TSG RAN Meeting #14 **RP-010787**

Kyoto, Japan, 11 - 14 December 2001

Title: **CRs (Rel-4 and Rel-5 Category A) to TS 25.133**

Source: **TSG RAN WG4**

Agenda Item: **8.4.4**

RAN4 Tdoc	Spec	CR	Title	Cat	Phase	Curr Ver	New Ver
R4-011409	25.133	237	SFN-SFN observed time difference measurement	F	Rel-4	4.2.0	4.3.0
R4-011625	25.133	238	SFN-SFN observed time difference measurement	A	Rel-5	5.0.0	5.1.0

3GPP TSG RAN WG4 Meeting #20 **R4-011409**

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **237** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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

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

Title:	⌘	UTRAN SFN-SFN observed time difference measurement
Source:	⌘	RAN WG4
Work item code:	⌘	LCS1-UEpos
Date:	⌘	9th Nov 2001
Category:	⌘	**F**
Release:	⌘	Rel-4

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

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

Use one of the following releases:

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

Reason for change:	⌘	Currently, the SFN-SFN *observed* time difference (OTD) measurement in *UTRAN* measures the time between the beginning of adjacent *slots* from reference and neighbour cells. To enable the calculation of the *real* time difference (RTD) between the beginning of *frames*, it is proposed that the UTRAN SFN-SFN OTD measurement is altered to measure the time between beginning of *frames* from the reference and neighbour cells. If assistance data on RTD between beginning of frames from a reference and a neighbour cell could be conveyed to the UE, the search window for UE SFN-SFN OTD measurements could be significantly narrowed and the UE search for cells made quicker.
Summary of change:	⌘	Update of UTRAN SFN-SFN observed time difference measurement report mapping in Tables 9.60, 9.61 and 9.62. Isolated Impact Analysis: This CR has isolated impact with the previous version of the specification because within some existing implementations the measurement report mapping may be implemented at slot boundary instead of frame boundary. This CR has an impact under functional point of view. The impact can be considered isolated because the change affects only UTRAN SFN-SFN observed time difference measurement report mapping function.
Consequences if not approved:	⌘	With the current specifications, the radio network will not be able to provide the real time difference (RTD) between beginning of frames from the reference and neighbour cells as mandatory assistance data to the UE unless a Location Measurement Unit (LMU) is placed at every Node B. The UE can use this RTD

	information to find signals for UE SFN-SFN observed time difference (OTD) measurements. In direct scrambling code search of measurable signals the UE does not otherwise know the real starting times of frames and it then has to search the entire 38 400-chip range. Such a wide search is time consuming and it is not even known beforehand if anything can really be found. The search window would be wide without knowledge of RTD and the UE search for cells would be slow.

Clauses affected:	⌘	9.2.15.1 ; 9.2.15.2			
Other specs affected:	⌘	X	Other core specifications	⌘	TS 25.215, TS 25.302, TS 25.423, TS 25.433, TS 25.331
			Test specifications		
			O&M Specifications		
Other comments:	⌘				

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

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

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

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

9.2.14 Acknowledged PCPCH access preambles

The measurement period shall be 20 ms.

9.2.14.1 Acknowledged PCPCH access preambles measurement report mapping

The *Acknowledged PCPCH access preambles* reporting range is 0 … 15.

In Table 9.59, the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.59

Reported value	Measured quantity value	Unit
ACK_PCPCH_AP_00	Acknowledged PCPCH access preambles = 0	-
ACK_PCPCH_AP _01	Acknowledged PCPCH access preambles = 1	-
ACK_PCPCH_AP _02	Acknowledged PCPCH access preambles = 2	-
…	…	…
ACK_PCPCH_AP _12	Acknowledged PCPCH access preambles = 12	-
ACK_PCPCH_AP _13	Acknowledged PCPCH access preambles = 13	-
ACK_PCPCH_AP _14	Acknowledged PCPCH access preambles = 14	-
ACK_PCPCH_AP _15	Acknowledged PCPCH access preambles = 15	-

9.2.15 SFN-SFN observed time difference

This measurement is needed for RTD estimation in UTRAN.

9.2.15.1 Accuracy requirement

9.2.15.1.1 Accuracy requirement without IPDL

The measurement period shall be [100] ms.

Table 9.60

Parameter	Unit	Accuracy [chip]	Conditions
			Range [chips]
SFN-SFN observed time difference	chip	+/- 0.5	~~-1280.0000…1280.0000~~ -19200.0000 … 19200.0000

9.2.15.1.2 Accuracy requirement with IPDL

The measurement period shall be [TBD] ms.

IPDL pattern parameters [TBD].

Table 9.61

Parameter	Unit	Accuracy [chip]	Conditions
			Range [chips]
SFN-SFN observed time difference	chip	+/- 0.5	~~-1280.0000…1280.0000~~ -19200.0000 … 19200.0000

9.2.15.2 SFN-SFN observed time difference measurement report mapping

The *SFN-SFN observed time difference* reporting range is from ~~-1280.0000 ... 1280.0000~~ -19200.0000 … 19200.0000 chip.

In table 9.62 the mapping of measured quantity is defined. The range in the signalling may be larger than the guaranteed accuracy range.

Table 9.62

Reported value	Measured quantity value	Unit
~~SFN-SFN_TIME _00000~~	~~SFN-SFN observed time difference < -1280.0000~~	~~chip~~
SFN-SFN_TIME _000010	-~~1280~~19200.0000 ≤ SFN-SFN observed time difference < -~~1279~~19199.9375	chip
SFN-SFN_TIME _000021	-~~1279~~19199.9375 ≤ SFN-SFN observed time difference < -~~1279~~19199.8750	chip
…	…	…
SFN-SFN_TIME _~~40959~~14398	~~1279~~19199.8750 ≤ SFN-SFN observed time difference < ~~1279~~19199.9375	chip
SFN-SFN_TIME _~~40960~~14399	~~1279~~19199.9375 ≤ SFN-SFN observed time difference ~~<~~≤ ~~1280~~19200.0000	chip
~~SFN-SFN_TIME _40961~~	~~1280.0000 ≤ SFN-SFN observed time difference~~	~~chip~~

3GPP TSG RAN WG4 Meeting #20 **R4-011625**

East Brunswick, NJ, USA 12th - 16th November 2001

CR-Form-v4

CHANGE REQUEST

⌘ **25.133** **CR** **238** ⌘ ev **-** ⌘ Current version: **5.0.0** ⌘

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

Title:	⌘	UTRAN SFN-SFN observed time difference measurement
Source:	⌘	RAN WG4
Work item code:	⌘	LCS1-UEpos
Date:	⌘	16th Nov 2001
Category:	⌘	**A**
Release:	⌘	Rel-5

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REL-5	*(Release 5)*

Reason for change: ⌘

Currently, the SFN-SFN *observed* time difference (OTD) measurement in *UTRAN* measures the time between the beginning of adjacent *slots* from reference and neighbour cells. To enable the calculation of the *real* time difference (RTD) between the beginning of *frames*, it is proposed that the UTRAN SFN-SFN OTD measurement is altered to measure the time between beginning of *frames* from the reference and neighbour cells.

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Summary of change: ⌘

Update of UTRAN SFN-SFN observed time difference measurement report mapping in Tables 9.60, 9.61 and 9.62.

Isolated Impact Analysis:

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Consequences if not approved: ⌘

With the current specifications, the radio network will not be able to provide the real time difference (RTD) between beginning of frames from the reference and neighbour cells as mandatory assistance data to the UE unless a Location Measurement Unit (LMU) is placed at every Node B. The UE can use this RTD

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SFN-SFN_TIME _~~00002~~00001	-~~1279~~19199.9375 ≤ SFN-SFN observed time difference < -~~1279~~19199.8750	chip
…	…	…
SFN-SFN_TIME _~~40959~~614398	~~1279~~19199.8750 ≤ SFN-SFN observed time difference < ~~1279~~19199.9375	chip
SFN-SFN_TIME _~~40960~~614399	~~1279~~19199.9375 ≤ SFN-SFN observed time difference < ~~1280~~19200.0000	chip
~~SFN-SFN_TIME_40961~~	~~1280.0000 ≤ SFN-SFN observed time difference~~	~~chip~~