TSG-RAN Meeting #24 **RP-040223**
Seoul, Korea, 02-04 June 2004

Title: **Rel-6 CR to 25.306 on Correction to memory handling in the UE**

Source: **TSG-RAN WG2**

Agenda item: **8.10**

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Workitem	Doc-2nd-Level
25.306	096	-	Rel-6	Correction to memory handling in the UE	F	6.1.0	6.2.0	TEI6	R2-041242

3GPP TSG-RAN2 Meeting #42
Montréal, Canada, 10th – 14th May 2004

Tdoc ⌘R2-041242

CR-Form-v7

CHANGE REQUEST

⌘ **25.306** **CR** **096** ⌘ **rev** **-** ⌘ Current version: **6.1.0** ⌘

*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 [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	Correction to memory handling in the UE
Source:	⌘	RAN WG2
Work item code:	⌘	TEI6
Date:	⌘	May 2004
Category:	⌘	**F**
Release:	⌘	Rel-6

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:	⌘	It is currently mandated that the condition stated in TS 25.306 §4.3 shall be fulfilled at all time in the UE. As it is, this condition seems too restrictive, as an efficient AM RLC memory handling in the UE should be based on received/sent PDUs rather than on Rx/Tx window sizes. As a consequence, the amount of AM RLC entities operating in parallel and/or memory allocated for re-ordering queues in the Node B might be unnecessarily limited.
Summary of change:	⌘	The condition stated in §4.3 is removed. Instead, the amount of memory that shall be assumed to be consumed when an AM RLC PDU needs to be stored is indicated.
Consequences if not approved:	⌘	Fewer amount of allowed UE configurations, degraded performance on HS-DSCH, waste of resources.

Clauses affected:	⌘	4.3

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	
		X	Test specifications	
		X	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/specs/CR.htm.
Below is a brief summary:

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

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

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

4.3 RLC and MAC-hs parameters

Total RLC AM and MAC-hs buffer size

When HS-DSCH is not configured this is defined as the maximum total buffer size across all RLC AM entities supported by the UE. When HS-DSCH is configured this is defined as the maximum total buffer size across all MAC-hs reordering entities and all RLC AM entities supported by the UE. The memory signalled in this capability is~~can be~~ dynamically shared by RLC AM entities and MAC-hs reordering entities at any time. ~~UTRAN controls that the UE capability can be fulfilled through the following parameters:~~

~~1. The number of RLC AM entities configured (no explicit RRC parameter);~~

~~2. UL PDU size;~~

~~3. DL PDU size;~~

~~4. Transmission window size (in number of PDUs);~~

~~5. Receiving window size (in number of PDUs);~~

~~The following criterion must be fulfilled in the configuration at all times:~~

$$\sum_{i=1}^{\#RLC\_AM\_entities} Transmission\_window\_size_i \bullet (UL\_AMD\_PDU\_size_i - AMD\_Header\_size) + \sum_{i=1}^{\#RLC\_AM\_entities} Receiving\_window\_size_i \bullet (DL\_AMD\_PDU\_size_i - AMD\_Header\_size) + \leq Total\_buffer\_size$$

In order to evaluate memory consumption in the UE, it shall be assumed that:

- a stored AMD PDU of N octets requires a memory equal to ~~(~~N~~ – 2)~~ octets,
- ~~-~~a stored MAC-hs PDU of N bits requires a memory equal to (N – 10) bits.

The UE shall only consider itself in a memory shortage situation as defined in [9] [10] when the amount of stored AM RLC PDUs and MAC-hs PDUs exceeds its capability.

Maximum number of AM entities

This is defined as the maximum number of RLC AM entities supported by the UE.

Maximum RLC AM Window Size

This is defined as the maximum transmission and receiving window size of RLC AM entities supported by the UE.