TSG-RAN Working Group 1 meeting #18
Boston, USA
Jan 15 - 18, 2001

TSGR1#18(01)0076

Agenda item: AH 99

Source: Nokia

Title: CR 25.215-079r1: Correction of the "observed time difference to GSM" measurement

Document for: Decision

The current "observed time difference to GSM" measurement definition is suitable for *reporting* the observed time difference, but not for the *actual measurement* in the UE:

?? The P-CCPCH frame with SFN=0 occurs very seldom, only every 40.96 s. If the actual measurement would be based on this instant, the accuracy would suffer. The sentence "…shall reflect the situation…" is ambiguous.

?? For the GSM multiframe timing measurement with the required precision, the SCH is used. Depending on the instant when the measurement is done, the next received SCH shall be used, even if it is not at the start of the GSM multiframe. In connected mode, the SCH measurement occasions depend on the transmission gap pattern sequence given by the network.

As a clear description of the measurement is necessary to allow RAN WG4 to define proper accuracy requirements, we see it beneficial to include some clarifying text.

For the backward calculation of the reported time difference to the reference points, the GSM and UTRA frames are assumed to be ideal.

3GPP TSG-RAN Meeting #18
Boston, USA, 15-18 Jan 2001

Tdoc R1-01-0076

CR-Form-v3

CHANGE REQUEST

✍ **25.215** **CR** **079** ✍ rev **1** ✍ Current version: **3.5.0** ✍

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

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

Title: ✍	Correction of the observed time difference to GSM measurement	
Source: ✍	Nokia	
Work item code: ✍		***Date:*** ✍ 09-jan-2001
Category: ✍	**F**	***Release:*** ✍ R99

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

Use one of the following releases:

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

Reason for change: ✍	The current measurement description is not sufficient.
Summary of change: ✍	The relationship between measurement and reported value is added.
Consequences if not approved: ✍	"observed time difference to GSM" will not be usable

Clauses affected: ✍	5.1.12		
Other specs affected: ✍	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	✍	
Other comments: ✍			

5.1.12 Observed time difference to GSM cell

Definition	The Observed time difference to GSM cell is defined as: T_{RxGSMj} - T_{RxSFNi}, where: T_{RxSFNi} is the time at the beginning of the P-CCPCH frame with SFN=0 from cell i. T_{RxGSMj} is the time at the beginning of the GSM BCCH 51-multiframe from GSM frequency j received closest in time after the time T_{RxSFNi}. If the next GSM multiframe is received exactly at T_{RxSFNi} then T_{RxGSMj} =T_{RxSFNi} (which leads to T_{RxGSMj} - T_{RxSFNi} = 0). ~~The timing measurement shall reflect the timing situation when the most recent (in time) P-CCPCH with SFN=0 was received in the UE.~~ The reference point for the Observed time difference to GSM cell shall be the antenna connector of the UE. The beginning of the GSM BCCH 51-multiframe is defined as the beginning of the first tail bit of the frequency correction burst in the first TDMA-frame of the GSM BCCH 51-multiframe, i.e. the TDMA-frame following the IDLE-frame. The reported time difference is is calculated from the actual measurement in the UE. For the actual measurement, the reference points shall be: $T_{MeasGSM,j}$: The start of the first tail bit of the most recently received GSM SCH on frequency j $T_{MeasSFN,i}$: The start of the last P-CCPCH frame received on frequency i before receiving the GSM SCH of frequency j For calculating the reported time difference, the frames are assumed to be ideal.
Applicable for	Idle, Connected Inter