3GPP TSG CN Plenary Meeting #14 **Tdoc NP-010574**
Kyoto, Japan. 12th - 14th December 2001.

Source: **TSG CN WG3**

Title: **CRs on Rel-4 Work Item CS Bearers**

Agenda item: **8.13**

Document for: **APPROVAL**

Introduction:

This document contains **3** CRs on **Rel-4** Work Item **"CS Bearers"**, that have been agreed by TSG CN WG3, and are presented to TSG CN Plenary meeting #14 for approval.

NP Tdoc	WG Tdoc	Subject	Spec	CR	Rev	Cat	C_Ver	Phase	Workitem
NP-010574	N3-010404	SDU size for transparent data at 33.6 kbit/s	29.007	045		F	4.2.0	Rel-4	CS Bearer
NP-010574	N3-010409	SDU size for transparent data at 33.6 kbit/s	27.001	069		F	4.5.0	Rel-4	CS Bearer
NP-010574	N3-010410	SDU size for transparent data at 33.6 kbit/s	23.910	031		F	4.3.0	Rel-4	CS Bearer

3GPP TSG-CN WG3 Meeting #19
Brighton, U.K. 15th - 19th September 2001

Tdoc N3-010404

CR-Form-v4

CHANGE REQUEST

⌘ **29.007** **CR** **045** ⌘ 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 ☐ Core Network **X**

Title:	⌘	SDU size for transparent data at 33.6 kbit/s
Source:	⌘	CN3
Work item code:	⌘	CS Bearers
Date:	⌘	08.10.01
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:	⌘	The SDU size for the transparent data service at 33.6 kbit/s was decided.
Summary of change:	⌘	Removal of note mentioning an open issue for 33.6 kbit/s transparent data.
Consequences if not approved:	⌘	
Clauses affected:	⌘	11.5.1.2
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ 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.

11.5 Transport within the Core Network

The Nb UP protocol is used to transport user data in the Core Network, see 3GPP TS 29.415 [80]. Figure 16 below shows different cases to consider:

1. Transport on the access side of the IWF
2. Transport beyond the IWF, i.e., between the IWF and the fixed network

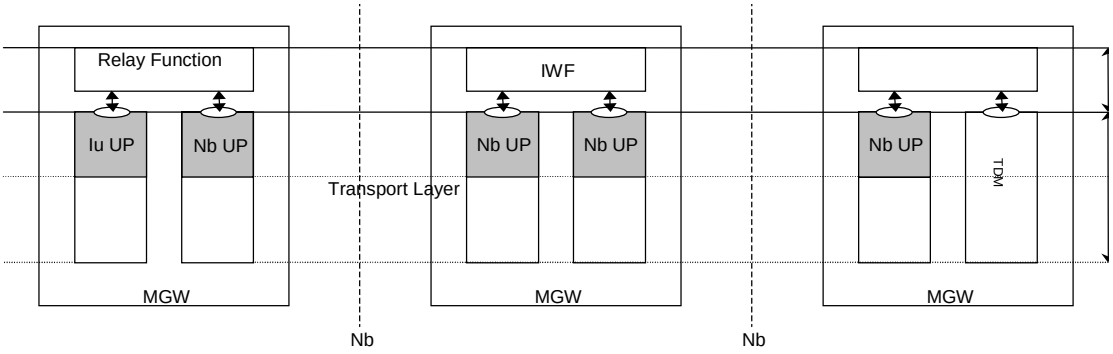

Figure 16: Transport of data within the Core Network

11.5.1 Transport on the access side of the IWF

This section is applicable in cases where the IWF is not interfacing an Iu UP layer protocol entity, as a result of, e.g., at handover.

11.5.1.1 Non-transparent case

The Nb UP is used in support mode. The same SDU sizes and transmission intervals that are used on the Iu interface are used over the Nb interface, see 3GPP TR 23.910 ~~29.310~~ [53] and 3GPP TS 27.001 [43]. A Relay Function (see 3GPP TS 29.232 [82]) is used to relay the user data and control information (such as rate control) in MGWs between the MGW where the IWF is residing and the Iu interface.

11.5.1.2 Transparent case

The Nb UP is used in transparent mode. The same SDU sizes and transmission intervals that are used on the Iu interface are used over the Nb interface, see 3GPP TR 23.910 ~~29.310~~ [53] and 3GPP TS 27.001 [43]. The PDUs are passed unmodified through all MGWs between the MGW where the IWF is residing and the Iu interface.

~~Note: Transmission in case of user rate 33.6 kbit/s is FFS.~~

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CR-Form-v4

CHANGE REQUEST

⌘ **27.001** **CR** **069** ⌘ ev **-** ⌘ Current version: **4.5.0** ⌘

*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 **X** Radio Access Network ☐ Core Network **X**

Title:	⌘	SDU size for transparent data at 33.6 kbit/s
Source:	⌘	CN3
Work item code:	⌘	CS Bearer
Date:	⌘	2001-10-15
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)*
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Use one of the following releases:

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R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	The SDU size for the transparent data service at 33.6 kbit/s was decided.
Summary of change:	⌘	Removal of a note mentioning an open issue for 33.6 kbit/s transparent data.
Consequences if not approved:	⌘	

Clauses affected:	⌘	B.1.13.1
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

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B.1.13 Assignment of radio access bearer parameters depending on FNUR and WAIUR

B.1.13.1 Transparent Services

Depending on the FNUR negotiated between the network and the MS, the network is allowed to assign any radio resources with a radio access bearer parameter indicating a Quality of Service specifying

QoS Parameter	Value	Comments
Traffic Class	Conversational	Subject to operator tuning
RAB Asymmetry Indicator	Symmetric	
Maximum bit rate	= guaranteed bit rate	
Guaranteed bit rate	FNUR = 64 .. 28,8 kbit/s	GBR for FNUR=56 kbit/s is 64 kbit/s (Note ~~1~~)
Delivery Order	Yes	
Maximum SDU size	640bits for FNUR = 32, 56 and 64 kbit/s 576 bits for FNUR = 28.8 kbit/s 672 bits for FNUR = 33.6 kbit/s	~~(Note 2)~~
Transfer Delay	< 200 ms	Subject to operator tuning
Traffic Handling Priority	-	Not applicable for the conversational traffic class
Source statistics descriptor	Unknown	
SDU Parameters		
SDU error ratio	-	Not applicable
Residual bit error ratio	10^{-4}	Subject to operator tuning according to 3GPP TS 23.107. Operator may also choose different value for Multimedia and other transparent data services.
Delivery of erroneous SDUs	-	No error detection in the core network

Note ~~1~~: In case the FNUR = 56 kbit/s, the GBR is set to 64 kbit/s. Last bit in each data octet is set to 1

~~Note 2: The maximum SDU size for bit rate 33.6 kbit/s is still under discussion.~~

The final decision about the radio interface configuration is taken by the RNC during the Assignment procedure.

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CR-Form-v4

CHANGE REQUEST

⌘ **23.910** **CR** **031** ⌘ ev **-** ⌘ Current version: **4.3.0** ⌘

*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 **X** Radio Access Network ☐ Core Network **X**

Title:	⌘	SDU size for transparent data at 33.6 kbit/s
Source:	⌘	CN3
Work item code:	⌘	CS Bearer
Date:	⌘	2001-10-15
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)*
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Use one of the following releases:

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R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	The SDU size for the transparent data service at 33.6 kbit/s was decided.
Summary of change:	⌘	Removal of a note mentioning an open issue for 33.6 kbit/s transparent data.
Consequences if not approved:	⌘	
Clauses affected:	⌘	5.2.2 and 6.2
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications
	⌘	
Other comments:	⌘	

How to create CRs using this form:

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First modified section

5.2.2 Transparent Data, including Multimedia

Service identified by the BC IE		Transparent data and BS for support of multimedia service	Comments
Traffic Class		Conversational	Subject to operator tuning
Maximum bit rate		= guaranteed bit rate	
Guaranteed bit rate		FNUR = 64 .. 28.8 kbit/s (Note 2)	GBR for FNUR=56 kbit/s is 64 kbit/s (Note 1)
Delivery Order		Yes	
Maximum SDU size		640 bits for FNUR=32, 56 and 64 kbit/s 576 bits for FNUR=28.8 kbit/s 672 bits for FNUR=33.6 kbit/s	~~(Note 3)~~
Transfer Delay		< 200 ms	Subject to operator tuning
Traffic Handling Priority		-	Not applicable for the conversational traffic class
Source statistics descriptor		Unknown	
SDU Parameters			
	SDU error ratio	-	Not applicable
	Residual bit error ratio	10^{-4}	Subject to operator tuning according to 3GPP TS 23.107. Operator may also choose different value for Multimedia and other transparent data services.
	Delivery of erroneous SDUs	-	No error detection in the core network

NOTE 1: In case the FNUR = 56 kbit/s, the GBR is set to 64 kbit/s. Last bit in each data octet is set to 1.

NOTE 2: If the FNUR is changed as a result of a MODIFY procedure during the call, the guaranteed bit rate is not changed.

~~NOTE 3: The maximum SDU size for FNUR=33.6 kbit/s is still under discussion.~~

End of first modified section

Second modified section

6.2 T services

The Iu UP and Nb UP are used in transparent mode, see 3GPP TS 25.415 and 3GPP TS 29.415. The payload of the Iu and Nb frames will consist of user data bits only for synchronous data, and RA0 synchronous bit streams for asynchronous data.

On the Iu and Nb interfaces, the payload (SDU) size is fixed, determined by the bit rate. Following table shows SDU size defined by GSM Association - IMT-2000 Steering Group (Typical Radio Interface Parameter Sets). AAL2 is used. The AAL2 SSCS layer must be supported for segmentation and re-assembly.

Bit rate	**SDU size (= RLC PDU payload size)**
28.8 kbit/s	576 bits
33.6 kbit/s	~~[Editor's note] Waiting for decision by GSM Association~~672 bits
32 kbit/s	640 bits
56/64 kbit/s	640 bits

The primitive Iu-UP or Nb-_UNIT-DATA-REQUEST is invoked at regular intervals in order to have a constant bit rate (every SDU).

If TDM is not used, then between the IWF and the fixed network (ISDN or PSTN), the Nb UP protocol is applied in support mode and the SDU size is 320 bits, transmitted every 5 ms. PDU type 0 is used.

End of second and last modified section