TSG RAN Meeting #21 **RP-030448**
Frankfurt, Germany, 16 - 19 September 2003

Title **CRs (Rel-5 only) to TS 25.424, TS 25.426 and TS 25.434 on Handling of maximum bit rate exceeding 2048kbit/s**
Source **TSG RAN WG3**
Agenda Item **7.4.6**

RAN3 Tdoc	Spec	curr. Vers.	new Vers.	REL	CR	Rev	Cat	Title	Work item
R3-031231	25.424	5.1.0	5.2.0	REL-5	025	1	F	Handling of maximum bit rate exceeding 2048kbit/s	HSDPA-IubIur
R3-031232	25.426	5.2.0	5.3.0	REL-5	031	1	F	Handling of maximum bit rate exceeding 2048kbit/s	HSDPA-IubIur
R3-031233	25.434	5.1.0	5.2.0	REL-5	027	1	F	Handling of maximum bit rate exceeding 2048kbit/s	HSDPA-IubIur

Note: These 3 CRs were considered as 'technically correct' in RAN3 (instead of being 'agreed') as there was no consensus because the CRs would imply a different interpretation for the Link Characteristics than the original interpretation in ITU-T Recommendation Q.2630.2.

3GPP TSG-RAN3 Meeting #37
Budapest, Hungary, August 25th – 29th, 2003

Tdoc R3-031231

CR-Form-v7

CHANGE REQUEST

⌘ **25.424** **CR** **025** ⌘ **rev** **1** ⌘ Current version: **5.1.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Handling of maximum bit rate exceeding 2048Kbit/s
Source:	⌘	RAN3
Work item code:	⌘	HSDPA-IubIur
Date:	⌘	27/08/2003
Category:	⌘	**F**
Release:	⌘	REL-5

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: ⌘ As the HSDPA can support up to 14.4Mbps, the transport signalling in case of ATM option for Iur/Iub also need to update in order to align the maximum bit rate.

Summary of change: ⌘ The value of maximum and average CPS-SDU bit rate in Link Characteristics(LC) in the Establish Request message of AAL2 signalling protocol is set to 2048 Kbit/s, it means the bit rate is 2048 Kbit/s or more than 2048Kbit/s

Consequences if not approved: ⌘ If this CR is not approved, the transport layer in UTRAN will not be able to support the maximum bit rate for HSDPA which is exceeding 2048Kbit/s

Impact Analysis:

Impact assessment towards the previous version of the specification (same release):

This CR has [isolated impact] with the previous version of the specification (same release) because it affect implementations supporting ALCAP.

This CR has an impact under [protocol & functional] point of view.
The impact [can] be considered isolated because the change affects [one] [system function] namely maximum bit rate in transport layer.

Clauses affected: ⌘ 6.2

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	CR031r1 on TS25.426 v5.2.0 CR027r1 on TS25.434 v5.1.0
			X	Test specifications		
			X	O&M Specifications		

Other comments: ⌘

How to create CRs using this form:

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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.

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.
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[1] ITU-T Recommendation I.361 (11/95): "B-ISDN ATM Layer Specification".

[2] ITU-T Recommendation I.363.2 (11/2000): "B-ISDN ATM Adaptation Layer type 2".

[3] ITU-T Recommendation I.366.1 (6/98): "Segmentation and Re-assembly Service Specific Convergence Sublayer for the AAL type 2".

[4] New ITU-T Recommendation Q.2630.1 (12/99): "AAL Type 2 signalling protocol (Capability Set 1)".

[5] ITU-T Recommendation E.191 (03/00): "B-ISDN addressing".

[6] 3GPP TS 25.426: "UTRAN I_{ur} and I_{ub} Interface Data Transport & Transport Signalling for DCH Data Streams".

[7] 3GPP TS 25.434: "UTRAN I_{ub} Interface Data Transport & Transport Signalling for Common Transport Channel Data Streams".

[8] ITU-T Recommendation Q.2630.2 (12/2000): "AAL Type 2 signalling protocol (Capability Set 2)".

[9] ITU-T Recommendation X.213 (11/95): "Information Technology - Open Systems Interconnection - Network Service Definition".

[10] IETF STD 51, RFC 1661 (July 1994): "The Point-To-Point Protocol (PPP)".

[11] IETF STD 51, RFC 1662 July 1994: "PPP in HDLC-like Framing".

[12] IETF RFC 2507 (February 1999): "IP header compression".

[13] IETF RFC 1990 "The PPP Multilink Protocol (MP)".

[14] IETF RFC 2686 "The Multi-Class Extension to Multi-Link PPP".

[15] IETF RFC 2509 (February 1999): "IP Header Compression over PPP".

[16] IETF RFC 2460 "Internet Protocol, Version 6 (Ipv6) Specification".

[17] IETF RFC 791 (1981): "Internet Protocol".

[18] IETF RFC 2474 (December 1998): "Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers".

[19] IETF RFC 768 (8/1980): "User Datagram Protocol".

[20] IETF RFC 3153 (1/2001): "PPP Multiplexing".

[21] IETF RFC 2364 (1/2001): "PPP over AAL5".

[22] IETF RFC 3031 (1/2001):"Multiprotocol Label Switching Architecture".

[23] ITU-T Recommendation E.164 (5/97): " The international public telecommunication numbering plan ".

6 I_{ur} Transport Signalling Application for Common Transport Channel Data Streams

6.1 Introduction

This clause specifies the transport signalling protocol(s) used to establish the user plane transport bearers. The protocol stack is shown in [6].

6.2 Transport Signalling in case of ATM option

AAL2 signalling protocol Capability Set 2, ITU-T Recommendation Q.2630.2 [8], is the signalling protocol to control the AAL2 connections on Iur interfaces. Q.2630.2 [8] adds new optional capabilities to Q.2630.1 [4].

AAL2 transport layer addressing is based on embedded E.164 or other AESA variants of the NSAP addressing format [5,9]. Native E.164 [23] addressing shall not be used.

Binding ID provided by the radio network layer shall be copied in SUGR parameter of ESTABLISH.request primitive of [8]. The binding identifier shall already be assigned and tied to a radio application procedure when the Establish Request message is received over the Iur interface in the Drift RNC.

User Plane Transport bearers are established and in all normal cases released by the ALCAP in the Serving RNC.

The Link Characteristics parameter (LC) shall be included in the Establish Request message and in the Modification Request message of AAL2 signalling protocol.

If there is an AAL2 switching function in the transport network layer of the interface, the Path Type parameter (PT) may be included in the Establish Request message of AAL2 signalling protocol for prioritisation at ATM level.

If the value in either the Maximum CPS-SDU Bit Rate or the Average CPS-SDU Bit Rate of the Link Characteristics(LC) in AAL 2 signalling messages as specified in reference [8] is 2048 Kbit/s, it shall be interpreted as bit rate 2048 Kbit/s or higher.

6.3 Transport Signalling in case of IP Transport Option

An ALCAP protocol is not required in case both RNCs are using the IP transport option.

3GPP TSG-RAN3 Meeting #37
Budapest, Hungary, August 25th – 29th , 2003

Tdoc R3-031232

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CHANGE REQUEST

⌘ **25.426** **CR** **031** ⌘ **rev** **1** ⌘ Current version: **5.2.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Handling of maximum bit rate exceeding 2048Kbit/s
Source:	⌘	RAN3
Work item code:	⌘	HSDPA-IubIur
Date:	⌘	27/08/2003
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
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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: ⌘ As the HSDPA can support up to 14.4Mbps, the transport signalling in case of ATM option for Iur/Iub also need to update in order to align the maximum bit rate.

Summary of change: ⌘ The value of maximum and average CPS-SDU bit rate in Link Characteristics(LC) in the Establish Request message of AAL2 signalling protocol is set to 2048 Kbit/s, it means the bit rate is 2048 Kbit/s or more than 2048Kbit/s

Consequences if not approved: ⌘ If this CR is not approved, the transport layer in UTRAN will not be able to support the maximum bit rate for HSDPA which is exceeding 2048Kbit/s

Impact Analysis:

Impact assessment towards the previous version of the specification (same release):

This CR has [isolated impact] with the previous version of the specification (same release) because it affect implementations supporting ALCAP.

This CR has an impact under [protocol & functional] point of view.
The impact [can] be considered isolated because the change affects [one] [system function] namely maximum bit rate in transport layer.

Clauses affected: ⌘ 6.2

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	CR025r1 on TS25.424 v5.1.0 CR027r1 on TS25.434 v5.1.0
			X	Test specifications		
			X	O&M Specifications		

Other comments: ⌘

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[1] 3GPP TS 25.427: "UTRAN Iur and Iub User interface plane protocols for DCH data streams".

[2] ITU-T Recommendation I.361 (11/95): "B-ISDN ATM layer specification".

[3] ITU-T Recommendation I.363.2 (11/2000): "B-ISDN ATM Adaptation Layer specification; Type 2 AAL".

[4] ITU-T Recommendation I.366.1 (6/98): "Segmentation and Reassembly Service Specific Convergence Sublayer for the AAL type 2".

[5] ITU-T Recommendation Q.2630.1 (12/99): "AAL type 2 signalling protocol (Capability Set 1)".

[6] ITU-T Recommendation E.191 (03/00): "B-ISDN addressing".

[7] ITU-T Recommendation X.213 (11/95): "Information Technology - Open Systems Interconnection - Systems Interconnection - Network Service Definition".

[8] ITU-T Recommendation Q.2110 (7/94): "B-ISDN ATM adaptation layer - Service Specific Connection Oriented Protocol (SSCOP)".

[9] ITU-T Recommendation Q.2130 (7/94): "B-ISDN signalling ATM adaptation layer - Service Specific Coordination Function for Support of Signalling at the User-Network Interface (SSCF at UNI)".

[10] ITU-T Recommendation Q.2150.2 (12/99): "AAL type 2 signalling transport converter on SSCOP)".

[11] ITU-T Recommendation Q.2210 (7/96): Message transfer part level 3 functions and messages using the services of the ITU-T Recommendation Q.2140".

[12] ITU-T Recommendation Q.2140 (2/95): "B-ISDN ATM adaptation layer - Service Specific Coordination Function for Support of Signalling at the Network Node Interface (SSCF at NNI)".

[13] ITU-T Recommendation Q.2150.1 (12/99): "AAL type 2 signalling transport converter on broadband MTP".

[14] IETF RFC 791 (September 1981): "Internet Protocol".

[15] IETF RFC 1483 (July 1993): "Multiprotocol Encapsulation over ATM Adaptation Layer 5".

[16] IETF RFC 2225 (April 1998): "Classical IP and ARP over ATM".

[17] IETF RFC 768 (August 1980): "User Datagram Protocol".

[18] IETF RFC 2960 (October 2000): "Stream Control Transmission Protocol".

[19] G. Sidebottom et al, "SS7 MTP3 - User Adaptation Layer", draft-ietf-sigtran-m3ua-12.txt (Work In Progress), IETF, February 2002.

[20] ITU-T Recommendation I.630 (2/99): "ATM protection switching".

[21] ITU-T Recommendation Q.Imp2210: "Implementor's guide (03/99) for Recommendation Q.2210 (07/96)".

[22] ITU-T Recommendation Q.2630.2 (12/2000): "AAL type 2 signalling protocol (Capability Set 2)".

[23] IETF STD 51, RFC 1661 (July 1994): "The Point-To-Point Protocol (PPP)".

[24] IETF STD 51, RFC 1662 (July 1994): "PPP in HDLC-like Framing".

[25] IETF RFC 2507, (February 1999): "IP header compression".

[26] IETF RFC 1990 "The PPP Multilink Protocol (MP)".

[27] IETF RFC 2686 "The Multi-Class Extension to Multi-Link PPP".

[28] IETF RFC 2509, (February 1999):"IP Header Compression over PPP".

[29] IETF RFC 2460 "Internet Protocol, Version 6 (IPv6) Specification".

[30] IETF RFC 2474 (December 1998): "Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers".

[31] IETF RFC 768 (8/1980): "User Datagram Protocol".

[32] IETF RFC 3153 (August 2001): "PPP Multiplexing".

[33] IETF RFC 2364 (July 1998): "PPP over AAL5".

[34] IETF RFC 3031 (January 2001): "Multiprotocol Label Switching Architecture".

[35] "IP-ALCAP" [ffs]

[36] ITU-T Recommendation E.164 (5/97): " The international public telecommunication numbering plan ".

[37] RFC 3309: "SCTP Checksum Change".

6 Transport Signalling Application for DCH Data Streams

6.1 Introduction

This chapter specifies the ALCAP protocol(s) to be used in Iur and Iub interfaces for DCH data streams.

6.2 ALCAP in ATM Transport Option

AAL2 signalling protocol Capability Set 2 [22] is the signalling protocol to control AAL2 connections on Iub and Iur interfaces. Q.2630.2 [22] adds new optional capabilities to Q.2630.1 [5].

Binding ID provided by the radio network layer shall be copied in SUGR parameter of ESTABLISH.request primitive of [22].

User Plane Transport bearers for Iur interface are established, in all normal cases released and optionally modified by the ALCAP in the Serving RNC. The binding identifier shall already be assigned and tied to a radio application procedure when the Establish Request message is received over the Iur interface in the Drift RNC.

User Plane Transport bearers for Iub interface are established, in all normal cases released and optionally modified by the ALCAP in the Controlling RNC. binding identifier shall already be assigned and tied to a radio application

procedure when the Establish Request message is received over the Iub interface in the Node B. In case of a Reset initiated by the CRNC, the ALCAP in the Node B shall release the transport bearers involved in the impacted Node B Communication Contexts. The Node B shall also initiate release of the user plane transport bearers for the removed dedicated channels that were remaining within the cell when the cell is deleted.

AAL2 transport layer addressing is based on embedded E.164 or other AESA variants of the NSAP addressing format [6, 7]. Native E.164 addressing [36] shall not be used.

The Link Characteristics parameter (LC) shall be included in the Establish Request message and in the Modification Request message of AAL2 signalling protocol.

If there is an AAL2 switching function in the transport network layer of the interface, the Path Type parameter (PT) may be included in the Establish Request message of AAL2 signalling protocol for prioritisation at ATM level.

If the value in either the Maximum CPS-SDU Bit Rate or the Average CPS-SDU Bit Rate of the Link Characteristics(LC) in AAL2 signalling messages as specified in reference [8] is 2048 Kbit/s, it shall be interpreted as bit rate 2048 Kbit/s or higher.

6.3 ALCAP in IP Transport Option

An ALCAP protocol is not required in case both UTRAN nodes are using the IP transport option.

Application of ALCAP in IP to ATM interworking case is defined in chapter 9 of this Technical Specification.

3GPP TSG-RAN3 Meeting #37
Budapest, Hungary, August 25th – 29th, 2003

Tdoc R3-031233

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CHANGE REQUEST

⌘ **25.434** **CR** **027** ⌘ **rev** **1** ⌘ Current version: **5.1.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Handling of maximum bit rate exceeding 2048Kbit/s
Source:	⌘	RAN3
Work item code:	⌘	HSDPA-IubIur
Date:	⌘	27/08/2003
Category:	⌘	**F**
Release:	⌘	REL-5

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Rel-6 *(Release 6)*

Reason for change: ⌘ As the HSDPA can support up to 14.4Mbps, the transport signalling in case of ATM option for Iur/Iub also need to update in order to align the maximum bit rate.

Summary of change: ⌘ The value of maximum and average CPS-SDU bit rate in Link Characteristics(LC) in the Establish Request message of AAL2 signalling protocol is set to 2048 Kbit/s, it means the bit rate is 2048 Kbit/s or more than 2048Kbit/s

Consequences if not approved: ⌘ If this CR is not approved, the transport layer in UTRAN will not be able to support the maximum bit rate for HSDPA which is exceeding 2048Kbit/s

Impact Analysis:

Impact assessment towards the previous version of the specification (same release):

This CR has [isolated impact] with the previous version of the specification (same release) because it affect implementations supporting ALCAP.

This CR has an impact under [protocol & functional] point of view.
The impact [can] be considered isolated because the change affects [one] [system function] namely maximum bit rate in transport layer.

Clauses affected: ⌘ 6.2

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	CR025r1 on TS25.424 v5.1.0 CR031r1 on TS25.426 v5.2.0
			X	Test specifications		
			X	O&M Specifications		

Other comments: ⌘

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[1] ITU-T Recommendation I.363.2 (11/2000): "B-ISDN ATM Adaptation layer specification: Type 2 AAL".

[2] ITU-T Recommendation I.366.1 (6/98): "Segmentation and Reassembly Service Specific Convergence Sublayer for the AAL type 2".

[3] ITU-T Recommendation Q.2630.1 (12/99): "AAL type 2 signalling protocol (Capability Set 1)".

[4] ITU-T Recommendation Q.2110 (7/94): "B-ISDN ATM adaptation layer - Service Specific Connection Oriented Protocol (SSCOP)".

[5] ITU-T Recommendation Q.2130 (7/94): "B-ISDN signalling ATM adaptation Layer - Service Specific Coordination Function for Support of Signalling at the User Network Interface (SSCF at UNI)".

[6] ITU-T Recommendation Q.2150.2 (12/99): "Signalling transport converter on SSCOP and SSCOPMCE".

[7] ITU-T Recommendation I.361 (11/95): "B-ISDN ATM layer specification".

[8] ITU-T Recommendation I.630 (2/99): "ATM protection switching".

[9] ITU-T Recommendation Q.2630.2 (12/2000): "AAL Type 2 signalling protocol (Capability Set 2)".

[10] ITU-T Recommendation E.191 (03/00): "B-ISDN addressing".

[11] ITU-T Recommendation X.213 (11/95): "Information Technology - Open Systems Interconnection - Network Service Definition".

[12] IETF RFC 768, (August 1980): "User Datagram Protocol".

[13] IETF RFC 2460, (December 1998): "Internet Protocol, Version 6 (IPv6) Specification".

[14] IETF RFC 791, (September 1981): "Internet Protocol".

[15] IETF RFC 2474, (December 1998): "Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers".

[16] IETF RFC 1661, (July 1994): "The Point-to-Point Protocol (PPP)".

[17] IETF RFC 1662, (July 1994): "PPP in HDLC-like Framing".

[18] IETF RFC 2507, (February 1999): "IP header compression".

[19] IETF RFC 1990, (August 1996): "The PPP Multilink Protocol (MP)".

[20] IETF RFC 2686, (September 1999): "The Multi-Class Extension to Multi-Link PPP".

[21] IETF RFC 2509, (February 1999): "IP Header Compression over PPP".

[22] 3GPP TS 25.401, "UTRAN Overall Description"

[23] 3GPP TS 25.426, "UTRAN Iur and Iub Interface Data Transport & Transport Signalling for DCH Data Streams"

[24] IETF RFC 3153, (August 2001): "PPP Multiplexing".

[25] IETF RFC 2364, (July 1998): "PPP over AAL5".

[26] IETF RFC 3031, (January 2001): "Multiprotocol Label Switching Architecture".

[27] ITU-T Recommendation E.164 (5/97): " The international public telecommunication numbering plan ".

6 I_{ub} Transport Signalling Application for Common Transport Channel Data Streams

6.1 Introduction

This subclause specifies the transport signalling protocol(s) used to establish the user plane transport bearers. The protocol stack is shown in clause 7 (figure 2).

6.2 Transport Signalling in case of ATM Transport Option

Q.2630.2 as developed by ITU-T [9] is selected as the standard AAL2 signalling protocol for Iub. ITU-T Recommendation Q.2630.2 [9] adds new optional capabilities to ITU-T Recommendation Q.2630.1 [3].

Binding ID provided by the radio network layer shall be copied in SUGR parameter of ESTABLISH.request primitive of [9]. The binding identifier shall already be assigned and tied to a radio application procedure when the Establish Request message is received over the Iub interface in the Node B.

User Plane Transport bearers are established and in all normal cases released by the ALCAP in the Controlling RNC. The Node B shall initiate release of the user plane transport bearers for the removed common channels that were remaining within the cell when the cell is deleted.

AAL2 transport layer addressing is based on embedded E.164 or other AESA variants of the NSAP addressing format [10, 11]. Native E.164 addressing [27] shall not be used.

If there is an AAL2 switching function in the transport network layer of the interface, the Link Characteristics parameter (LC) shall be included in the Establish Request message and in the Modification Request message of AAL2 signalling protocol.

If there is an AAL2 switching function in the transport network layer of the interface, the Path Type parameter (PT) may be included in the Establish Request message of AAL2 signalling protocol for prioritisation at ATM level.

If the value in either the Maximum CPS-SDU Bit Rate or the Average CPS-SDU Bit Rate of the Link Characteristics(LC) in AAL2 signalling messages as specified in reference [8] is 2048 Kbit/s, it shall be interpreted as bit rate 2048 Kbit/s or higher.

6.3 Transport Signalling in case of IP Transport Option

An ALCAP protocol is not required in case both UTRAN Nodes (RNC and Node B) are using the IP Transport Option.