monitored set.~~ Intra frequency measurements can be performed (simultaneously to data reception from the active cell) in all time slots not allocated to transmission nor the time used for inter frequency measurements.

8.4.2.2.1 Identification of a new cell

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

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

8.4.2.2.2 UE P-CCPCH measurement capability

In the CELL_FACH state the measurement period for intra frequency measurements is 200 ms. When no inter frequency measurement is scheduled, the UE shall be capable of performing P-CCPCH measurements for 6 ~~detected~~ identified intra-frequency cells of the monitored set, and the UE physical layer shall be capable of reporting measurements to higher layers with the measurement period of 200 ms. When inter-frequency measurements are required by the network, the UE shall be capable of performing P-CCPCH measurements for ~~at least~~ the $Y_{measurement\ intra}$ strongest cells, where $Y_{measurement\ intra}$ is defined in the following equation. The detectable cells, that were not measured during that measurement period, shall be measured in the following measurement periods. The measurement accuracy for all measured cells shall be as specified in the section 9.

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

whereby function Floor(x) takes the integer part of x.

$X_{basic\ measurement\ TDD}$ is specified in section 8.1.2.2.2

$T_{Measurement\_Period,\ Intra}$ is specified in section 8.1.2.2.2

T_{Intra}: is specified in section 8.1.2.2.2

$T_{basic\_identify\_TDD,\ intra}$ is specified in section 8.1.2.2.2

3GPP TSG RAN WG4 Meeting #21 **R4-020433**

Sophia Antipolis, France 28th January - 1st February 2002

CR-Form-v4

CHANGE REQUEST

⌘ **25.123** **CR** **154** ⌘ ev **1** ⌘ Current version: **3.8.0** ⌘

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

Title:	⌘	Corrections to Idle Mode sections
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 1/2/2002
Category:	⌘ **F**	***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change: ⌘

Camped on Any Cell state: requirements for Cell Re-selection apply to both "Camped Normally" and "Camped on Any Cell" state (TS25.304), but the text in TS25.123 does not reflect this.

Correction "detected cell" to "identified cell": The term "detected cell" as used in TS25.123 is not in accordance with definition of sets of cells given in TS25.331, section 8.4.

Inter-RAT GSM cell re-selection in Idle Mode: It is not indicated what the criteria for deriving the best-ranked GSM BCCH cell for cell re-selection is. Ambiguities in the text include that ranking as per TS25.304 cannot be performed on a carrier, it can only be performed on a cell bases. It is also unclear if the ranking is based on signal level or if the measurement rules defined in TS25.304 apply.

Allowed interruption times in paging monitoring are unclear for inter-frequency and inter-RAT cell re-selection.

Summary of change: ⌘

Add requirements for Camped on Any Cell state for Cell Re-selection.

"Detected" cells corrected to "identified" cells.

Corrections to inter-RAT GSM cell re-selection sections:
- all GSM BCCH carriers in the monitored cell list shall be measured
- The 4 highest GSM BCCH carrier are identified and the BSIC verified
- The 4 verified GSM BCCH cells are ranked as per the measurement rules in TS25.304.

Interruption times in paging monitoring for inter-frequency and inter-RAT cell re-selection set to T_{SI} + 50 ms and T_{BCCH} + 50 ms respectively.

Other clarifications.

Consequences if ⌘

Misleading and contradictory specifications (TS25.304, TS25.331, TS25.123).

not approved:	Non-uniform UE behaviour in inter-RAT cell re-selection procedure. Isolated impact analysis: This CR is a correction to a function where the specification is ambiguous or not sufficiently explicit. It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected:	⌘	4.2		
Other specs affected:	⌘	- Other core specifications - Test specifications - O&M Specifications	⌘	
Other comments:	⌘	-		

4 Idle Mode

4.1 Cell Selection

4.1.1 Introduction

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

4.2 Cell Re-selection

4.2.1 Introduction

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

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

4.2.2 Requirements

4.2.2.1 Measurement and evaluation of cell selection criteria $S_{~~rxlev~~}$ of serving cell

The UE shall measure the PCCPCH RSCP level of the serving cell and evaluate the cell selection criterion $S_{~~rxlev~~}$ defined in TS25.304 for the serving cell at least ~~once per~~every DRX cycle. The UE shall filter the PCCPCH RSCP measurement of the serving cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least $T_{measureTDD}/2$ (see table 4.1).

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

If the UE has not found any new suitable cell based the on searches and measurements of the neighbour cells indicated in the measurement control system information for 12 s, the UE shall initiate cell selection procedures for the selected PLMN as defined in TS25.304.

4.2.2.2 Measurement of intra-frequency cells

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

The filtering shall be such that the UE shall be capable of evaluating that an intra-frequency cell has become better ranked than the serving cell within $T_{evaluateTDD}$ (see table 4.1), from the moment the intra-frequency cell became at least 2 dB better ranked than the current serving cell, provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the intra frequency cell is better ranked than the serving cell, the UE shall evaluate this intra frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.3 Measurement of inter-frequency TDD cells

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

The filtering of PCCPCH RSCP shall be such that the UE shall be capable of evaluating that an already ~~detected~~ identified inter-frequency cell has become better ranked than the serving cell within ($N_{carrier}$-1) * -$T_{evaluateTDD}$ from the moment the inter-frequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero. For non-~~detected~~ identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 3 dB better than the current serving cell provided that Treselection timer is set to zero.

If Treselection timer has a non zero value and the inter-frequency cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

4.2.2.4 Measurement of inter-frequency FDD cells

The UE shall measure the ~~signal level~~ CPICH RSCP -and CPICH Ec/Io of each FDD neighbour cell indicated in the measurement control system information of the serving cell, according to the measurement rules defined in TS25.304, at least every $T_{measureFDD}$ (see table 4.1). The UE shall filter CPICH RSCP measurements of each measured inter-frequency cell using at least 2 measurements~~.~~ which are taken so that the time difference between the measurements is at least $T_{measureFDD}/2$. ~~The measurement samples for each cell shall be as far as possible uniformly distributed over the averaging period.~~

~~CPICH RSCP is used as basic measurement quantity for cell ranking~~ The filtering of CPICH RSCP shall be such that the UE shall be capable of evaluating that an already ~~detected~~ identified inter-frequency cell has become better ranked than the serving cell within $N_{carrierFDD}$ * -$T_{evaluateFDD}$ from the moment the inter-frequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero. For non-~~detected~~ identified inter-frequency cells, the filtering shall be such that the UE shall be capable of evaluating that inter-frequency cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency cell became at least 5 dB better than the current serving cell provided that Treselection timer is set to zero. The parameter $N_{carrierFDD}$ is the number of carriers used for FDD cells.

If Treselection timer has a non zero value and the inter-frequency cell is better ranked than the serving cell, the UE shall evaluate this inter-frequency cell for the Treselection time. If this cell remains better ranked within this duration, then the UE shall reselect that cell.

The ranking of the cells shall be made according to the cell reselection criteria specified in TS25.304. If FDD cell has been ranked as the best cell and IE cell_selection_and_reselection-quality_measure is set to CPICH Ec/No, then UE shall perform a second ranking of the FDD cells using CPICH Ec/Io as the measurement quantity, before performing cell re-selection..

4.2.2.5 Measurement of inter-RAT GSM cells

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

If GSM measurements are required by the measurement rules in TS25.304, ~~T~~the UE shall attempt to verify the BSIC at least every 30 seconds for each of the 4 ~~best ranked~~ strongest GSM BCCH carriers and rank the verified GSM BCCH cells according to the cell re-selection criteria in TS25.304. ~~(the best ranked according to the cell reselection criteria defined in TS25.304) at least every 30 seconds if GSM cells are measured according to the measurement rules.~~ If a change of BSIC is detected for one GSM cell then that GSM BCCH carrier shall be treated as a new GSM neighbour cell.

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

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

4.2.2.6 Evaluation of cell reselection criteria

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

UE shall perform ~~C~~cell reselection ~~shall take place~~ immediately after the UE has found a better ranked suitable cell, unless less than ~~the UE has made cell reselection within the last~~ 1 second has elapsed from the moment the UE started camping on the current serving cell.

4.2.2.7 Maximum interruption time in paging reception

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

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

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

T_{SI} is the time required for receiving all the relevant system information data according to the reception procedure and the RRC procedure delay of system information blocks defined in TS25.331 for a UTRAN cell.

T_{BCCH} is the maximum time allowed to read BCCH data from a GSM cell as defined in TS05.08.

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

Table 4.1: $T_{measureTDD}$, $T_{evaluateTDD}$, $T_{measureFDD}$, $T_{evaluateFDD}$ and $T_{measureGSM}$

DRX cycle length [s]	N_{serv} ~~[~~(number of ~~successive measurements~~ DRX cycles)~~]~~	$T_{measureTDD}$ [s] (number of DRX cycles)	$T_{evaluateTDD}$ [s] (number of DRX cycles)	$T_{measureFDD}$ [s] (number of DRX cycles)	$T_{evaluateFDD}$ [s] (number of DRX cycles)	$T_{measureGSM}$ [s] (number of DRX cycles)
0.08	4	0.64 (8 DRX cycles)	2.56 (32 DRX cycles)	0.64 (8 DRX cycles)	2.56 (32 DRX cycles)	2.56 (32 DRX cycles)
0.16	4	0.64 (4)	2.56 (16)	0.64 (4)	2.56 (16)	2.56 (16)
0.32	4	1.28 (4)	5.12 (16)	1.28 (4)	5.12 (16)	5.12 (16)
0.64	4	1.28 (2)	5.12 (8)	1.28 (2)	5.12 (8)	5.12 (8)
1.28	2	1.28 (1)	6.4 (5)	1.28 (1)	6.4 (5)	6.4 (5)
2.56	2	2.56 (1)	7.68 (3)	2.56 (1)	7.68 (3)	7.68 (3)
5.12	1	5.12 (1)	10.24 (2)	5.12 (1)	10.24 (2)	10.24 (2)

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

4.2.2.8 Number of cells in cell lists

For idle mode cell re-selection purposes, the UE shall be capable of monitoring:

- 32 intra-frequency cells (including serving cell), and

- 32 inter-frequency cells, including
  - TDD mode cells on maximum 2 additional TDD carriers, and
  - Depending on UE capability, FDD mode cells, distributed on up to 3 FDD carriers~~.~~, and
- Depending on UE capability, 32 inter RAT GSM cells,

as indicated in cell information lists sent in system information (BCCH).

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CR-Form-v4

CHANGE REQUEST

⌘ **25.123** **CR** **147** ⌘ ev **1** ⌘ Current version: **3.8.0** ⌘

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

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

Title:	⌘	Introduction of test case for event 1H/I triggered reporting in AWGN
Source:	⌘	RAN WG4
Work item code:	⌘	***Date:*** ⌘ 1/2/2002
Category:	⌘ **F**	***Release:*** ⌘ R99

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

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

Reason for change: ⌘ DCA is a critical and well-recognised tool for efficient TDD operation. To achieve its full potential, TDD will rely on the ability of the UE to correctly report TS ISCP measurements upon event triggers 1H and 1I. Currently, section A.8 contains a test case only on event 1G triggered reporting in AWGN.

Summary of change: ⌘ Introduction of test case for event 1H/I triggered reporting in AWGN

Test Environment and Scenario:

The test environment consists of 2 synchronised TDD cells: cell 1 is the serving cell throughout the test and cell 2 a neighbour cell on the same frequency. Beacon Channels are located in TS0 and 8. The 12.2kbps DL DPCH is in TS2. The UE is required to monitor DL TS ISCP on TS2,3,4 of cell 1 and DLTS 4 of cell 2.

The test scenario is a UE monitoring events 1H and 1I on its own active DL DPCH TS2 and in addition on "escape" candidate TS's 3 and 4 of cell 1 and DL TS4 of cell 2.

Test sequence:

TS ISCP is adjusted by Ior hat/Ioc settings of the neighbour cell TS's. There are 5 time periods of 5 sec each in the test.

- At T2, cell 2 starts interfering the UE's active DL TS2 in cell 1 and ISCP increases, the UE must detect and report event 1I on cell 1.
- At T3, ISCP on TS2 returns to normal, i.e. like during T1 and the UE shall detect and report 1H on cell 1 TS2.
- At T4, ISCP on TS4 of cell 1 decreases, the UE must detect and report 1H on cell 1
- At T5, ISCP on TS4 of cell 2 increases and the UE shall detect and report 1I on TS4 cell 2

Consequences if not approved:	⌘	Missing critical test case for UE TS ISCP event 1H and 1I reporting. <u>Isolated impact analysis:</u> This CR is a correction to a functionality, event 1H/I reporting, where the specification is not sufficiently explicit and a test case for a critical RRM requirement is missing. It would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected:	⌘	New A.8.1.2		
Other specs affected:	⌘	- Other core specifications - Test specifications - O&M Specifications	⌘	
Other comments:	⌘	-		

A.8.1.2 Event 1H and 1I triggered reporting in AWGN propagation conditions

A.8.1.2.1 Test Purpose and Environment

The purpose of this test is to verify that the UE makes correct reporting of event 1H and event 1I. This test will partly verify the requirements in section 8.1.2 and section 9.1.

The test parameters are given in Table A.8.1.2, Table A.8.1.2A and Table A.8.1.2B below. The test consists of five successive time periods, with a time duration of T1, T2, T3, T4 and T5 respectively. Two cells shall be present in the test, cell 1 being the current serving cell and cell 2 being a neighbour cell on the used frequency.

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

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

Table A.8.1.2: General test parameters for correct event 1H and 1I reporting in AWGN propagation condition

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

Table A.8.1.2A: Cell 1 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit	Cell 1									
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRA RF Channel Number		Channel 1									
DL timeslot number		**0**					**2**				
PCCPCH_Ec/Ior	dB	-3					n.a.				
SCH_Ec/Ior	dB	-9					n.a.				
SCH_t_{offset}	dB	5					n.a.				
DPCH_Ec/Ior	dB	n.a.					Note 1				
OCNS_Ec/Ior	dB	-3.12					Note 2				
$\hat{I}_{or}/I_{oc}$	dB	4					4				
PCCPCH RSCP	dBm	-69					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
DL timeslot number		**3**					**4**				
PCCPCH_Ec/Ior	dB	n.a.					n.a.				
SCH_Ec/Ior	dB	n.a.					n.a.				
SCH_t_{offset}	dB	n.a.					n.a.				
DPCH_Ec/Ior	dB	n.a.					n.a.				
OCNS_Ec/Ior	dB	0					0				
$\hat{I}_{or}/I_{oc}$	dB	3					0				6
PCCPCH RSCP	dBm	n.a.					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
Note 1: The DPCH level is controlled by the power control loop Note 2: The power of the OCNS channel that is added shall make the total power from the cell to be equal to Ior											

Table A.8.1.2B: Cell 2 specific test parameters for correct event 1H and 1I reporting in AWGN propagation condition

Parameter	Unit	Cell 2									
		T1	T2	T3	T4	T5	T1	T2	T3	T4	T5
UTRA RF Channel Number		Channel 1									
DL timeslot number		**0**					**2**				
PCCPCH_Ec/Ior	dB	-3					n.a.				
SCH_Ec/Ior	dB	-9					n.a.				
SCH_t_{offset}	dB	10					n.a.				
DPCH_Ec/Ior	dB	n.a.					n.a.				
OCNS_Ec/Ior	dB	-3.12					0				
$\hat{I}_{or}/I_{oc}$	dB	1					0	6	0		
PCCPCH RSCP	dBm	-72					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									
DL timeslot number		**3**					**4**				
PCCPCH_Ec/Ior	dB	n.a.					n.a.				
SCH_Ec/Ior	dB	n.a.					n.a.				
SCH_t_{offset}	dB	n.a.					n.a.				
DPCH_Ec/Ior	dB	n.a.					n.a.				
OCNS_Ec/Ior	dB	0					0				
$\hat{I}_{or}/I_{oc}$	dB	3					6			0	
PCCPCH RSCP	dBm	n.a.					n.a.				
I_{oc}	dBm / 3,84 MHz	-70									
Propagation Condition		AWGN									

A.8.1.2.2 Test Requirements

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T2.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T3.

The UE shall send one event 1H triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T4.

The UE shall send one event 1I triggered measurement report, with a measurement reporting delay less than 400 ms from the beginning of time period T5.

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

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