3GPP TSG CN Plenary, Meeting #11
Palm Springs, USA. 14th - 16th March 2001

Tdoc NP-010018

CR-Form-v3

CHANGE REQUEST

⌘ **04.64 CR ??** ⌘ rev **-** ⌘ Current version: **8.6.0** ⌘

*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 **X**

Title:	⌘	Addition of UI Dummy command for use in RLC/MAC delayed TBF release procedure
Source:	⌘	Motorola
Work item code:	⌘	GERAN Improvements #4
Date:	⌘	2001-03-07
Category:	⌘	**B**
Release:	⌘	Rel-4

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:	⌘	An overall performance, significantly lower than expected, has been experienced in the interaction between many TCP/IP based applications and GPRS/EGPRS. Continuous operation of a downlink TBF (RLC/MAC layer) is proposed as a means to improve the performance in these situations. For that purpose, suitable fill information need to be defined, which can be used by the RLC layer for padding of RLC PDUs during periods of idle downlink data flow, between the actual LLC PDUs received from the upper layer.
Summary of change:	⌘	It is proposed that a new UI Dummy command be defined. It is of variable length, with a minimum of 6 octets (header and FCS octets) and a maximum of 79 octets. The content of the UI Dummy command is a fixed pattern such that the UI Dummy command has an invalid FCS. Thereby, it will be discarded by the receiving LLC entity in the mobile station.
Consequences if not approved:	⌘	Networks may be developed using hidden features in the standard, which may cause problem for future extensions of the standard.

Clauses affected:	⌘	2, 6.4.2.2 (new)		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	3GPP TS 44.060
Other comments:	⌘	This CR is based on the CR “Addition of dummy LLC PDU for use in RLC/MAC delayed TBF release procedure,” which has been agreed by GERAN2 Ad Hoc on Enhanced TBF Procedures and has been sent to CN1 (Tdoc N1-010405) for approval. CN1 have revised the GERAN2 CR but in their last meeting #16 in Sophia Antipolis didn’t have enough time to discuss it and agree on it.		

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.
- For this Release 1999 document, references to GSM documents are for Release 1999 versions (version 8.x.y).

[1] 3GPP TS 01.04: "Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms".

[2] 3GPP TS 01.61: "Digital cellular telecommunications system (Phase 2+); GPRS ciphering algorithm requirements".

[3] 3GPP TS 02.60: "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Service description; Stage 1".

[4] 3GPP TS 03.40: "Digital cellular telecommunications system (Phase 2+); Technical realization of the Short Message Service (SMS); Point-to-Point (PP)".

[5] 3GPP TS 03.60: "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Service description; Stage 2".

[6] 3GPP TS 03.64: "Digital cellular telecommunications system (Phase 2+); Overall description of the General Packet Radio Service (GPRS) Radio interface; Stage 2".

[7] 3GPP TS 04.01: "Digital cellular telecommunications system (Phase 2+); Mobile Station - Base Station System (MS - BSS) interface; General aspects and principles".

[8] 3GPP TS 04.08: "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification".

[9] 3GPP TS 04.11: "Digital cellular telecommunication system (Phase 2+); Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".

[10] 3GPP TS 04.22: "Digital cellular telecommunications system (Phase 2+); Radio Link Protocol (RLP) for data and telematic services on the Mobile Station - Base Station System (MS - BSS) interface and the Base Station System - Mobile-services Switching Centre (BSS - MSC) interface".

[11] 3GPP TS 04.65: "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Mobile Station (MS) – Serving GPRS Support Node (SGSN); Subnetwork Dependent Convergence Protocol (SNDCP)".

[12] 3GPP TS 08.18: "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Base Station System (BSS) - Serving GPRS Support Node (SGSN); BSS GPRS Protocol (BSSGP)".

[13] ITU-T Q.920 (1988): "ISDN user-network interface data link layer – general aspects".

[14] ITU-T Q.921 (1988): "ISDN user-network interface – data link layer specification".

[15] ITU-T Z.100 (1988): "CCITT specification and description language (SDL)".

[16] ISO 3309 (1984): "Information processing systems – Data communications – High-level logical link control procedures – Frame structure".

[17] ISO 4335 (1987): "Information processing systems – Data communication – High-level logical link control procedures – Consolidation of elements of procedures".

[18] ISO 7809 (1984): "Information processing systems – Data communication – High-level logical link control procedures – Consolidation of classes of procedures".

[19] ISO 7809 (1984): "Information processing systems – Data communication Add. 1: 1987 – High-level logical link control procedures – Consolidation of classes of procedures – Addendum 1".

[20] ISO 7809 (1984): "Information processing systems – Data communication Add. 2: 1987 – High-level logical link control procedures – Consolidation of classes of procedures – Addendum 2: Description of optional functions".

[21] TIA IS-130 (1995): "800 MHz Cellular System – TDMA Radio Interface – Radio Link Protocol 1" Arlington: Telecommunications Industry Association.

[22] TIA/EIA-136 (1999): "TDMA Cellular / PCS"; Arlington: Telecommunications Industry Association.

[23] 3GPP TS 44.060: “General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/ Medium Access Control (RLC/MAC) protocol”.

NEXT MODIFICATION

6.4.2 Unconfirmed Information (UI) frame

6.4.2.1 Unconfirmed Information (UI) command

When a layer-3 entity requests unacknowledged information transfer, the UI command shall be used to send information to its peer. No verification of sequence numbers is performed for UI frames. Therefore, the UI frame may be lost without notification to the layer-3 entity if a logical link exception occurs during transmission of the command.

6.4.2.2 Unconfirmed Information (UI) Dummy command

The UI Dummy command is a special UI command that shall never be transmitted by an LLC entity, but in can be received by an LLC entity. An LLC entity that receives the UI Dummy command recognises it as an invalid UI command and, therefore, discards it with no further actions.

NOTE: The UI Dummy command is used for the purposes of the Delayed Release of Downlink TBF, as specified in 3GPP TS 44.060 [23].

The format of UI Dummy command is illustrated in Figure 11a. The length of UI Dummy command is variable, with a minimum value of 6 octets and a maximum of 79 octets. All octets from octet 4 to the last octet N shall have the hexadecimal value of 2B.

NOTE: The specified format of UI Dummy command makes sure that a receiving LLC entity always discards an UI Dummy command, since the FCS check always fails (no matter what the length of the UI Dummy command is).

Bit 8	7	6	5	4	3	2	1	
PD=0	C/R=1	0	0	SAPI=3				Octet 1
1	1	D=0	0	0	N(U) =0			Octet 2
N(U) =0					E=0	PM=1		Octet 3
0	0	1	0	1	0	1	1	Octet 4
0	0	1	0	1	0	1	1	Octet 5
0	0	1	0	1	0	1	1	Octet 6
. . .								
0	0	1	0	1	0	1	1	Octet N-2 (LLC FCS)
0	0	1	0	1	0	1	1	Octet N-1 (LLC FCS)
0	0	1	0	1	0	1	1	Octet N (LLC FCS)

Figure 11a: Format of UI Dummy command