TSG-RAN meeting #22 ***Tdoc RP-030667***
Hawaii, US, 17th – 21st November 2003

Source:	**Siemens, NEC, Vodafone, 3**
Title:	**Introduction of ITU-T Q.2631.1 for interworking solution 3**
Agenda item:	**7.4.5**
Document for:	**discussion and approval**

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1 Introduction

Since the first appearance of Rel-5 UTRAN signalling specifications the interworking solution 3 is left unspecified in various specifications under RAN3's responsibility. This paper proposes to finalise the missing specification work by selecting an ALCAP protocol recently approved by ITU-T and specifying its use in the respective UTRAN specifications (25.401, 25.410, 25.414, 25.420, 25.436, 25.430).

2 Discussion

Interworking solution 3 was agreed to be an required interworking alternative in order to support the interworking between ATM-based and IP-based UTRAN nodes, whereas the Rel-5-IP-UTRAN nodes are not able to access directly an ATM transport network. Therefore interworking solution 3 specifies the use of a remote interworking unit and provides a corresponding connection control protocol (ALCAP protocol).

Although several proposals were discussed in RAN3 the ITU-T based proposal was the only one that was further elaborated and analysed. In October 2003 ITU-T announced the final approval of

Q.2631.1 "IP Connection Control Signalling Protocol - Capability Set 1" and

Q.2632.1 "Interworking between AAL type 2 Signalling Protocol Capability Set 2 and IP Connection Control Signalling Protocol Capability Set 1"

which was approved through the the alternative approval process (see the result of the approval in ref.[1]).

Note: RAN has been already informed about the consent of Q.2631.1 and Q.2632.1 from ITU-T SG11 at RAN#21 in RP-030541, which was noted.

3 Conclusion and Proposal

It is proposed to agree on the use of [2] as an ALCAP protocol for "interworking solution 3" in Rel-5 and to approved the related CRs as follows:

RAN3 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item

RAN3 Tdoc	Spec	CR	R	Cat	Rel	Curr Ver	Title	Work Item
R3-031578	25.401	072		F	Rel-5	5.6.0	Introduction of ITU-T Q.2631.1 for interworking solution 3	ETRAN-IPtrans
R3-031579	25.401	073		A	Rel-6	6.1.0	Introduction of ITU-T Q.2631.1 for interworking solution 3	ETRAN-IPtrans
R3-031580	25.410	044		F	Rel-5	5.3.0	Introduction of ITU-T Q.2631.1 for interworking solution 3	ETRAN-IPtrans
R3-031581	25.414	070		F	Rel-5	5.4.0	Introduction of ITU-T Q.2631.1 for interworking solution 3	ETRAN-IPtrans
R3-031582	25.420	032		F	Rel-5	5.1.0	Introduction of ITU-T Q.2631.1 for interworking solution 3	ETRAN-IPtrans
R3-031583	25.426	032		F	Rel-5	5.3.0	Introduction of ITU-T Q.2631.1 for interworking solution 3	ETRAN-IPtrans
R3-031584	25.430	039		F	Rel-5	5.2.0	Introduction of ITU-T Q.2631.1 for interworking solution 3	ETRAN-IPtrans

4 References

[1] http://www.itu.int/itudoc/itu-t/aap/announce/index.html

[2] ITU-T Recommendation Q.2631.1 (10/2003): “IP Connection Control Signalling Protocol - Capability Set 1”

[3] ITU-T Recommendation Q.2632.1 (10/2003): “Interworking between AAL type 2 Signalling Protocol Capability Set 2 and IP Connection Control Signalling Protocol Capability Set 1”

3GPP TSG-RAN WG3 Meeting #39 **R3-031578**
San Diego, US, 17th – 21st November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.401** **CR** **072** ⌘ **rev** **-** ⌘ Current version: **5.6.0** ⌘

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

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

Title:	⌘	Introduction of ITU-T Q.2631.1 for interworking solution 3
Source:	⌘	Siemens
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	08/11/2003
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:	⌘	There is still the reference to an IP-ALCAP protocol missing. In order to close this gap necessary description of interworking using ITU-T Q.2631.1 is introduced.
Summary of change:	⌘	The "TBD" in reference [19] was replaced by a reference to the ITU-T recommendation Q.2631.1 Impact Analysis Impact assessment towards the previous version of the specification (same release): this CR has isolated impact on the previous version of the specification (same release) because only one function is impacted. This CR has an impact under the protocol point of view. The impact can be considered as isolated as it affects only the IP-ATM Interworking function.
Consequences if not approved:	⌘	If this CR is not approved, the external IWU scenario with IP-ALCAP will exist in the release 5 specification undefined.

Clauses affected:	⌘	2			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	⌘ CR073 25.401 Rel-6 CR044 25.410 Rel-5 CR070 25.414 Rel-5 CR032 25.420 Rel-5 CR032 25.426 Rel-5 CR039 25.430 Rel-5
				Test specifications	
				O&M Specifications	

Other comments: ⌘

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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.

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- 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.*

[1] 3GPP TR 25.990: "Vocabulary".

[2] 3GPP TS 23.110: "UMTS Access Stratum Services and Functions".

[3] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

[4] 3GPP TS 25.442: "UTRAN Implementation Specific O&M Transport".

[5] 3GPP TS 25.402: "Synchronisation in UTRAN, Stage 2".

[6] 3GPP TS 23.003: "Numbering, Addressing and Identification".

[7] 3GPP TS 25.331: "RRC Protocol Specification".

[8] 3GPP TS 23.101: "General UMTS Architecture".

[9] 3GPP TS 25.414: " UTRAN Iu Interface Data Transport & Transport Signalling".

[10] 3GPP TS 25.424: "UTRAN Iur Interface Data Transport & Transport Signalling for Common Transport Channel Data Streams".

[11] 3GPP TS 25.434: "UTRAN Iub Interface Data Transport & Transport Signalling for Common Transport Channel Data Streams".

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

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

[14] IETF RFC 768: "User Datagram Protocol", (8/1980)

[15] "Information technology – Open Systems Interconnection – Network service definition", X.213, ISO/IEC 8348.

[16] "Information technology – Open Systems Interconnection – Network service definition Amendment 1: Addition of the Internet protocol address format identifier", X.213/Amd.1, ISO/IEC 8348.

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

[18] 3GPP TS 25.426: "UTRAN Iur and Iub Interface Data Transport & Transport Signalling for DCH Data Streams".

[19] ITU-T Recommendation Q.2631.1 (10/2003): “IP Connection Control Signalling Protocol - Capability Set 1”~~TBD~~.

[20] 3GPP TS 23.236: "Intra-domain connection of Radio Access Network (RAN) nodes to multiple Core Network (CN) nodes".

[21] 3GPP TR 43.930: "Iur-g interface; Stage 2".

3GPP TSG-RAN WG3 Meeting #39 **R3-031579**
San Diego, US, 17th – 21st November 2003

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CHANGE REQUEST

⌘ **25.401** **CR** **073** ⌘ **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 ☐ Radio Access Network [X] Core Network [X]

Title:	⌘	Introduction of ITU-T Q.2631.1 for interworking solution 3
Source:	⌘	Siemens
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	09/11/2003
Category:	⌘	**A**
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:	⌘	There is still the reference to an IP-ALCAP protocol missing. In order to close this gap necessary description of interworking using ITU-T Q.2631.1 is introduced.
Summary of change:	⌘	The "TBD" in reference [19] was replaced by a reference to the ITU-T recommendation Q.2631.1 Impact Analysis Impact assessment towards the previous version of the specification (same release): this CR has isolated impact on the previous version of the specification (same release) because only one function is impacted. This CR has an impact under the protocol point of view. The impact can be considered as isolated as it affects only the IP-ATM Interworking function.
Consequences if not approved:	⌘	If this CR is not approved, the external IWU scenario with IP-ALCAP will exist in the release 5 specification undefined.

Clauses affected:	⌘	2			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	⌘ CR072 25.401 Rel-5 CR044 25.410 Rel-5 CR070 25.414 Rel-5 CR032 25.420 Rel-5 CR032 25.426 Rel-5 CR039 25.430 Rel-5
				Test specifications	
				O&M Specifications	

Other comments: ⌘

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2 References

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[1] 3GPP TR 25.990: "Vocabulary".

[2] 3GPP TS 23.110: "UMTS Access Stratum Services and Functions".

[3] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

[4] 3GPP TS 25.442: "UTRAN Implementation Specific O&M Transport".

[5] 3GPP TS 25.402: "Synchronisation in UTRAN, Stage 2".

[6] 3GPP TS 23.003: "Numbering, Addressing and Identification".

[7] 3GPP TS 25.331: "RRC Protocol Specification".

[8] 3GPP TS 23.101: "General UMTS Architecture".

[9] 3GPP TS 25.414: " UTRAN Iu Interface Data Transport & Transport Signalling".

[10] 3GPP TS 25.424: "UTRAN Iur Interface Data Transport & Transport Signalling for Common Transport Channel Data Streams".

[11] 3GPP TS 25.434: "UTRAN Iub Interface Data Transport & Transport Signalling for Common Transport Channel Data Streams".

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

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

[14] IETF RFC 768: "User Datagram Protocol", (8/1980)

[15] "Information technology – Open Systems Interconnection – Network service definition", X.213, ISO/IEC 8348.

[16] "Information technology – Open Systems Interconnection – Network service definition Amendment 1: Addition of the Internet protocol address format identifier", X.213/Amd.1, ISO/IEC 8348.

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

[18] 3GPP TS 25.426: "UTRAN Iur and Iub Interface Data Transport & Transport Signalling for DCH Data Streams".

[19] ITU-T Recommendation Q.2631.1 (10/2003): “IP Connection Control Signalling Protocol - Capability Set 1”~~TBD~~.

[20] 3GPP TS 23.236: "Intra-domain connection of Radio Access Network (RAN) nodes to multiple Core Network (CN) nodes".

[21] 3GPP TR 43.930: "Iur-g interface; Stage 2".

3GPP TSG-RAN WG3 Meeting #39 ***R3-031580***
San Diego, US, 17th – 21st November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.410** **CR** **044** ⌘**rev** **-** ⌘ Current version: **5.3.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network [X] Core Network [X]

Title:	⌘	Introduction of ITU-T Q.2631.1 for interworking solution 3
Source:	⌘	Siemens
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	08/11/2003
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)*
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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:	⌘	There is still the reference to an IP-ALCAP protocol missing. In order to close this gap necessary description of interworking using ITU-T Q.2631.1 is introduced.
Summary of change:	⌘	A reference was introduced in chapter 2 and the Iu-cs interface protocol structure was updated. Impact Analysis Impact assessment towards the previous version of the specification (same release): this CR has isolated impact on the previous version of the specification (same release) because only one function is impacted. This CR has an impact under the protocol point of view. The impact can be considered as isolated as it affects only the IP-ATM Interworking function.
Consequences if not approved:	⌘	If this CR is not approved, the external IWU scenario with IP-ALCAP will exist in the release 5 specification undefined.

Clauses affected:	⌘	2, 6.2			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	⌘ CR072 25.401 Rel-5 CR073 25.401 Rel-6 CR070 25.414 Rel-5 CR032 25.420 Rel-5 CR032 25.426 Rel-5 CR039 25.430 Rel-5
				Test specifications	
				O&M Specifications	

Other comments: ⌘

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[1] 3GPP TS 25.401: "UTRAN Overall Description".

[2] 3GPP TR 23.930: "Iu Principles".

[3] 3GPP TS 23.110: "UMTS Access Stratum Services and Functions".

[4] 3GPP TS 25.411: "UTRAN Iu Interface Layer 1".

[5] 3GPP TS 25.412: "UTRAN Iu Interface Signalling Transport".

[6] 3GPP TS 25.413: "UTRAN Iu Interface RANAP Signalling".

[7] 3GPP TS 25.414: "UTRAN Iu Interface Data Transport and Transport Signalling"

[8] 3GPP TS 25.415: "UTRAN Iu Interface User Plane Protocols".

[9] ITU-T Recommendation Q.711 (07/1996): "Functional description of the signalling connection control part".

[10] ITU-T Recommendation Q.712 (07/1996): "Definition and function of signalling connection control part messages".

[11] ITU-T Recommendation Q.713 (07/1996): "Signalling connection control part formats and codes".

[12] ITU-T Recommendation Q.714 (07/1996): "Signalling connection control part procedures".

[13] 3GPP TS 23.003: "Numbering, Addressing and Identification".

[14] 3GPP TS 25.419: "UTRAN Iu Interface: Service Area Broadcast Protocol SABP".

[15] 3GPP TS 23.153: "Out of Band Transcoder Control; Stage 2".

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

[17] ITU-T Recommendation Q.2630.2: "AAL type 2 signalling protocol - Capability Set 2".

[18] INTERNET-DRAFT, G. Sidebottom et al, "SS7 MTP3-User Adaptation Layer (M3UA)", draft-ietf-sigtran-m3ua-12.txt, February 2002.

[19] IETF RFC 1889(01/1996): "RTP: A Transport Protocol for Real Time Applications".

[20] IETF RFC 768 (08/1980): "User Datagram Protocol".

[21] IETF RFC 793 (09/1981): "TCP, Transmission Control Protocol".

[22] IETF RFC 791 (09/1981): "Internet Protocol".

[23] IETF RFC 2460 (12/1998): "Internet Protocol, Version 6 (IPv6) Specification".

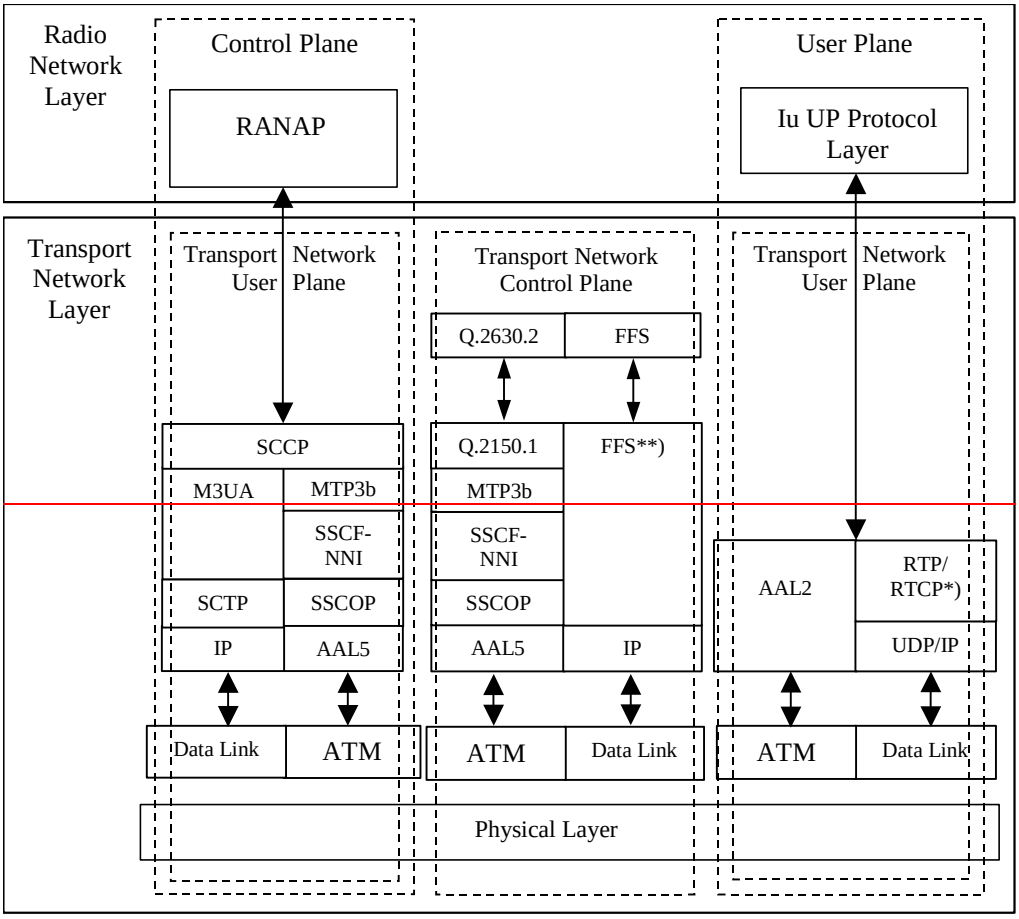
[24] IETF RFC 2960 (10/2000): "Stream Control Transmission Protocol".

[25] 3GPP TS 23.236: "Intra-domain connection of Radio Access Network (RAN) nodes to multiple Core Network (CN) nodes".

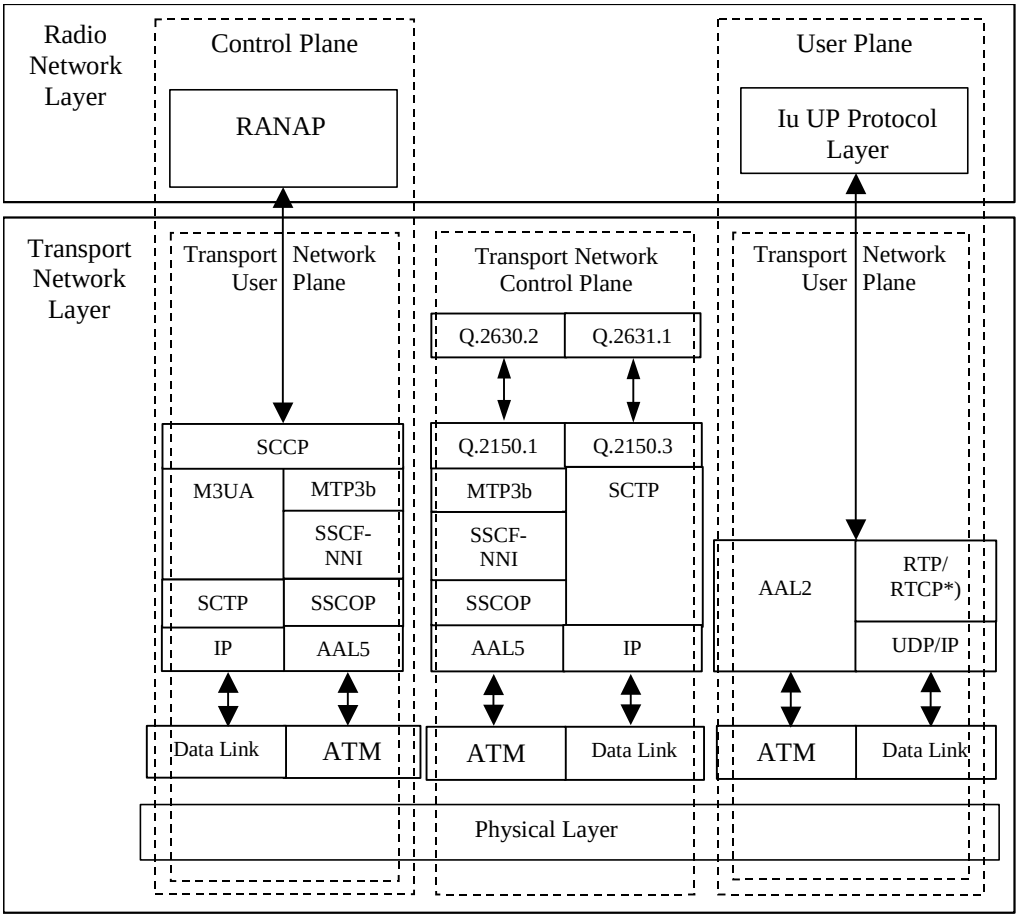
[26] ITU-T Recommendation Q.2631.1 (10/2003): “IP Connection Control Signalling Protocol - Capability Set 1”.

6.2 Iu-CS

Figure 6.1 shows the protocol structure for I_u-CS, following the structure described in [1].



*) RTCP is optional
**) depends on the interworking alternative selected (see [7])



*) RTCP is optional

Figure 6.1: I_u –Interface Protocol Structure towards CS Domain

3GPP TSG-RAN WG3 Meeting #39 **R3-031581**
San Diego, US, 17th – 21st November 2003

CR-Form-v7

CHANGE REQUEST

⌘ **25.414** **CR** **070** ⌘ **rev** **-** ⌘ Current version: **5.4.0** ⌘

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

Title:	⌘	Introduction of ITU-T Q.2631.1 for interworking solution 3
Source:	⌘	Siemens
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	08/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

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A *(corresponds to a correction in an earlier release)*
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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:	⌘	There is still the reference to an IP-ALCAP protocol missing. In order to close this gap necessary description of interworking using ITU-T Q.2631.1 is introduced.
Summary of change:	⌘	The necessary changes in reference chapter and in chapter 5.3.3 describing the IP-ALCAP for interworking were introduced. Impact Analysis Impact assessment towards the previous version of the specification (same release): this CR has isolated impact on the previous version of the specification (same release) because only one function is impacted. This CR has an impact under the protocol point of view. The impact can be considered as isolated as it affects only the IP-ATM Interworking function.
Consequences if not approved:	⌘	If this CR is not approved, the external IWU scenario with IP-ALCAP will exist in the release 5 specification undefined.

Clauses affected:	⌘	2, 3.2, 5.3.3			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	⌘ CR072 25.401 Rel-5 CR073 25.401 Rel-6 CR044 25.410 Rel-5 CR032 25.420 Rel-5 CR032 25.426 Rel-5 CR039 25.430 Rel-5
				Test specifications	
				O&M Specifications	

Other comments: ⌘

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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.

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- 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*.

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

[2] ITU-T Recommendation I.363.2 (11/00): "B-ISDN ATM Adaptation layer specification: Type 2 AAL".

[3] ITU-T Recommendation I.363.5 (8/96): "B-ISDN ATM Adaptation layer specification: Type 5 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 E.164 (5/97): "The international public telecommunication numbering plan".

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

[7] 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-NNI)".

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

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

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

[11] ITU-T Recommendation X.213 (11/95): "Information technology - Open systems interconnection - Network Service Definitions".

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

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

[14] IETF RFC 2684 (September 1999): "Multiprotocol Encapsulation over ATM Adaptation Layer 5".

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

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

[17] 3GPP TS 29.060: "General Packet Radio Service (GPRS) Service description; Stage 2".

[18] IETF RFC 793 (September 1981): "Transmission Control Protocol".

[19] IETF RFC 2474 (December 1998): "Definition of the Differentiated Services Field (DS Field) in the Ipv4 and Ipv6 Headers".

[20] ITU-T Implementor's guide (12/99) for recommendation Q.2210 (07/96).

[21] ITU-T Recommendation Q.2630.2 (12/00): "AAL type 2 signalling protocol (Capability Set 2)".

[22] IETF RFC 1889 (January 1996): "RTP: A Transport Protocol for Real Time Applications".

[23] IETF RFC 1890 (January 1996): "RTP Profile for Audio and Video Conferences with Minimal Control".

[24] 3G TS 25.415: "UTRAN Iu Interface User Plane Protocols"

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

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

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

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

[29] IETF RFC 2686 (September 1996): "The Multi-Class Extension to Multi-Link PPP".

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

[31] ITU-T Recommendation Q.2631.1 (10/2003): “IP Connection Control Signalling Protocol - Capability Set 1”~~"IP_ALCAP" [ffs.]~~

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

[36] ITU-T Recommendation Q.2632.1 (10/2003): “Interworking between AAL type 2 Signalling Protocol Capability Set 2 and IP Connection Control Signalling Protocol Capability Set 1”

[37] IETF RFC 2960 (10/2000): "Stream Control Transmission Protocol".

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

[39] ITU-T Recommendation Q.2150.3 (2001): " Signalling Transport Converter on SCTP ".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

Access Link Control Application Part (ALCAP): generic name for the transport signalling protocols used to set-up and teardown transport bearers

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AAL	ATM Adaptation Layer
AESA	ATM End System Address
ALCAP	Access Link Control Application Part
ARP	Address Resolution Protocol
ATM	Asynchronous Transfer Mode
CN	Core Network
GTP	GPRS Tunnelling Protocol
HDLC	High-level Data Link Control
IP	Internet Protocol
LC	Link Characteristics

LIS	Logical IP Subnet
MTP3b	Message Transfer Part level 3 for Q.2140
NSAP	Network Service Access Point
PDU	Protocol Data Unit
PPP	Point-to-Point Protocol
RFC	Request For Comment
RNC	Radio Network Controller
RTCP	Real-time Transport Control Protocol
RTP	Real-time Transport Protocol
SA	Service Area
SABP	Service Area Broadcast Protocol
SABS	Service Area Broadcast Service
SAR	Segmentation and Reassembly
SCSF-NNI	Service Specific Coordination Function-Network Node Interface
SSCOP	Service Specific Connection Oriented Protocol
SSCS	Service Specific Convergence Sublayer
SSISU	Service Specific Information (SAR-unassured) Parameter
SSRC	Synchronisation Source
TCP	Transmission Control Protocol
TEID	Tunnel Endpoint Identifier
UDP	User Datagram Protocol
VC	Virtual Circuit

5.3.3 IP-ALCAP for the Interworking

5.3.3.1 General

In the third interworking alternative as introduced in subclause 5.3.2, [31] is used as the IP-ALCAP protocol between the RNC/CN-node supporting IP transport option and the Transport Network Layer Interworking Unit.

The following figure shows the protocol stack for IP-ALCAP over Iu-CS in the third interworking alternative as introduced in subclause 5.3.2.

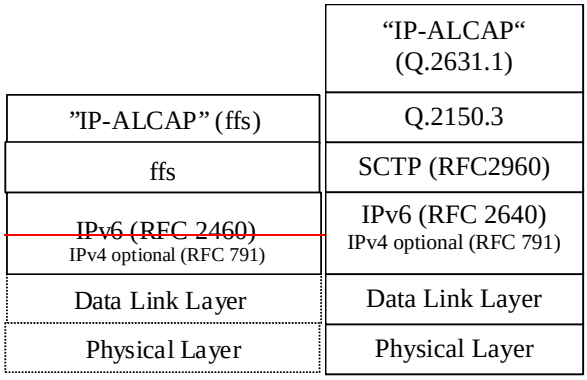

Figure 2a. Signalling bearer for IP-ALCAP.

5.3.3.2 Transport Signalling for the third interworking alternative

5.3.3.2.1 Signalling protocol ("IP-ALCAP")

5.3.3.2.1.1 IP Connection Signalling Protocol (Q.2631.1)

In the third interworking alternative as introduced in chapter 5.3.2 ITU-T Recommendation Q.2631.1 [31] shall be used for establishing IP connections between the UTRAN node supporting IP option and the Transport Network Layer Interworking Unit. The interworking between AAL type 2 Signalling Protocol Capability Set 2 and IP Connection Control Signalling Protocol Capability Set 1as defined ITU-T Recommendation Q.2632.1 [36] shall be applied in the Transport Layer Interworking Unit. For the conversion between AAL type 2 Link Characteristics and SSISU parameters and IPC IP Transfer Capabilities Q.2632.1 Appendix I [36] shall be applied.

The IP transport layer uses the embedded E.164 or other AESA variants of the NSAP addressing formats [11, 35]. Native E.164 addressing [5] shall not be used.

Binding ID provided by the radio network layer shall be copied in SUGR parameter of ESTABLISH request primitive of ITU-T Recommendation Q.2631.1 [31].

5.3.3.2.2 Signalling transport converter

5.3.3.2.2.1 SCTP Signalling Transport Converter (Q.2150.3)

The SCTP Signalling Transport Converter shall be used according to ITU-T Recommendation Q.2150.3 [39].

5.3.3.2.3 SCTP (RFC 2960)

SCTP as defined in ref.[37] shall be used. The checksum method specified in ref. [30] shall be used instead of the method specified in ref. [37].

5.3.3.2.4 IP

An IP RNC/CN-node shall support IPv6. The support of IPv4 is optional.

NOTE: This does not preclude single implementation and use of IPv4.

IP dual stack support is recommended for the potential transition period from IPv4 to IPv6 in the transport network.

3GPP TSG-RAN WG3 Meeting #39 **R3-031582**
San Diego, US, 17th – 21st November 2003

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CHANGE REQUEST

⌘ **25.420** **CR** **032** ⌘ **rev** **-** ⌘ Current version: **5.1.0** ⌘

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

Title:	⌘	Introduction of ITU-T Q.2631.1 for interworking solution 3
Source:	⌘	Siemens
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	08/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
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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:	⌘	There is still the reference to an IP-ALCAP protocol missing. In order to close this gap necessary description of interworking using ITU-T Q.2631.1 is introduced.
Summary of change:	⌘	The necessary changes in reference chapter and in chapter 8 describing the IP-ALCAP for interworking were introduced. Impact Analysis Impact assessment towards the previous version of the specification (same release): this CR has isolated impact on the previous version of the specification (same release) because only one function is impacted. This CR has an impact under the protocol point of view. The impact can be considered as isolated as it affects only the IP-ATM Interworking function.
Consequences if not approved:	⌘	If this CR is not approved, the external IWU scenario with IP-ALCAP will exist in the release 5 specification undefined.

Clauses affected:	⌘	2, 8			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	⌘ CR072 25.401 Rel-5 CR073 25.401 Rel-6 CR044 25.410 Rel-5 CR070 25.414 Rel-5 CR032 25.426 Rel-5 CR039 25.430 Rel-5
				Test specifications	
				O&M Specifications	

Other comments: ⌘

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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*.

[1] 3GPP TS 25.427: "UTRAN Iub/Iur Interface User Plane Protocol for DCH Data Streams".

[2] 3GPP TS 25.425: "UTRAN Iur Interface: User Plane Protocols for Common Transport Channel Data Streams".

[3] 3GPP TS 25.421: "UTRAN Iur Interface: Layer 1".

[4] 3GPP TS 25.422: "UTRAN Iur Interface: Signalling Transport".

[5] 3GPP TS 25.423: "UTRAN Iur Interface: RNSAP Signalling ".

[6] 3GPP TS 25.424: "UTRAN Iur Interface: Data Transport & Transport Signalling ".

[7] 3GPP TS 25.401: "UTRAN Overall Description".

[8] 3GPP TS 25.426: "UTRAN Iur & Iub Interface: Data Transport & Transport Signalling for DCH Data Streams".

[9] ITU-T Recommendation Q.711 (7/96): "Functional description of the signalling connection control part".

[10] ITU-T Recommendation Q.712 (7/96): "Definition and function of signalling connection control part messages".

[11] ITU-T Recommendation Q.713 (7/96): "Signalling connection control part formats and codes".

[12] ITU-T Recommendation Q.714 (7/96): "Signalling connection control part procedures".

[13] 3GPP TS 23.003: "Numbering, Addressing and Identification".

[14] ITU-T Recommendation Q.2630.1 (12/99): "AAL type 2 Signalling Protocol (Capability Set 1)".

[15] 3GPP TS 25.426: "UTRAN Iur and Iub Interface Data Transport & Transport Signalling for DCH Data Streams ".

[16] 3GPP TS 25.414: "UTRAN Iu Interface Data Transport and Transport Signalling".

[17] 3GPP TR 43.930: "Iur-g interface; Stage 2".

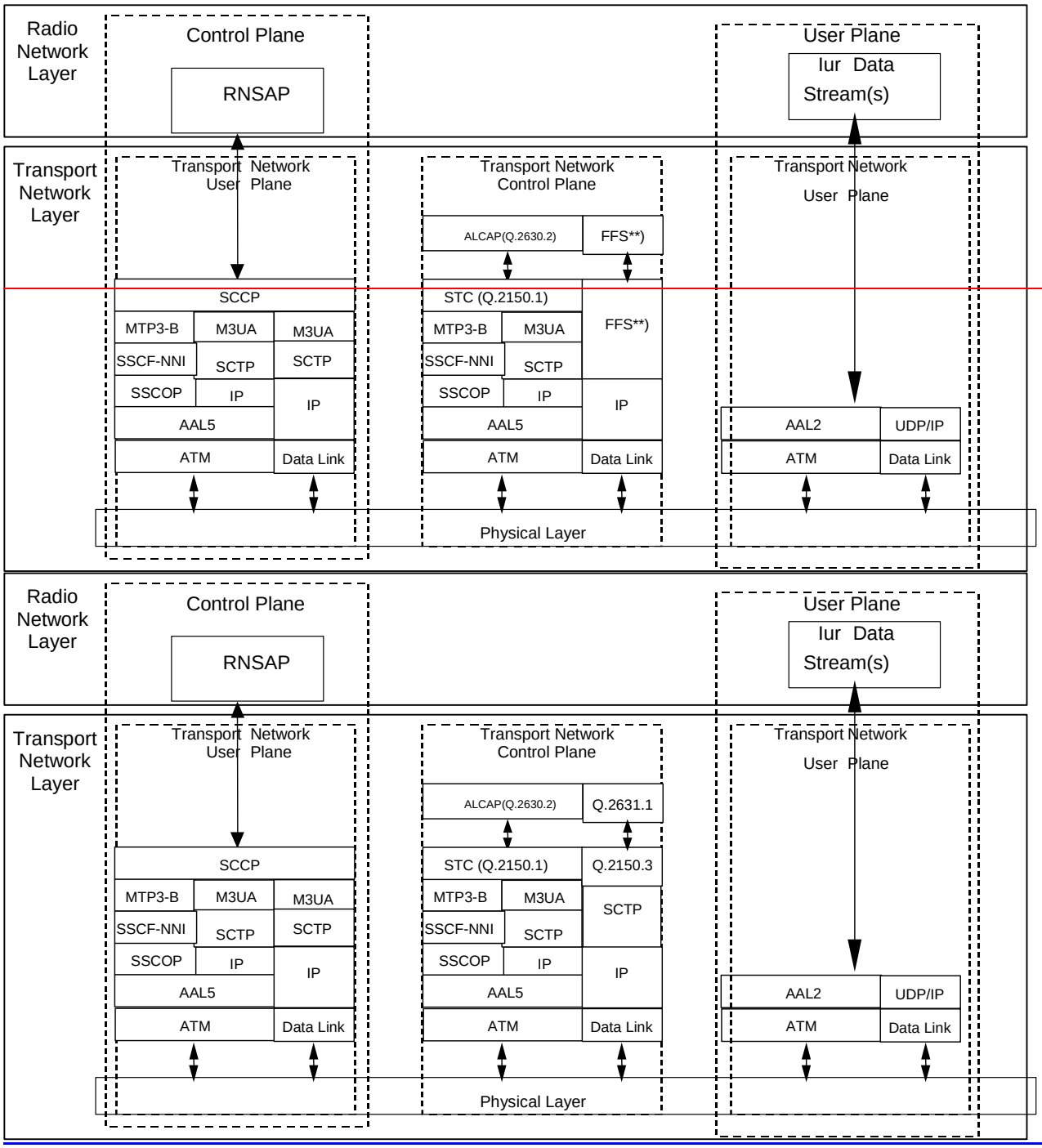
[18] ITU-T Recommendation Q.2631.1 (10/2003): “IP Connection Control Signalling Protocol - Capability Set 1”

8 I_{ur} Interface Protocol Structure

The Iur interface protocol architecture consists of two functional layers:

- Radio Network Layer, defines the procedures related to the interaction of two RNCs within a PLMN. The radio network layer consists of a Radio Network Control Plane and a Radio Network User Plane.
- Transport layer, defines procedures for establishing physical connections between two RNCs within a PLMN.

An IP ALCAP protocol may be supported depending on the ATM - IP inter-working solution selected. Further information on the ATM - IP interworking is provided in the transport layer specifications [15].



~~**) optional - depends on the interworking alternative selected (see [16]).~~

Figure 4: Iur Interface Protocol Structure

3GPP TSG-RAN WG3 Meeting #39 **R3-031583**
San Diego, US, 17th – 21st November 2003

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CHANGE REQUEST

⌘ **25.426** **CR** **032** ⌘ **rev** **-** ⌘ Current version: **5.3.0** ⌘

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

Title:	⌘	Introduction of ITU-T Q.2631.1 for interworking solution 3
Source:	⌘	Siemens
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	08/11/2003
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)*
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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:	⌘	There is still the reference to an IP-ALCAP protocol missing. In order to close this gap necessary description of interworking using ITU-T Q.2631.1 is introduced.
Summary of change:	⌘	The necessary changes in reference chapter and in chapter 9.3 describing the IP-ALCAP for interworking were introduced. Impact Analysis Impact assessment towards the previous version of the specification (same release): this CR has isolated impact on the previous version of the specification (same release) because only one function is impacted. This CR has an impact under the protocol point of view. The impact can be considered as isolated as it affects only the IP-ATM Interworking function.
Consequences if not approved:	⌘	If this CR is not approved, the external IWU scenario with IP-ALCAP will exist in the release 5 specification undefined.

Clauses affected:	⌘	2, 3.2, 9.3			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	⌘ CR072 25.401 Rel-5 CR073 25.401 Rel-6 CR044 25.410 Rel-5 CR070 25.414 Rel-5 CR032 25.420 Rel-5 CR032 25.426 Rel-5 CR039 25.430 Rel-5
				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/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.

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] 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] ITU-T Recommendation Q.2631.1 (10/2003): “IP Connection Control Signalling Protocol - Capability Set 1”~~"IP ALCAP" [ffs]~~

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

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

[36] ITU-T Recommendation Q.2632.1 (10/2003): “Interworking between AAL type 2 Signalling Protocol Capability Set 2 and IP Connection Control Signalling Protocol Capability Set 1”

[39] ITU-T Recommendation Q.2150.3 (2001): " Signalling Transport Converter on SCTP ".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following term and definition applies:

ALCAP: transport signalling protocol used to setup and tear down transport bearers

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AAL2	ATM Adaptation Layer type 2
AESA	ATM End System Address
ATM	Asynchronous Transfer Mode
CPCS	Common Part Convergence Sublayer
CPS	Common Part Sublayer
DCH	Dedicated Channel
HDLC	High level Data Link Control

HS-DSCH	High Speed Downlink Shared Channel
IP	Internet Protocol
LC	Link Characteristics
M3UA	SS7 MTP3 User Adaptation layer
ML/MC	Multi-link / Multi-class
MPLS	Multiprotocol Label Switching
MTP	Message Transfer Part
NNI	Network-Node Interface
NSAP	Network Service Access Point
PPP	Point to Point Protocol
PT	Path Type
SAAL	Signalling ATM Adaptation Layer
SAR	Segmentation and Reassembly
SCTP	Stream Control Transmission Protocol
SSCF	Service Specific Co-ordination Function
SSCOP	Service Specific Connection Oriented Protocol
SSCS	Service Specific Convergence Sublayer
SSISU	Service Specific Information (SAR-unassured) Parameter
SSSAR	Service Specific Segmentation and Reassembly sublayer
STC	Signalling Transport Converter
TNL-IWU	Transport Network Layer Interworking Unit
UDP	User Datagram Protocol
UNI	User-Network Interface

9.3 IP-ALCAP for the Interworking

In the third interworking alternative as introduced in chapter 9.2, ITU-T Recommendation Q.2631.1 [35] shall be used for establishing IP connections between the UTRAN node supporting IP option and the Transport Network Layer Interworking Unit. The interworking between AAL type 2 Signalling Protocol Capability Set 2 and IP Connection Control Signalling Protocol Capability Set 1as defined ITU-T Recommendation Q.2632.1 [36] shall be applied in the Interworking Unit. For the conversion between AAL type 2 Link Characteristics and SSISU parameters and IPC IP Transfer Capabilities Q.2632.1 Appendix I [36] shall be applied.~~IP ALCAP protocol [35] is used as the IP ALCAP protocol between the UTRAN node supporting IP option and the Transport Network Layer Interworking Unit.~~

~~*[ffs]*~~

Binding ID provided by the radio network layer shall be copied in SUGR parameter of ESTABLISH.request primitive of [35].

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.

IP 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.

IP Connection Control Signalling as specified in [35] shall be carried over Q.2150.3 (SCTP Signalling Transport Converter) over SCTP (RFC 2960) over IP.

The checksum method specified in ref. [30] shall be used instead of the method specified in ref. [37].

The UTRAN node supporting the IP option shall consider interworking with Q.2630 as described within chapter 6.2, i.e. values for the IP Transfer Capabilities sent from the UTRAN node supporting the IP option shall not result in values higher than 2048Kbit/s in Q.2630.

3GPP TSG-RAN WG3 Meeting #39 **R3-031584**
San Diego, US, 17th – 21st November 2003

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CHANGE REQUEST

⌘ **25.430** **CR** **039** ⌘ **rev** **-** ⌘ Current version: **5.2.0** ⌘

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

Title:	⌘	Introduction of ITU-T Q.2631.1 for interworking solution 3
Source:	⌘	Siemens
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	08/11/2003
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)*
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Use one of the following releases:
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R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	There is still the reference to an IP-ALCAP protocol missing. In order to close this gap necessary description of interworking using ITU-T Q.2631.1 is introduced.
Summary of change:	⌘	The necessary changes in reference chapter and in chapter 7 describing the IP-ALCAP for interworking were introduced. Impact Analysis Impact assessment towards the previous version of the specification (same release): this CR has isolated impact on the previous version of the specification (same release) because only one function is impacted. This CR has an impact under the protocol point of view. The impact can be considered as isolated as it affects only the IP-ATM Interworking function.
Consequences if not approved:	⌘	If this CR is not approved, the external IWU scenario with IP-ALCAP will exist in the release 5 specification undefined.

Clauses affected:	⌘	2, 7			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	⌘ CR072 25.401 Rel-5 CR073 25.401 Rel-6 CR044 25.410 Rel-5 CR070 25.414 Rel-5 CR032 25.420 Rel-5 CR032 25.426 Rel-5
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				O&M Specifications	

Other comments: ⌘

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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.

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- 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*.

[1] 3GPP TS 25.401: "UTRAN Overall Description".

[2] 3GPP TS 25.442: "UTRAN Implementation Specific O&M transport".

[3] 3GPP TS 25.432: "UTRAN Iub interface signalling transport".

[4] 3GPP TS 25.302: "Services Provided by the Physical Layer".

[5] 3GPP TS 25.431: "UTRAN Iub Interface: Layer 1".

[6] 3GPP TS 25.432: "UTRAN Iub Interface: Signalling Transport".

[7] 3GPP TS 25.433: "NBAP Specification".

[8] 3GPP TS 25.434: "UTRAN Iub Interface: Data Transport & Transport Signalling for Common Transport Channel Data Streams".

[9] 3GPP TS 25.435: "UTRAN Iub Interface: User Plane Protocols for Common Transport Channel Data Streams".

[10] 3GPP TS 25.426: "UTRAN Iur/Iub Interface: Data Transport & Transport Signalling for DCH Data Streams".

[11] 3GPP TS 25.427: "UTRAN Iur/Iub Interface: User Plane Protocol for DCH Data Streams".

[12] 3GPP TS 25.402: "Synchronization in UTRAN, Stage 2".

[13] ITU-T Recommendation Q.2630.1 (12/99): "AAL type 2 Signalling Protocol (Capability Set 1)".

[14] ITU-T Recommendation Q.2631.1 (10/2003): “IP Connection Control Signalling Protocol - Capability Set 1”

7 Iub Interface Protocol Structure

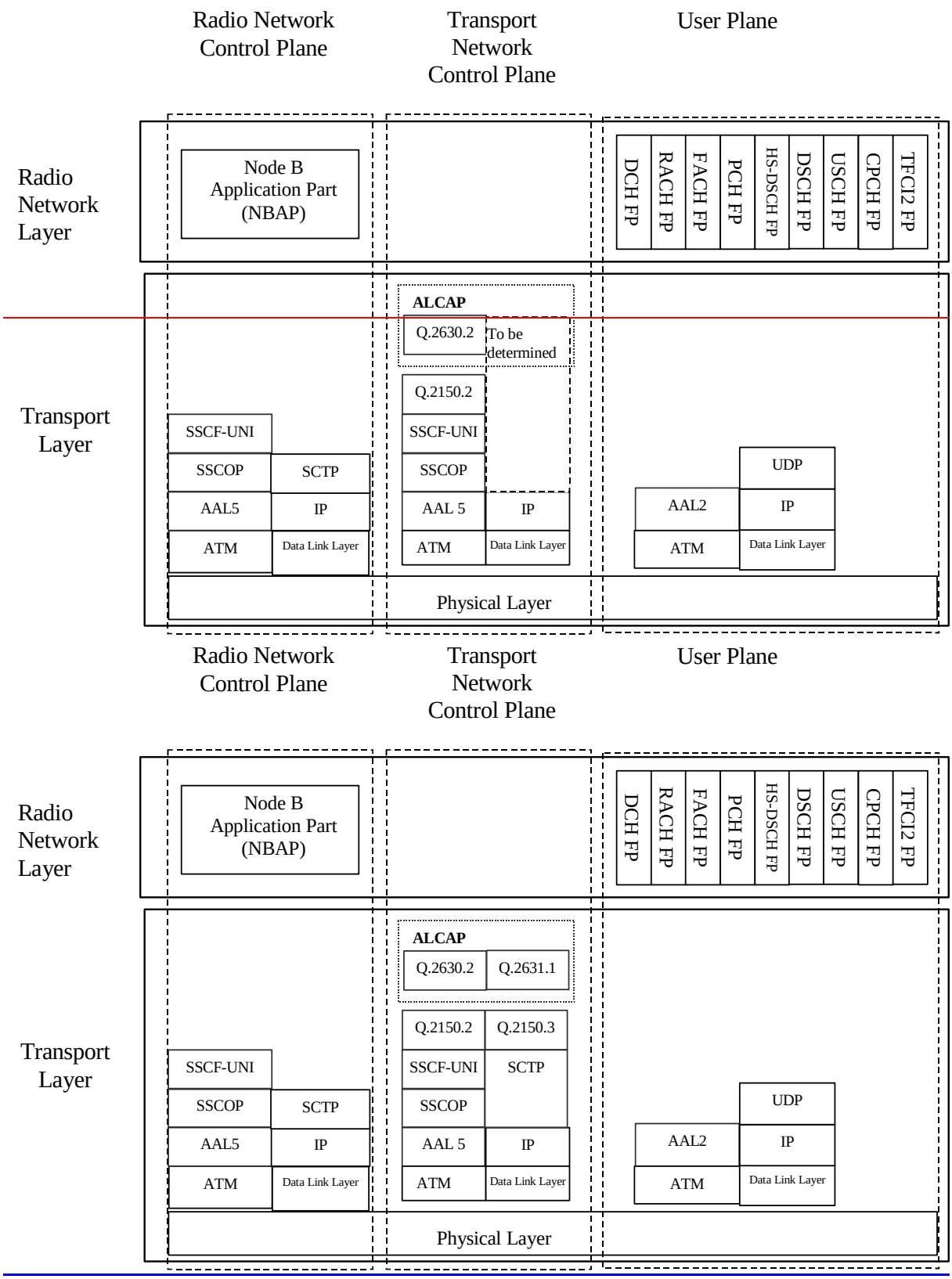

Figure 7: Iub Interface Protocol Structure.

The Iub interface protocol architecture consists of two functional layers:

1. Radio Network Layer, defines procedures related to the operation of Node B. The radio network layer consists of a radio network control plane and a radio network user plane.

2. Transport Layer, defines procedures for establishing physical connections between Node B and the RNC.

There shall be one dedicated AAL2 or UDP/IP transport bearer for each RACH, one for each FACH transport channel, and one for each CPCH [FDD].

An IP ALCAP protocol (ref.[14]) may be supported by an IP UTRAN node depending on the ATM - IP inter-working solution selected. Further information on the ATM - IP interworking is provided in the transport layer specification [10].