TSG RAN Meeting #23 **RP-040054**
Phoenix, Arizona, USA, 10 - 12 March 2004

Title **Technically endorsed CRs (Rel-5 and Rel-6 Category A) to TS 25.401, TS 25.410, TS 25.414, TS 25.420, TS 25.426, TS 25.430 , Introduction of ITU-T Q.2631.1 for interworking solution 3**
Source **TSG RAN WG3**
Agenda Item **7.4.6**

RAN3 Tdoc	CR.	Rev.	Cat	Spec.	curr. Vers.	new Vers.	REL	Work Item	Title
R3-040486	77	2	F	25.401	5.7.0	5.8.0	REL-5	ETRAN-IPtrans	Introduction of ITU-T Q.2631.1 for interworking solution 3
R3-040487	78	2	A	25.401	6.2.0	6.3.0	REL-6	ETRAN-IPtrans	Introduction of ITU-T Q.2631.1 for interworking solution 3
R3-040488	45	2	F	25.410	5.3.0	5.4.0	REL-5	ETRAN-IPtrans	Introduction of ITU-T Q.2631.1 for interworking solution 3
R3-040489	46	2	A	25.410	6.0.0	6.1.0	REL-6	ETRAN-IPtrans	Introduction of ITU-T Q.2631.1 for interworking solution 3
R3-040490	72	2	F	25.414	5.5.0	5.6.0	REL-5	ETRAN-IPtrans	Introduction of ITU-T Q.2631.1 for interworking solution 3
R3-040491	73	2	A	25.414	6.0.0	6.1.0	REL-6	ETRAN-IPtrans	Introduction of ITU-T Q.2631.1 for interworking solution 3
R3-040492	33	2	F	25.420	5.1.0	5.2.0	REL-5	ETRAN-IPtrans	Introduction of ITU-T Q.2631.1 for interworking solution 3
R3-040493	34	2	A	25.420	6.0.0	6.1.0	REL-6	ETRAN-IPtrans	Introduction of ITU-T Q.2631.1 for interworking solution 3

RAN3 Tdoc	CR.	Rev.	Cat	Spec.	curr. Vers.	new Vers.	REL	Work Item	Title
R3-040494	33	2	F	25.426	5.3.0	5.4.0	REL-5	ETRAN-IPtrans	Introduction of ITU-T Q.2631.1 for interworking solution 3
R3-040495	34	2	A	25.426	6.0.0	6.1.0	REL-6	ETRAN-IPtrans	Introduction of ITU-T Q.2631.1 for interworking solution 3
R3-040496	43	2	F	25.430	5.2.0	5.3.0	REL-5	ETRAN-IPtrans	Introduction of ITU-T Q.2631.1 for interworking solution 3
R3-040497	44	2	A	25.430	6.0.0	6.1.0	REL-6	ETRAN-IPtrans	Introduction of ITU-T Q.2631.1 for interworking solution 3

3GPP TSG-RAN WG3 Meeting #41 ***R3-040486***
Malaga, Spain, 16th – 20th February 2004

CR-Form-v7

CHANGE REQUEST

⌘ **25.401** **CR** **077** ⌘ **rev** **2** ⌘ Current version: **5.7.0** ⌘

*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:	⌘	RAN3		
Work item code:	⌘	ETRAN-IPtrans	***Date:*** ⌘	16/02/04
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 with the previous version of the specification (same release) because for the functionality of IP/ATM-Interworking references and procedural text was missing. This CR has an impact under functional and protocol point of view. The impact can be considered isolated because the change affects one system function namely 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				
Other specs	⌘	Y: X / N:	Other core specifications	⌘	CR078 25.401 Rel-6 CR045 25.410 Rel-5 CR046 25.410 Rel-6	

				CR072 25.414 Rel-5 CR073 25.414 Rel-6 CR033 25.420 Rel-5 CR034 25.420 Rel-6 CR033 25.426 Rel-5 CR034 25.426 Rel-6 CR043 25.430 Rel-5 CR044 25.430 Rel-6
affected:		**X**	Test specifications	
		X	O&M Specifications	
Other comments:	⌘	This CR was formerly submitted as 25.401CR72 in R3-040165 and as 25.401CR77 in R3-040212 and as 25.401CR77 rev1 in R3-040345		

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.
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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".

3 Definitions and abbreviations

3.1 Definitions

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

ALCAP: generic name for the transport signalling protocols used to set-up and tear-down transport bearers

Cell: Radio Network object that can be uniquely identified by a User Equipment from a (cell) identification that is broadcasted over a geographical area from one *UTRAN Access Point*
A Cell is either FDD or TDD mode.

3GPP TSG-RAN WG3 Meeting #41 **R3-040487**
Malaga, Spain, 16th – 20th February 2004

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CHANGE REQUEST

⌘ **25.401** **CR** **078** ⌘ **rev** **2** ⌘ Current version: **6.2.0** ⌘

*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:	⌘	Introduction of ITU-T Q.2631.1 for interworking solution 3			
Source:	⌘	RAN3			
Work item code:	⌘	ETRAN-IPtrans	***Date:*** ⌘	16/02/04	
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 with the previous version of the specification (same release) because for the functionality of IP/ATM-Interworking references and procedural text was missing. This CR has an impact under functional and protocol point of view. The impact can be considered isolated because the change affects one system function namely 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			
Other specs	⌘	Y: X / N:	Other core specifications	⌘	CR077 25.401 Rel-5 CR045 25.410 Rel-5 CR046 25.410 Rel-6

				CR072 25.414 Rel-5 CR073 25.414 Rel-6 CR033 25.420 Rel-5 CR034 25.420 Rel-6 CR033 25.426 Rel-5 CR034 25.426 Rel-6 CR043 25.430 Rel-5 CR044 25.430 Rel-6
affected:		**X**	Test specifications	
		X	O&M Specifications	
Other comments:	⌘	This CR was formerly submitted as 25.401CR73 in R3-040166 and as 25.401CR78 in R3-040213 and as 25.401CR78 rev1 in R3-040346		

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:

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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".

3 Definitions and abbreviations

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A Cell is either FDD or TDD mode.

3GPP TSG-RAN WG3 Meeting #41 ***R3-040488***
Malaga, Spain, 16th – 20th February 2004

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CHANGE REQUEST

⌘ **25.410** **CR** **045** ⌘ **rev** **2** ⌘ 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 ☒ Core Network ☒

Title:	⌘	Introduction of ITU-T Q.2631.1 for interworking solution 3			
Source:	⌘	RAN3			
Work item code:	⌘	ETRAN-IPtrans	***Date:*** ⌘	16/02/04	
Category:	⌘	**F**	***Release:*** ⌘	Rel-5	
		Use one of the following categories:		*Use one of the following releases:*	
		F *(correction)*		*2*	*(GSM Phase 2)*
		A *(corresponds to a correction in an earlier release)*		*R96*	*(Release 1996)*
		B *(addition of feature),*		*R97*	*(Release 1997)*
		C *(functional modification of feature)*		*R98*	*(Release 1998)*
		D *(editorial modification)*		*R99*	*(Release 1999)*
		Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*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. Rev1 of 25.410CR44: Clarified that the presence of Q.2631.1, Q.2150.3 and SCTP in the Transport Network Control Plane are depending on the interworking alternative selected 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 for the functionality of IP/ATM-Interworking references and procedural text was missing. This CR has an impact under functional and protocol point of view. The impact can be considered isolated because the change affects one system function namely 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	⌘	**X**		Other core specifications	⌘	CR077 25.401 Rel-5 CR078 25.401 Rel-6 CR046 25.410 Rel-6 CR072 25.414 Rel-5 CR073 25.414 Rel-6 CR033 25.420 Rel-5 CR034 25.420 Rel-6 CR033 25.426 Rel-5 CR034 25.426 Rel-6 CR043 25.430 Rel-5 CR044 25.430 Rel-6
affected:			**X**	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR was formerly submitted as 25.410CR44 in R3-040167 and as 25.410CR45 in R3-040214 and as 25.410CR45 rev1 in R3-040347				

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:

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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.

2 References

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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".

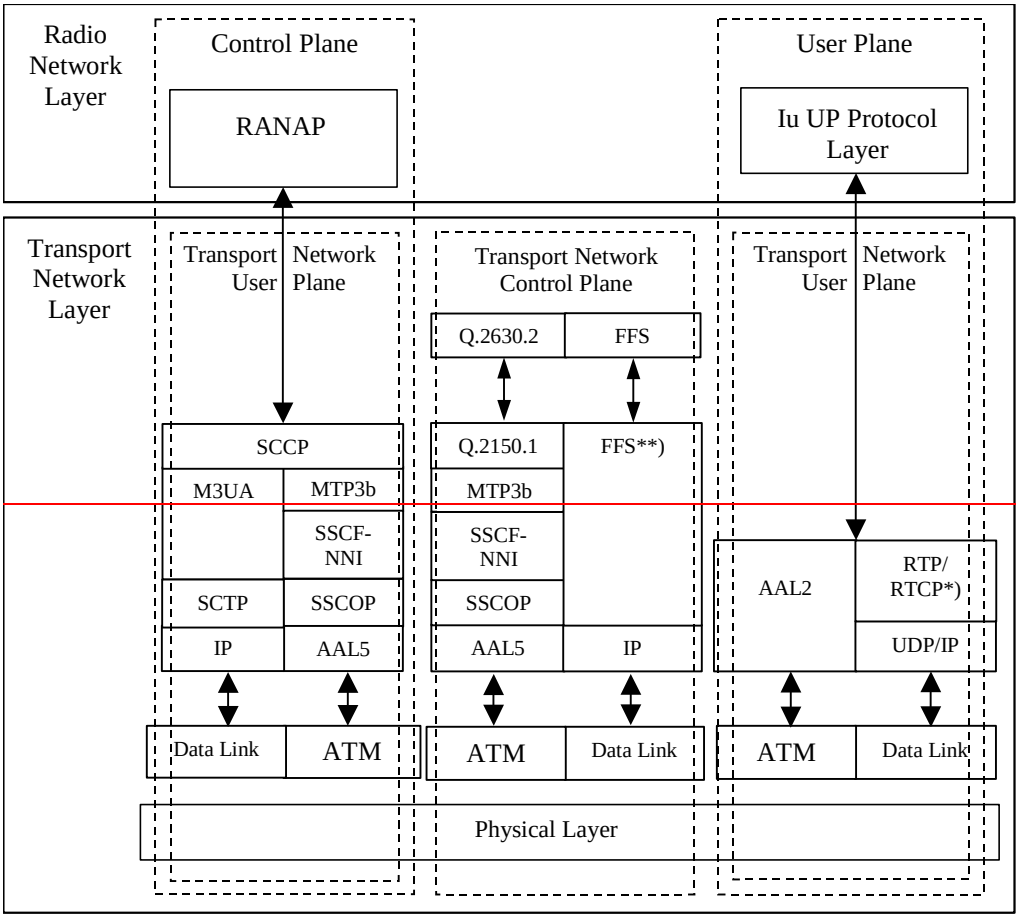
[24] IETF RFC 2960 (10/2000): "Stream Control Transmission Protocol".

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

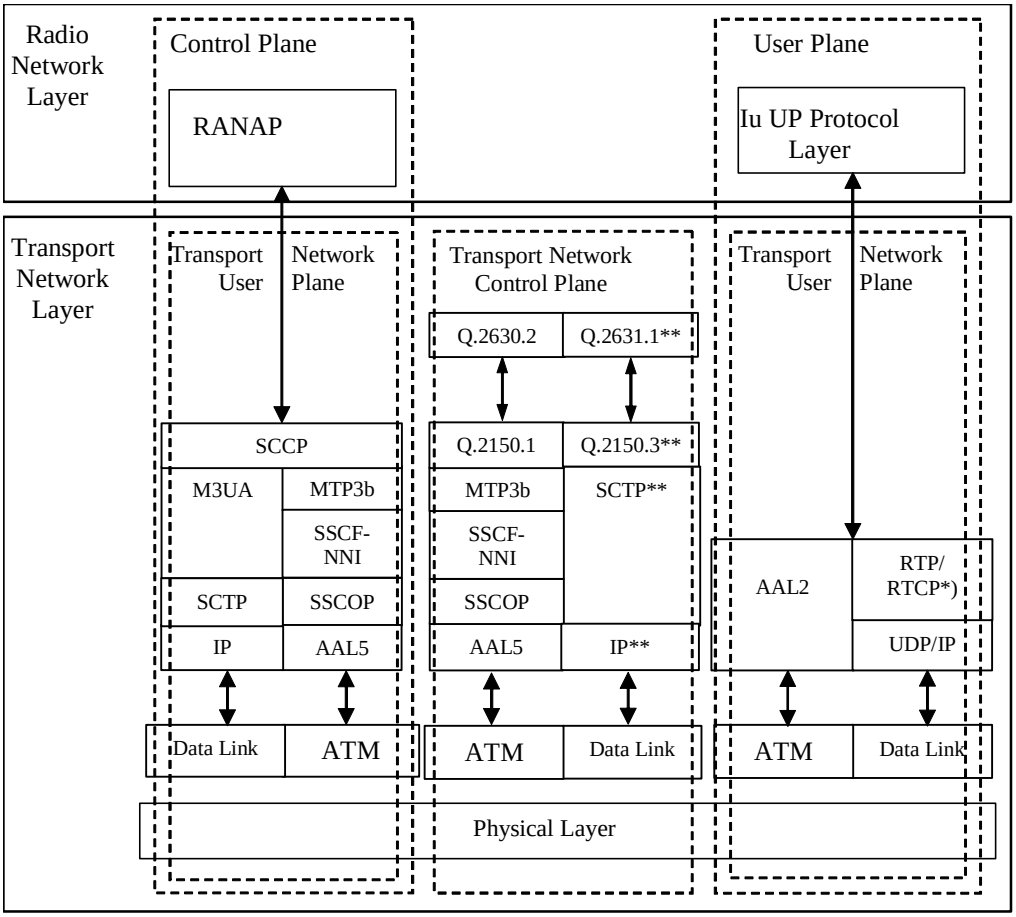
[26] ITU-T Recommendation Q.2631.1 (10/2003): “IP Connection Control Signalling Protocol - Capability Set 1”.

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
**) Depends on the interworking alternative selected (see [7])

Figure 6.1: I_u –Interface Protocol Structure towards CS Domain

3GPP TSG-RAN WG3 Meeting #41 ***R3-040489***
Malaga, Spain, 16th – 20th February 2004

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CHANGE REQUEST

⌘ **25.410** **CR** **046** ⌘ **rev** **2** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	RAN3
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	16/02/04
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:	⌘	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 with the previous version of the specification (same release) because for the functionality of IP/ATM-Interworking references and procedural text was missing. This CR has an impact under functional and protocol point of view. The impact can be considered isolated because the change affects one system function namely 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				
Other specs	⌘	**Y** X	**N**	Other core specifications	⌘	CR077 25.401 Rel-5 CR078 25.401 Rel-6 CR045 25.410 Rel-5

				CR072 25.414 Rel-5 CR073 25.414 Rel-6 CR033 25.420 Rel-5 CR034 25.420 Rel-6 CR033 25.426 Rel-5 CR034 25.426 Rel-6 CR043 25.430 Rel-5 CR044 25.430 Rel-6
affected:		**X**	Test specifications	
		X	O&M Specifications	

Other comments: ⌘ This CR was formerly submitted as 25.410CR46 rev1 in R3-040348

How to create CRs using this form:

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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.

2 References

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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 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”.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in [1] apply.

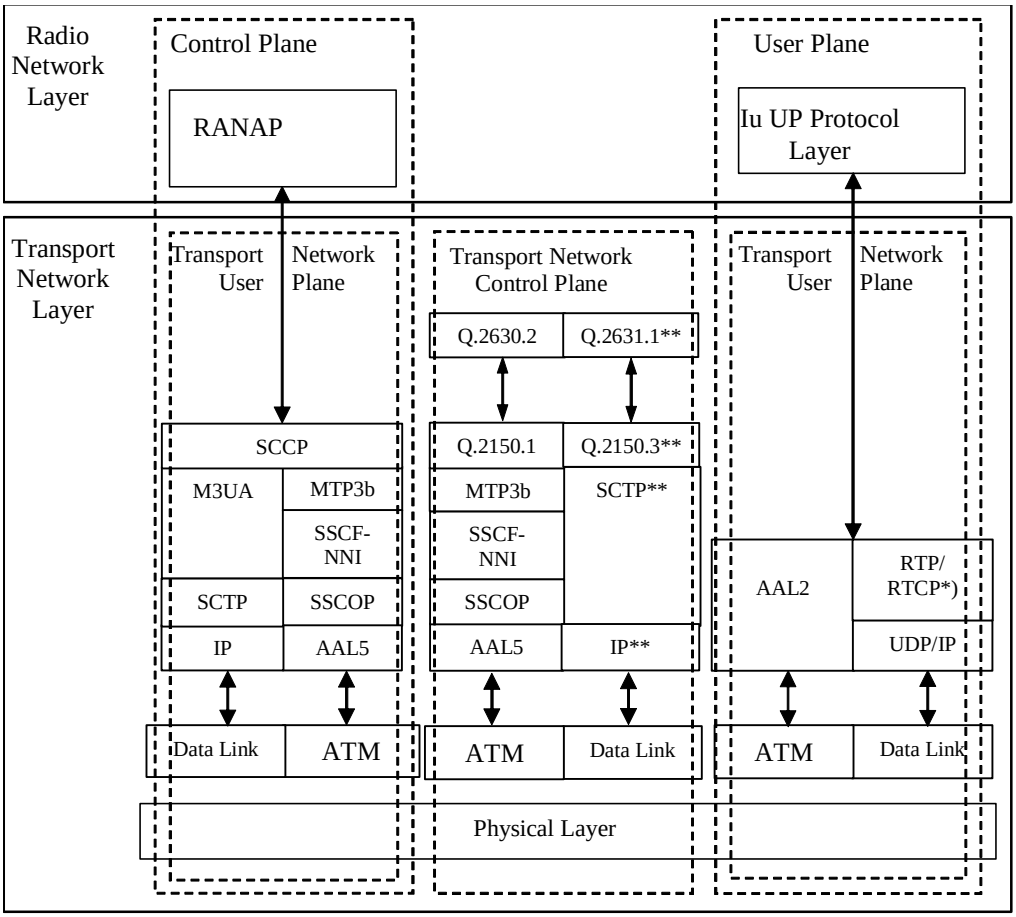
3.2 Abbreviations

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

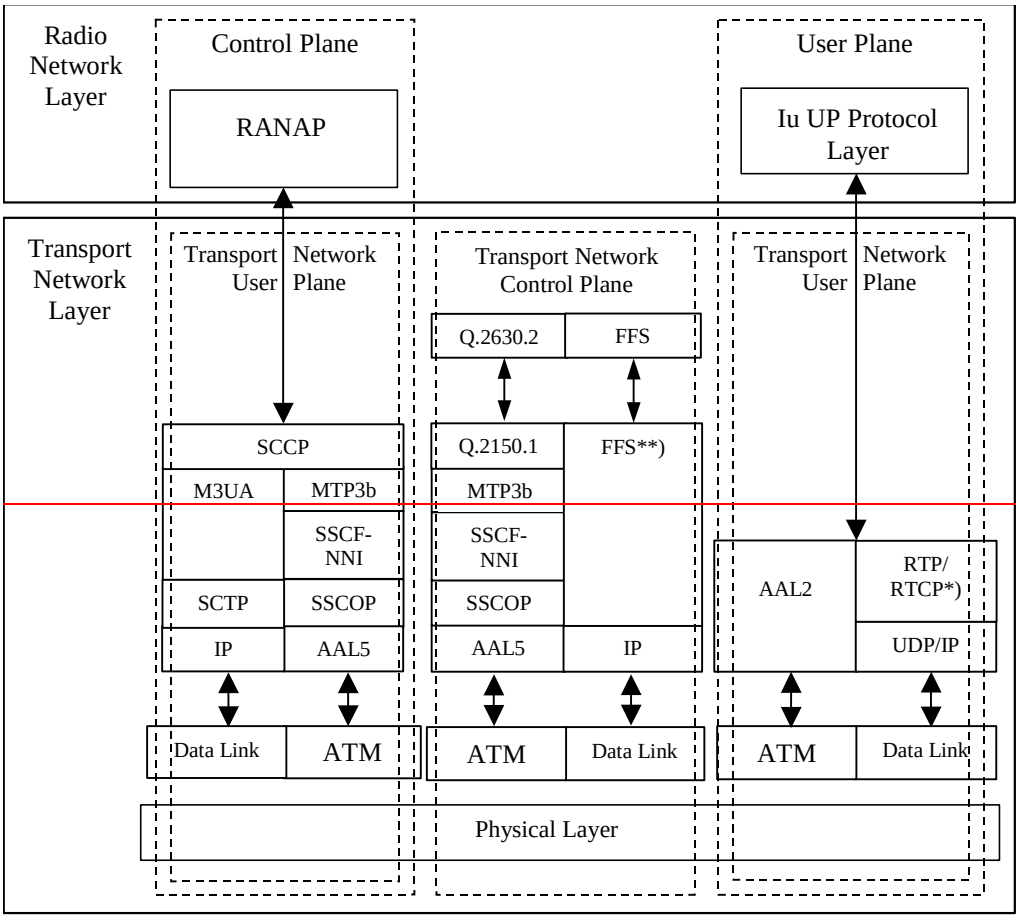
3G-MSC	3rd Generation Mobile Switching Centre
3G-SGSN	3rd Generation Serving GPRS Support Node
AAL	ATM Adaptation Layer
ATM	Asynchronous Transfer Mode
BC	Broadcast
BSSMAP	Base Station Subsystem Management Application Part
CBS	Cell Broadcast Service
CC	Connection Confirm
CN	Core Network
CR	Connection Release
CREF	Connection Refusal
CS	Circuit Switched
GT	Global Title
GTP-U	GPRS Tunnelling Protocol
IMSI	International Mobile Subscriber Identity
IP	Internet Protocol
ISDN	Integrated Services Digital Network
LA	Location Area
M3UA	MTP3 User Adaptation Layer
NAS	Non Access Stratum
NNSF	NAS Node Selection Function
O&M	Operation and Maintenance
PLMN	Public Land Mobile Network
PS	Packet Switched
PSTN	Public Switched Telephone Network
PVC	Permanent Virtual Circuit
QoS	Quality of Service
RA	Routing Area
RAB	Radio Access Bearer
RANAP	Radio Access Network Application Part
RLP	Radio Link Protocol
RNC	Radio Network Controller
RNL	Radio Network Layer
RRC	Radio Resource Control
RTCP	Real Time Control Protocol
RTP	Real Time Protocol
SA	Service Area
SABP	Service Area Broadcast Protocol
SAP	Service Access Point
SCCP	Signalling Connection Control Part

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

Figure 6.1: I_u –Interface Protocol Structure towards CS Domain

3GPP TSG-RAN WG3 Meeting #41 ***R3-040490***
Malaga, Spain, 16th – 20th February 2004

CR-Form-v7

CHANGE REQUEST

⌘ **25.414** **CR** **072** ⌘ **rev** **2** ⌘ Current version: **5.5.0** ⌘

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

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

Title:	⌘	Introduction of ITU-T Q.2631.1 for interworking solution 3
Source:	⌘	RAN3
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	16/02/04
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 necessary changes in reference chapter and in chapter 5.3.3 describing the IP-ALCAP for interworking were introduced. Rev1 of 25.414CR70: - Removed the reference to Q.2632.1 and the corresponding description of the interworking functionality - replaced the “is used” by “shall be the connection control protocol” - Updated the reference numbers accordingly 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 for the functionality of IP/ATM-Interworking references and procedural text was missing. This CR has an impact under functional and protocol point of view. The impact can be considered isolated because the change affects one system function namely 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	⌘	**X**		Other core specifications	⌘ CR077 25.401 Rel-5 CR078 25.401 Rel-6 CR045 25.410 Rel-5 CR046 25.410 Rel-6 CR073 25.414 Rel-6 CR033 25.420 Rel-5 CR034 25.420 Rel-6 CR033 25.426 Rel-5 CR034 25.426 Rel-6 CR043 25.430 Rel-5 CR044 25.430 Rel-6
affected:			**X**	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR was formerly submitted as 25.414CR70 in R3-040168 and as 25.414CR72 in R3-040216 and as 25.414CR72 rev1 in R3-040349			

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

[37] IETF RFC 3309 (September 2002): "SCTP Checksum Change".

[38] ITU-T Recommendation Q.2150.3 (12/2002): "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

5.3 Interworking between ATM and IP Transport Options

5.3.1 Introduction

This clause specifies the interworking between IP and ATM transport options. An RNC/CN-node supporting IP transport option shall provide interworking to a CN-node/RNC supporting only ATM transport option.

5.3.2 Interworking Alternatives

For interworking with a CN-node/RNC supporting only ATM transport option, the RNC/CN-node supporting IP transport option shall additionally support at least one of the following interworking mechanisms:

1) ATM&IP dual stack. An IP-ALCAP protocol is not required in this interworking solution.

2) Interworking Function (IWF) as a logical part of the RNC/CN-node supporting IP transport option. An IP-ALCAP protocol is not required in this interworking solution.

3) Interworking Unit (IWU) as a logically separate unit. An IP-ALCAP protocol shall be used in the interface between the RNC/CN-node supporting IP transport option and the Interworking Unit.

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] shall be supported as connection control~~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.

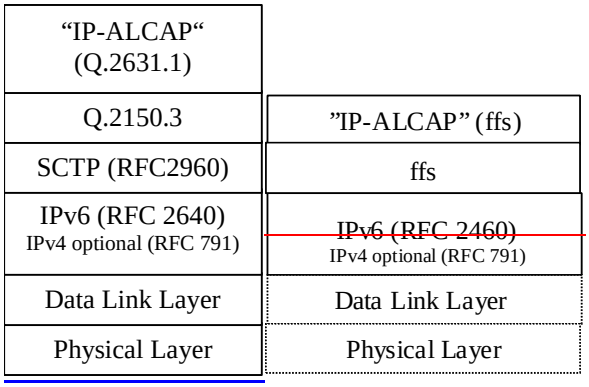


Figure 2a. Signalling bearer for IP-ALCAP.

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 Control 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 supported for establishing IP connections between the UTRAN node supporting IP option and the Transport Network Layer Interworking Unit.

Destination Endpoint Address parameter of Q.2631.1 [31] shall be based on embedded E.164 or other AESA variants of the NSAP addressing format [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 [38].

5.3.3.2.3 SCTP (RFC 2960)

SCTP as defined in ref. [36] shall be used. The checksum method specified in ref. [37] shall be used instead of the method specified in ref. [36].

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.

6 Packet switched domain

6.1 Transport network user plane

6.1.1 General

There are two options for the transport layer for data streams over Iu-PS:

1) ATM based Transport (ATM transport option)
2) IP based Transport (IP transport option)

3GPP TSG-RAN WG3 Meeting #41 **R3-040491**
Malaga, Spain, 16th – 20th February 2004

CR-Form-v7

CHANGE REQUEST

⌘ **25.414** **CR** **073** ⌘ **rev** **2** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	RAN3
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	16/02/04
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 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 with the previous version of the specification (same release) because for the functionality of IP/ATM-Interworking references and procedural text was missing.

This CR has an impact under functional and protocol point of view.
The impact can be considered isolated because the change affects one system function namely 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

Other specs	⌘	Y	N	Other core specifications	⌘	CR077 25.401 Rel-5 CR078 25.401 Rel-6 CR045 25.410 Rel-5
		X				

			CR046 25.410 Rel-6 CR072 25.414 Rel-5 CR033 25.420 Rel-5 CR034 25.420 Rel-6 CR033 25.426 Rel-5 CR034 25.426 Rel-6 CR043 25.430 Rel-5 CR044 25.430 Rel-6
affected:		**X**	Test specifications
		X	O&M Specifications
Other comments:	⌘	This CR was formerly submitted as 25.414CR73 rev1 in R3-040350	

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.

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

[2] ITU-T Recommendation I.363.2 (11/00): "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".

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[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".

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[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".

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

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

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

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

[37] IETF RFC 3309 (September 2002): "SCTP Checksum Change".

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3 Definitions and abbreviations

3.1 Definitions

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3.2 Abbreviations

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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

5.3 Interworking between ATM and IP Transport Options

5.3.1 Introduction

This clause specifies the interworking between IP and ATM transport options. An RNC/CN-node supporting IP transport option shall provide interworking to a CN-node/RNC supporting only ATM transport option.

5.3.2 Interworking Alternatives

For interworking with a CN-node/RNC supporting only ATM transport option, the RNC/CN-node supporting IP transport option shall additionally support at least one of the following interworking mechanisms:

1) ATM&IP dual stack. An IP-ALCAP protocol is not required in this interworking solution.

2) Interworking Function (IWF) as a logical part of the RNC/CN-node supporting IP transport option. An IP-ALCAP protocol is not required in this interworking solution.

3) Interworking Unit (IWU) as a logically separate unit. An IP-ALCAP protocol shall be used in the interface between the RNC/CN-node supporting IP transport option and the Interworking Unit.

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] shall be supported as connection control~~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.

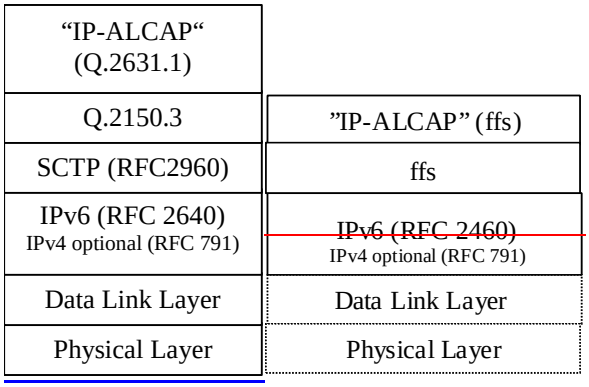

Figure 2a. Signalling bearer for IP-ALCAP.

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 Control 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 supported for establishing IP connections between the UTRAN node supporting IP option and the Transport Network Layer Interworking Unit.

Destination Endpoint Address parameter of Q.2631.1 [31] shall be based on embedded E.164 or other AESA variants of the NSAP addressing format [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 [38].

5.3.3.2.3 SCTP (RFC 2960)

SCTP as defined in ref. [36] shall be used. The checksum method specified in ref. [37] shall be used instead of the method specified in ref. [36].

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.

6 Packet switched domain

6.1 Transport network user plane

6.1.1 General

There are two options for the transport layer for data streams over Iu-PS:

1) ATM based Transport (ATM transport option)
2) IP based Transport (IP transport option)

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CHANGE REQUEST

⌘ **25.420** **CR** **033** ⌘ **rev** **2** ⌘ 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:	⌘	RAN3
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	16/02/04
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)*
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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. Rev1 of 25.420CR32: Clarified that the presence of Q.2631.1, Q.2150.3 and SCTP in the Transport Network Control Plane are depending on the interworking alternative selected 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 for the functionality of IP/ATM-Interworking references and procedural text was missing. This CR has an impact under functional and protocol point of view. The impact can be considered isolated because the change affects one system function namely 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	⌘	**X**		Other core specifications	⌘	CR077 25.401 Rel-5 CR078 25.401 Rel-6 CR045 25.410 Rel-5 CR046 25.410 Rel-6 CR072 25.414 Rel-5 CR073 25.414 Rel-6 CR034 25.420 Rel-6 CR033 25.426 Rel-5 CR034 25.426 Rel-6 CR043 25.430 Rel-5 CR044 25.430 Rel-6
affected:			**X**	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR was formerly submitted as 25.420CR32 in R3-040169 and as 25.420CR33 in R3-040218 and as 25.420CR33 rev1 in R3-040351				

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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.

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".

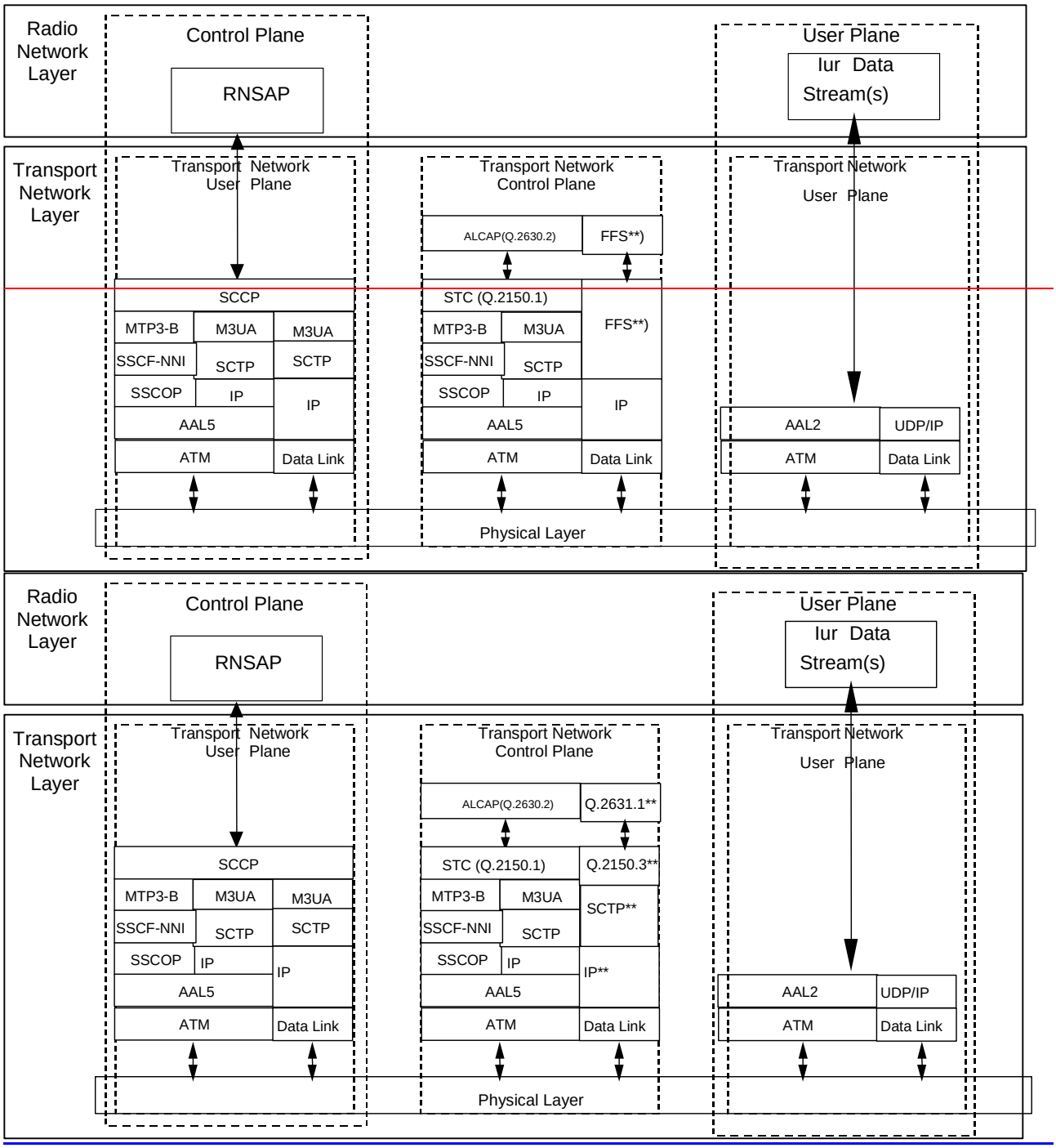
[18] ITU-T Recommendation Q.2631.1 (10/2003): “IP Connection Control Signalling Protocol - Capability Set 1”

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

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CHANGE REQUEST

⌘ **25.420** **CR** **034** ⌘ **rev** **2** ⌘ Current version: **6.0.0** ⌘

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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:	⌘	RAN3
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	16/02/04
Category:	⌘	**A**
Release:	⌘	Rel-6

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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 with the previous version of the specification (same release) because for the functionality of IP/ATM-Interworking references and procedural text was missing. This CR has an impact under functional and protocol point of view. The impact can be considered isolated because the change affects one system function namely 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				
Other specs	⌘	**Y** X	**N**	Other core specifications	⌘	CR077 25.401 Rel-5 CR078 25.401 Rel-6 CR045 25.410 Rel-5

			CR046 25.410 Rel-6 CR072 25.414 Rel-5 CR073 25.414 Rel-6 CR033 25.420 Rel-5 CR033 25.426 Rel-5 CR034 25.426 Rel-6 CR043 25.430 Rel-5 CR044 25.430 Rel-6
affected:		**X**	Test specifications
		X	O&M Specifications

Other comments: ⌘ This CR was formerly submitted as 25.420CR34 rev1 in R3-040352

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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.
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[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”

3 Definitions and abbreviations

3.1 Definitions

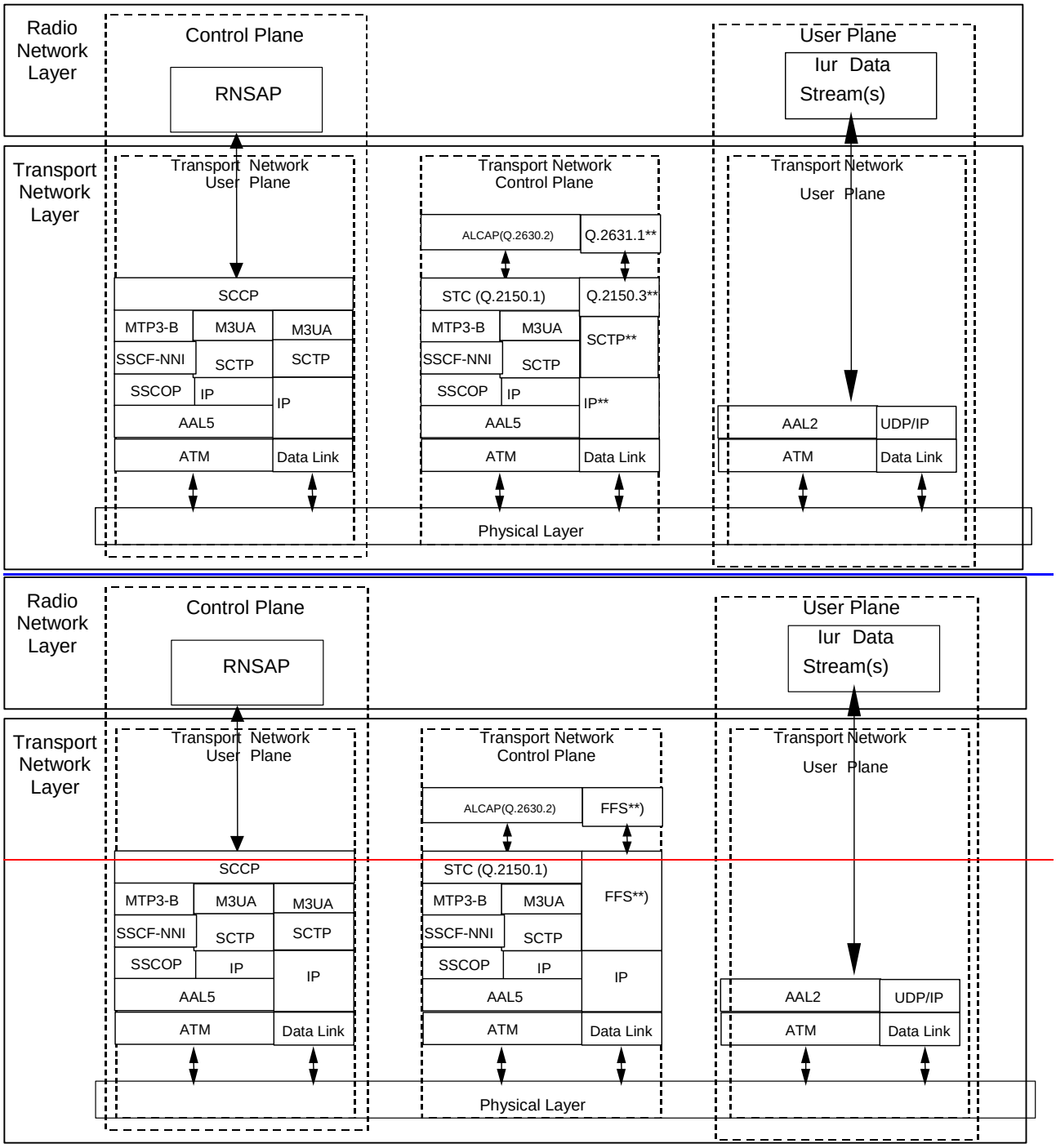
None

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

9 Other I_{ur} Interface Specifications

9.1 UTRAN Iur Interface: Layer 1 (TS 25.421)

3GPP TS 25.421 specifies the range of physical layer technologies that may be used to support the Iur interface and the Iur-g interface.

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Malaga, Spain, 16th – 20th February 2004

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CHANGE REQUEST

⌘ **25.426** **CR** **033** ⌘ **rev** **2** ⌘ 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:	⌘	RAN3
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	16/02/04
Category:	⌘	**F**
Release:	⌘	Rel-5

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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. Rev1 of 25.426CR32: - Removed the reference to Q.2632.1 and the corresponding description of the interworking functionality - replaced the “ALCAP” by “connection control protocol” - Updated the reference numbers accordingly 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 for the functionality of IP/ATM-Interworking references and procedural text was missing. This CR has an impact under functional and protocol point of view. The impact can be considered isolated because the change affects one system function namely 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	⌘	**X**		Other core specifications	⌘ CR077 25.401 Rel-5 CR078 25.401 Rel-6 CR045 25.410 Rel-5 CR046 25.410 Rel-6 CR072 25.414 Rel-5 CR073 25.414 Rel-6 CR033 25.420 Rel-5 CR034 25.420 Rel-6 CR034 25.426 Rel-6 CR043 25.430 Rel-5 CR044 25.430 Rel-6
affected:			**X**	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR was formerly submitted as 25.426CR32 in R3-040170 and as 25.426CR33 in R3-040220 and as 25.426CR33 rev1 in R3-040353			

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2 References

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- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
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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] IETF RFC 3309 (September 2002): "SCTP Checksum Change".

[38] ITU-T Recommendation Q.2150.3 (12/2002): " 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
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 supported for establishing IP connections between the UTRAN node supporting IP option and the Transport Network Layer Interworking Unit.~~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 connection control protocol 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 connection control protocol 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 connection control protocol 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.

Destination Endpoint Address parameter of Q.2631.1 [35] shall be 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 [38] over SCTP [18] over IP.

The checksum method specified in ref. [37] shall be used instead of the method specified in ref. [18].

The UTRAN node supporting the IP option shall consider interworking with Q.2630.1 [5] and Q.2630.2 [22] as described within chapter 6.2, i.e. no values higher than 2048Kbit/s shall be signalled from the UTRAN node supporting the IP option and a value of 2048Kbit/s shall be interpreted as 2048Kbit/s or higher.

3GPP TSG-RAN WG3 Meeting #41 **R3-040495**
Malaga, Spain, 16th – 20th February 2004

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CHANGE REQUEST

⌘ **25.426** **CR** **034** ⌘ **rev** **2** ⌘ Current version: **6.0.0** ⌘

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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:	⌘	RAN3
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	16/02/04
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 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 with the previous version of the specification (same release) because for the functionality of IP/ATM-Interworking references and procedural text was missing. This CR has an impact under functional and protocol point of view. The impact can be considered isolated because the change affects one system function namely 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				
Other specs	⌘	Y: X / N:	Other core specifications	⌘	CR077 25.401 Rel-5 CR078 25.401 Rel-6 CR045 25.410 Rel-5	

				CR046 25.410 Rel-6 CR072 25.414 Rel-5 CR073 25.414 Rel-6 CR033 25.420 Rel-5 CR034 25.420 Rel-6 CR033 25.426 Rel-5 CR043 25.430 Rel-5 CR044 25.430 Rel-6
affected:		**X**	Test specifications	
		X	O&M Specifications	
Other comments:	⌘	This CR was formerly submitted as 25.426CR34 rev1 in R3-040354		

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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.
- 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 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] IETF RFC 3309 (September 2002): "SCTP Checksum Change".

[38] ITU-T Recommendation Q.2150.3 (12/2002): " 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

9 Interworking between ATM and IP Transport Options

9.1 Introduction

This clause specifies the interworking between IP and ATM transport options. A UTRAN node supporting IP transport option shall provide interworking to a UTRAN node supporting only ATM transport option.

9.2 Interworking Alternatives

For interworking with a UTRAN node supporting only ATM option, the UTRAN node supporting IP option shall additionally support at least one of the following interworking mechanisms:

1) ATM&IP dual stack. An ALCAP protocol is not required in this interworking solution

2) Interworking Function (IWF) as a logical part of the UTRAN node supporting IP option. AAL2 signalling protocol Capability Set 2 [22] shall be supported as ALCAP protocol between the Interworking Function and the UTRAN node supporting ATM transport option.

3) Interworking Unit (IWU) as a logically separate unit. An IP-ALCAP protocol shall be used in the interface between the UTRAN node supporting IP option and the Interworking Unit.

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 supported for establishing IP connections between the UTRAN node supporting IP option and the Transport Network Layer Interworking Unit.~~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 connection control protocol 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 connection control protocol 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 connection control protocol 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.

Destination Endpoint Address parameter of Q.2631.1 [35] shall be 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 [38] over SCTP [18] over IP.

The checksum method specified in ref. [37] shall be used instead of the method specified in ref. [18].

The UTRAN node supporting the IP option shall consider interworking with Q.2630.1 [5] and Q.2630.2 [22] as described within chapter 6.2, i.e. no values higher than 2048Kbit/s shall be signalled from the UTRAN node supporting the IP option and a value of 2048Kbit/s shall be interpreted as 2048Kbit/s or higher.

3GPP TSG-RAN WG3 Meeting #41 **R3-040496**
Malaga, Spain, 16th – 20th February 2004

CR-Form-v7

CHANGE REQUEST

⌘ **25.430** **CR** **043** ⌘ **rev** **2** ⌘ 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:	⌘	RAN3			
Work item code:	⌘	ETRAN-IPtrans	***Date:*** ⌘	16/02/04	
Category:	⌘	**F**	***Release:*** ⌘	Rel-5	
		Use one of the following categories:		*Use one of the following releases:*	
		F *(correction)*		*2*	*(GSM Phase 2)*
		A *(corresponds to a correction in an earlier release)*		*R96*	*(Release 1996)*
		B *(addition of feature),*		*R97*	*(Release 1997)*
		C *(functional modification of feature)*		*R98*	*(Release 1998)*
		D *(editorial modification)*		*R99*	*(Release 1999)*
		Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*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. Rev1 of 25.430CR39: Clarified that the presence of Q.2631.1, Q.2150.3 and SCTP in the Transport Network Control Plane are depending on the interworking alternative selected 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 for the functionality of IP/ATM-Interworking references and procedural text was missing. This CR has an impact under functional and protocol point of view. The impact can be considered isolated because the change affects one system function namely 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	⌘	**X**		Other core specifications	⌘	CR077 25.401 Rel-5 CR078 25.401 Rel-6 CR045 25.410 Rel-5 CR046 25.410 Rel-6 CR072 25.414 Rel-5 CR073 25.414 Rel-6 CR033 25.420 Rel-5 CR034 25.420 Rel-6 CR033 25.426 Rel-5 CR034 25.426 Rel-6 CR044 25.430 Rel-6
affected:			**X**	Test specifications		
			X	O&M Specifications		
Other comments:	⌘	This CR was formerly submitted as 25.430CR39 in R3-040171 and as 25.430CR43 in R3-040222 and as 25.430CR43 rev1 in R3-040355				

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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

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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 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".

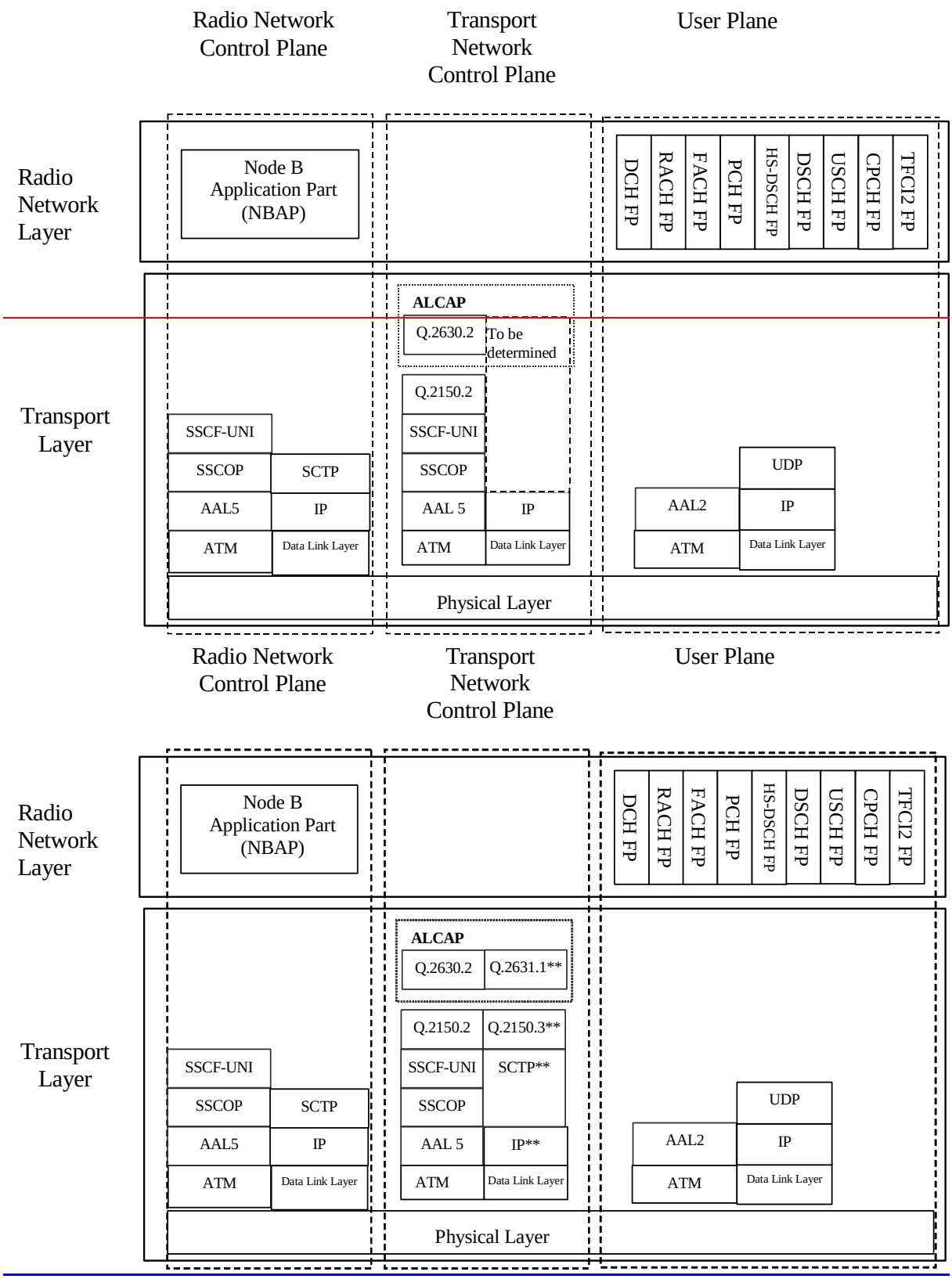
[12] 3GPP TS 25.402: "Synchronization in UTRAN, Stage 2".

[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”

[15] 3GPP TS 25.414: "UTRAN Iu Interface Data Transport and Transport Signalling"

7 Iub Interface Protocol Structure



**) depends on the interworking alternative selected (see [15])

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 [14] may~~ In the third interworking alternative (see [15]), ITU-T recommendation Q.2631.1 [14] shall 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].

3GPP TSG-RAN WG3 Meeting #41 **R3-040497**
Malaga, Spain, 16th – 20th February 2004

CR-Form-v7

CHANGE REQUEST

⌘ **25.430** **CR** **044** ⌘ **rev** **2** ⌘ Current version: **6.0.0** ⌘

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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:	⌘	RAN3
Work item code:	⌘	ETRAN-IPtrans
Date:	⌘	16/02/04
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)*
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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 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 with the previous version of the specification (same release) because for the functionality of IP/ATM-Interworking references and procedural text was missing. This CR has an impact under functional and protocol point of view. The impact can be considered isolated because the change affects one system function namely 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				
Other specs	⌘	**Y** X	**N**	Other core specifications	⌘	CR077 25.401 Rel-5 CR078 25.401 Rel-6 CR045 25.410 Rel-5

				CR046 25.410 Rel-6 CR072 25.414 Rel-5 CR073 25.414 Rel-6 CR033 25.420 Rel-5 CR034 25.420 Rel-6 CR033 25.426 Rel-5 CR034 25.426 Rel-6 CR043 25.430 Rel-5
affected:		**X**	Test specifications	
		X	O&M Specifications	

Other comments: ⌘ This CR was formerly submitted as 25.430CR44 rev1 in R3-040356

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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.

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2 References

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[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”

[15] 3GPP TS 25.414: "UTRAN Iu Interface Data Transport and Transport Signalling"

3 Definitions and abbreviations

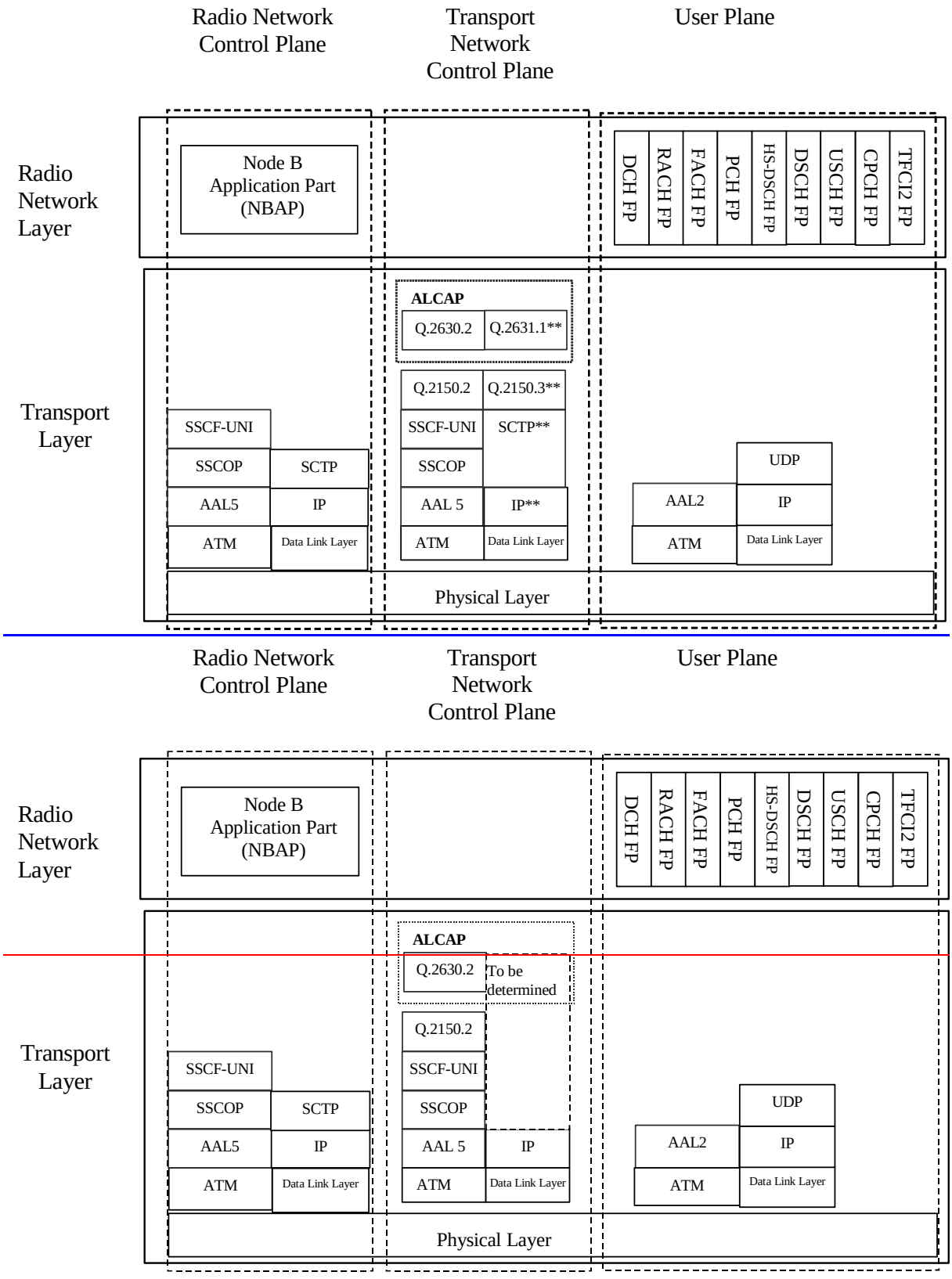
3.1 Definitions

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

Propagation delay (PD): it is the round trip propagation delay of the radio signal from the Node B to the UE and back to the BS in one chip resolution.

Timing Advance (TA): it is the amount of time, expressed in number of chips, by which the transmission of an uplink burst is anticipated by the UE in order to be received by the cell inside the corresponding time slot.

7 Iub Interface Protocol Structure



**) depends on the interworking alternative selected (see [15])

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].

In the third interworking alternative (see [15]), ITU-T recommendation Q.2631.1 [14] shall ~~An IP ALCAP protocol 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].

8 Other Iub Interface Specifications

8.1 UTRAN Iub Interface: Layer 1 (TSG RAN 25.431)

This document [5] specifies the standards allowed for the implement of Layer 1 (physical layer) on the I_{ub} interface.

8.2 UTRAN Iub Interface: Signalling Transport (TSG RAN 25.432)

This document [6] specifies the signalling transport related to NBAP signalling to be used across the Iub Interface.

8.3 NBAP Specification (TSG RAN 25.433)

This document [7] specifies the standards for NBAP specification to be used over Iub Interface.

8.4 UTRAN Iub Interface: Data Transport & Transport Signalling for Common Transport Channel Data Streams (TSG RAN 25.434)

This document [8] provides a specification of the UTRAN RNC-Node B (Iub) interface Data Transport and Transport Signalling for Common Transport Channel data streams.

8.5 UTRAN Iub Interface: User Plane Protocols for Common Transport Channel Data Streams (TSG RAN 25.435

This document [9] provides a specification of the UTRAN RNC-Node B (Iub) interface user plane protocols for Common Transport Channel data streams.

8.6 UTRAN Iur/Iub Interface: Data Transport & Transport Signalling for DCH Data Streams (TSG RAN 25.426)

This Technical Specification [10] specifies the transport bearers for the DCH data streams on UTRAN Iur and Iub interfaces. The corresponding Transport Network Control plane is also specified.