TSG RAN Meeting #22 **RP-030602**
Maui, Hawaii, US, 9 - 12 December 2003

Title **CRs (Rel-5) to TS 25.133, "Clarification on filtering requirements"**
Source **TSG RAN WG4**
Agenda Item **7.5.5**

RAN4 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R4-030898	25.133	617		F	Rel-5	5.8.0	Clarification on filtering requirements	TEI5
R4-030899	25.133	618		A	Rel-6	6.3.0	Clarification on filtering requirements	TEI5

CR-Form-v7

CHANGE REQUEST

⌘ **25.133** **CR** **617** ⌘ **rev** ⌘ Current version: **5.8.0** ⌘

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

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

Title:	⌘	Clarification on filtering requirements
Source:	⌘	RAN WG4
Work item code:	⌘	TEI5
Date:	⌘	26/11/2003
Category:	⌘	**F**
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 text on measurement filtering in25.133 (regarding intra-frequency, inter-frequency cells) was found ambiguous and may lead to different interpretations: Indeed, In 25.133 v3.e.0 section 4.2.2.2, one can read the following

"The UE shall filter CPICH Ec/Io and CPICH RSCP measurements of each measured intra-frequency cell using at least 2 measurements, which are taken so that the time difference between the measurements is at least TmeasureFDD/2."

Therefore, two interpretations may be done:

1)The UE shall filter CPICH Ec/Io and CPICH RSCP measurements of each measured intra-frequency cell using at least 2 measurements. The time difference between the most recent measurement and the oldest one used in the filtering is at least TmeasureFDD/2.

2)The UE shall filter CPICH Ec/Io and CPICH RSCP measurements of each measured intra-frequency cell using at least 2 measurements. The time difference between 2 measurements used in the filtering is at least TmeasureFDD/2.

This was discussed over the RAN4 email reflector. The same ambiguous wording was found in other places in the specification and needs clarification. The spirit of the text was clarified and this CR attempts to solve the issue. A modification is required in order to clarify that:

1- the requirement is fulfilled if at least two measurements used in the

		filtering are spaced by at least TmeasureFDD/2 2- providing that the requirement above is fulfilled, the UE may use additionnal measurements for which the time difference is less than TmeasureFDD/2 e.g. for the case of DRX cycle = 0.08s the UE may perform the filtering with 4 mesurements with a time difference between of 2DRX cycles = TmeasureFDD/4. Actually, the clarification proposed allows the UE to use additional measurements in order to increase the accuracy.
Summary of change:	⌘	It is clarified that in Idle mode, Cell_PCH and URA_PCH states, for intra intra-frequency, inter-frequency cell CPICH Ec/Io and CPICH RSCP measurement filtering, the UE shall use at least 2 measurements. Within the set of measurements used for the filtering, at least two measurements are spaced by at least $T_{measureFDD}/2$. <u>Isolated impact:</u> This CR has an isolated impact, as this is a correction to measurement requirements.
Consequences if not approved:	⌘	The filtering requirements would remain unclear and might lead to useless accuracy limitation.

Clauses affected:	⌘	4.4.2.1, 4.4.2.2, 4.4.2.3, 4.4.2.4			
Other specs affected:	⌘	**Y** / **N**	Other core specifications	⌘	
			X Test specifications		
			X O&M Specifications		
Other comments:	⌘	Equivalent CRs in other Releases: CR618 cat. A to 25.133 v6.3.0			

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.

4 Idle Mode Tasks

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 FDD 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. 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 of serving cell

The UE shall measure the CPICH Ec/Io and CPICH RSCP level of the serving cell and evaluate the cell selection criterion S defined in [1] for the serving cell at least every DRX cycle. The UE shall filter the CPICH Ec/Io and CPICH RSCP measurements of the serving cell using at least 2 measurements~~,~~. Within the set of measurements used for the filtering, at least two measurements shall be spaced by ~~which are taken so that the time difference between the measurements is~~ at least $T_{measureFDD}/2$ (see table 4.1).

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

If the UE has not found any new suitable cell based 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 [1].

After this 12 s period a UE in Cell:PCH or URA_PCH is considered to be “out of service area” and shall perform actions according to 25.331.

On transition from CELL_DCH to CELL_PCH/URA_PCH, if a UE cannot find a suitable UTRA cell, then it is considered to be “out of service area” and shall perform actions according to [16].

4.2.2.2 Measurements of intra-frequency cells

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

The filtering shall be such that the UE shall be capable of evaluating that an intra-frequency cell has become better ranked than the serving cell within $T_{evaluateFDD}$ (see table 4.1), from the moment the intra-frequency cell became at least

3 dB better ranked than the current serving cell, provided that Treselection timer is set to zero and either CPICH Ec/Io or CPICH RSCP is used as measurement quantity for cell reselection.

If 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 Measurements of inter-frequency FDD cells

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

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

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

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

The UE shall measure P-CCPCH RSCP at least every $N_{carrierTDD} * T_{measureTDD}$ (see table 4.1) for inter-frequency TDD cells that are identified and measured according to the measurement rules. The parameter $N_{carrierTDD}$ is the number of carriers used for inter-frequency TDD cells. The UE shall filter P-CCPCH RSCP measurements of each measured inter-frequency TDD cell using at least 2 measurements. Within the set of measurements used for the filtering, at least two measurements shall be spaced by ~~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 identified inter-frequency TDD cell has become better ranked than the serving cell within $N_{carrierTDD} * T_{evaluateTDD}$ from the moment the inter-frequency TDD cell became at least 5 dB better ranked than the current serving cell provided that Treselection timer is set to zero. For non-identified inter-frequency TDD cells, the filtering shall be such that the UE shall be capable of evaluating that an inter-frequency TDD cell has become better ranked than the serving cell within 30 s from the moment the inter-frequency TDD cell became at least 5 dB better ranked than the current serving cell provided that Treselection timer is set to zero.

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3GPP TSG RAN WG4 (Radio) Meeting #29 **R4-030899**

San Diego, USA 17 - 21 November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.133** **CR** **618** ⌘ **rev** ⌘ Current version: **6.3.0** ⌘

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Title:	⌘	Clarification on filtering requirements		
Source:	⌘	RAN WG4		
Work item code:	⌘	TEI5	***Date:*** ⌘	26/11/2003
Category:	⌘	**A**	***Release:*** ⌘	Rel-6

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		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Equivalent CRs in other Releases: CR617 cat. F to 25.133 v5.8.0			

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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.

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

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