TSG-RAN Meeting #11
Palm Springs, CA, U.S.A., 13-16 March 2001

RP-010162

Title: **Agreed CRs to WI "ETRAN-QoSAAL2"**

Source: **TSG-RAN WG3**

Agenda item: **5.3.3**

Tdoc_Num	Specification	CR_Num	Revision_Num	CR_Subject	CR_Category	WG_Status	Cur_Ver_Num	New_Ver_Num	Workitem
R3-010662	25.931	007	1	Introduction of Q.2630.2	B	agreed	3.2.0	4.0.0	ETRAN-QoSAAL2
R3-010661	25.434	008	1	Introduction of Path Type capability of Q.2630.2 and I.363.2 (11/2000)	B	agreed	3.4.0	4.0.0	ETRAN-QoSAAL2
R3-010657	25.424	010	1	Introduction of Path Type capability of Q.2630.2 and I.363.2 (11/2000)	B	agreed	3.5.0	4.0.0	ETRAN-QoSAAL2
R3-010656	25.420	011	1	Introduction of Q.2630.2	B	agreed	3.2.0	4.0.0	ETRAN-QoSAAL2
R3-010659	25.426	013	1	Introduction of Path Type capability of Q.2630.2 and I.363.2 (11/2000)	B	agreed	3.5.0	4.0.0	ETRAN-QoSAAL2
R3-010660	25.430	017	1	Introduction of Q.2630.2	B	agreed	3.4.0	4.0.0	ETRAN-QoSAAL2
R3-010658	25.425	025	1	Introduction of I.363.2 (11/2000)	B	agreed	3.3.0	4.0.0	ETRAN-QoSAAL2
R3-010654	25.414	026	1	Introduction of I.363.2 (11/2000)	B	agreed	3.6.0	4.0.0	ETRAN-QoSAAL2
R3-010655	25.415	051	1	Introduction of I.363.2 (11/2000)	B	agreed	3.5.0	4.0.0	ETRAN-QoSAAL2

3GPP TSG-RAN WG3 Meeting #19 ***R3-010654***
Cardiff, UK, 26th February – 2nd March 2001

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CHANGE REQUEST

⌘ **25.414** **CR** **26** ⌘ rev **1** ⌘ Current version: **3.6.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network **X**

Title:	⌘	Introduction of I.363.2 (11/2000)
Source:	⌘	R-WG3
Work item code:	⌘	ETRAN-QoSAAL2
Date:	⌘	February 2001
Category:	⌘	**B**
Release:	⌘	REL-4

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	Reflection of Rel4 WI TR 25.934 “QoS optimization for AAL type 2 connections over Iub and Iur interfaces”.
Summary of change:	⌘	In 2, I.363.2 (9/1997) is replaced by I.363.2 (11/2000)
Consequences if not approved:	⌘	Backward compatibility: This CR is backward compatible with the previous version. See TR 25.934 for details.

Clauses affected:	⌘	2
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

1 Scope

The present document specifies the standards for user data transport protocols and related signalling protocols to establish user plane transport bearers over the UTRAN Iu interface.

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.

[1] ITU-T Recommendation I.361 (2/1999): "B-ISDN ATM Layer Specification".

[2] ITU-T Recommendation I.363.2 (~~9/1997~~11/2000): "B-ISDN ATM Adaptation Layer Type 2 Specification".

[3] ITU-T Recommendation I.363.5 (8/1996): "B-ISDN ATM Adaptation Layer Type 5 Specification".

[4] ITU-T Recommendation I.366.1 (6/1998): "Segmentation and Reassembly Service Specific Convergence Sublayer for the AAL Type 2".

[5] ITU-T Recommendation E.164 (5/1997): "Numbering Plan for the ISDN Era".

[6] ITU-T Recommendation Q.2110 (7/1994): "B-ISDN ATM Adaptation Layer-Service Specific Connection Oriented Protocol (SSCOP)".

[7] ITU-T Recommendation Q.2140 (2/1995): "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 (1999): "B-ISDN ATM Adaptation Layer-Signalling Transport Converter for the MTP3b".

[9] ITU-T Recommendation Q.2210 (7/1996): "Message Transfer Part level 3 functions and messages using the services of ITU-T Recommendation Q.2140".

[10] ITU-T Recommendation Q.2630.1 (1999): "AAL type 2 Signalling Protocol (Capability Set 1)".

[11] ITU-T Recommendation X.213 (8/1997): "Information Technology-Open Systems Interconnection-Network Service Definitions".

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

[13] IETF RFC 791 (9/1981): "Internet Protocol".

[14] IETF RFC 2684 (9/1999): "Multiprotocol Encapsulation over ATM Adaptation Layer 5".

[15] IETF RFC 2225 (4/1998): "Classical IP and ARP over ATM".

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

[17] 3GPP TS 29.060: "3GPP; TSG CN; GPRS; GPRS Tunnelling Protocol (GTP)".

[18] IETF RFC 793 (9/1981): "TCP, Transmission Control Protocol".

[19] IETF RFC 2475 (12/1998): "An Architecture for Differentiated Services".

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

3GPP TSG-RAN WG3 Meeting #19 **R3-010655**
Cardiff, UK, 26th February – 2nd March 2001

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CHANGE REQUEST

⌘ **25.415** **CR** **51** ⌘ rev **1** ⌘ Current version: **3.5.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network **X**

Title:	⌘	Introduction of I.363.2 (11/2000)
Source:	⌘	R-WG3
Work item code:	⌘	ETRAN-QoSAAL2
Date:	⌘	February 2001
Category:	⌘	**B**
Release:	⌘	REL-4

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change:	⌘	Reflection of Rel4 WI TR 25.934 “QoS optimization for AAL type 2 connections over Iub and Iur interfaces”.
Summary of change:	⌘	In 2, I.363.2 (9/1997) is replaced by I.363.2 (11/2000).
Consequences if not approved:	⌘	

Clauses affected:	⌘	2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

1 Scope

The present document defines the Radio Network Layer user plane protocol being used over the Iu interface.

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.

[1] 3GPP TS 25.401: "3rd Generation Partnership Project (3GPP) Technical Specification Group (TSG) RAN; UTRAN Overall Description".

[2] 3GPP TS 25.410: "3rd Generation Partnership Project (3GPP) Technical Specification Group (TSG) RAN; UTRAN Iu interface: general Aspects and Principles".

[3] 3GPP TS 25.413: "3rd Generation Partnership Project (3GPP) Technical Specification Group (TSG) RAN; UTRAN Iu interface RANAP protocol".

[4] 3GPP TS 25.414: "3rd Generation Partnership Project (3GPP) Technical Specification Group (TSG) RAN; Iu Interface Data Transport and Transport Signalling".

[5] 3GPP TS 23.110: "3rd Generation Partnership Project (3GPP) Technical Specification Group (TSG) SSA, UMTS Access Stratum, services and functions".

[6] 3GPP TS 23.121: "3rd Generation Partnership Project (3GPP) Technical Specification Group (TSG) SSA, Architectural requirements for Release 99".

[7] ITU-T Recommendation I.363.2 (~~1997~~11/2000): "B-ISDN ATM Adaptation Layer type 2 specification".

[8] ITU-T Recommendation I.366.1 (1998): "Segmentation and reassembly service specific convergence sublayer for the AAL type 2".

[9] 3GPP TR 25.990: "3rd Generation Partnership Project (3GPP) Technical Specification Group (TSG) RAN; Vocabulary".

[10] 3GPP TS 25.321: "3rd Generation Partnership Project (3GPP) Technical Specification Group (TSG) RAN; MAC Protocol Specification".

[11] 3GPP TS 25.322, 3rd Generation Partnership Project (3GPP) Technical Specification Group (TSG) RAN; RLC Protocol Specification.

[12] 3GPP TS 26.102: "3rd Generation Partnership Project (3GPP) Technical Specification Group (TSG) SA; Mandatory speech codec; AMR speech codec; Interface to Iu and Uu".

3GPP TSG-RAN WG3 Meeting #19 ***R3-010656***
Cardiff, UK, 26th February – 2nd March 2001

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CHANGE REQUEST

⌘ **25.420** **CR** **11** ⌘ rev **1** ⌘ Current version: **3.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☒ Core Network ☐

Title:	⌘	Introduction of Q.2630.2
Source:	⌘	R-WG3
Work item code:	⌘	ETRAN-QoSAAL2
Date:	⌘	February 2001
Category:	⌘	**B**
Release:	⌘	REL-4

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B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	Reflection of Rel4 WI TR 25.934 “QoS optimization for AAL type 2 connections over Iub and Iur interfaces”.
Summary of change:	⌘	In 8, Q.2630.1 is replaced by Q.2630.2.
Consequences if not approved:	⌘	

Clauses affected:	⌘	8		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

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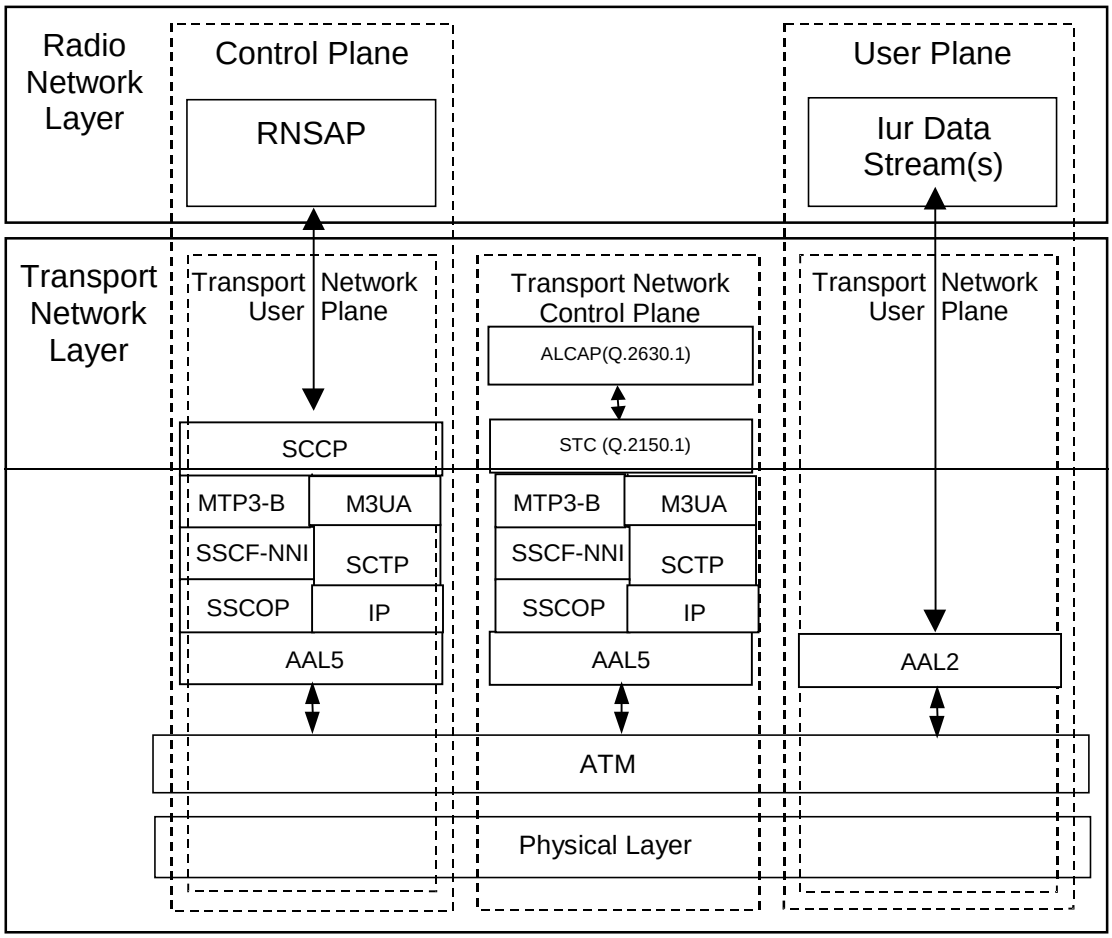
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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.


Radio Network Layer
Control Plane
RNSAP
User Plane
Iur Data Stream(s)
Transport Network Layer
Transport User Plane
Transport Network Control Plane
ALCAP(Q.2630.1)
STC (Q.2150.1)
Transport User Plane
SCCP
MTP3-B
M3UA
SSCF-NNI
SCTP
SSCOP
IP
AAL5
MTP3-B
M3UA
SSCF-NNI
SCTP
SSCOP
IP
AAL5
AAL2
ATM
Physical Layer

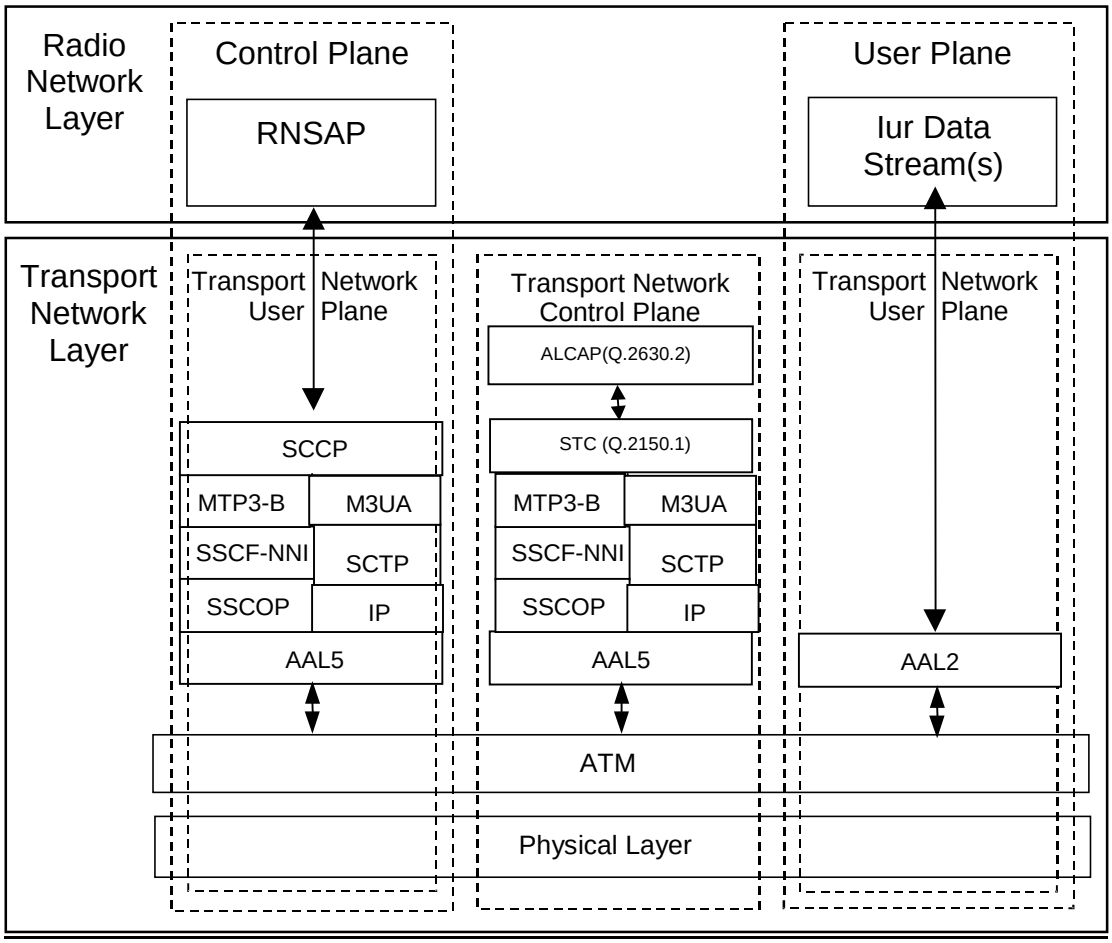


Figure 4: Iur Interface Protocol Structure

3GPP TSG-RAN WG3 Meeting #19 **R3-010657**
Cardiff, UK, 26th February – 2nd March 2001

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CHANGE REQUEST

⌘ **25.424** **CR** **10** ⌘ rev **1** ⌘ Current version: **3.5.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	Introduction of Path Type capability of Q.2630.2 and I.363.2 (11/2000)
Source:	⌘	R-WG3
Work item code:	⌘	ETRAN-QoSAAL2
Date:	⌘	February 2001
Category:	⌘	**B**
Release:	⌘	REL-4

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C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	Reflection of Rel4 WI TR 25.934 “QoS optimization for AAL type 2 connections over Iub and Iur interfaces”.
Summary of change:	⌘	1. In 2, I.363.2 (9/1997) is replaced by I.363.2 (11/2000), and Q.2630.1 is replaced by Q.2630.2. 2. In 3.2, abbreviations LC and PT are added. 3. In 6.2, Q.2630.1 is replaced by Q.2630.2, AAL2 Link Characteristics (ALC) is changed to Link Characteristics (LC), and possible usage of Path Type parameter is indicated.
Consequences if not approved:	⌘	

Clauses affected:	⌘	2, 3.2, and 6.2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
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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.

1 Scope

The present document shall provide a specification of the UTRAN RNC-RNC (Iur) interface Data Transport and Transport Signalling for Common Transport Channel data streams.

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.

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

[2] ITU-T Recommendation I.363.2 (~~9/97~~11/2000): "B-ISDN ATM Adaptation Layer type 2".

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

[4] New ITU-T Recommendation Q.2630.1 (1999): "AAL Type 2 signalling protocol (Capability Set 1)".

[5] ITU-T Recommendation E.191 (10/96): "B-ISDN numbering and addressing".

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

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

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

3 Definitions and abbreviations

3.1 Definitions

Common Transport Channels are defined as transport channels that are shared by several users i.e. RACH, CPCH [FDD], FACH and DSCH.

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
ALCAP	Access Link Control Application Part
ATM	Asynchronous Transfer Mode
CPCH	Common Packet Channel
CPS	Common Part Sublayer
DSCH	Downlink Shared Channel

FACH	Forward Access Channel
LC	Link Characteristics
MTP	Message Transfer Part
NNI	Network-Node Interface
NSAP	Network Service Access Point
PT	Path Type
RACH	Random Access Channel
SAAL	Signalling ATM Adaptation Layer
SSCOP	Service Specific Connection Oriented Protocol
SSCF	Service Specific Co-ordination Function
SSCS	Service Specific Convergence Sublayer
SSSAR	Service Specific Segmentation and Re-assembly sublayer
STC	Signalling Transport Converter
UNI	User-Network Interface
USCH	Uplink Shared Channel

6.2 Transport Signalling

AAL2 signalling protocol Capability Set ~~1~~2, ITU-T Recommendation Q.2630.~~1~~ 2 [~~4~~xx], is the signalling protocol to control the AAL2 connections on Iur interfaces. Q.2630.2 [xx] adds new optional capabilities to Q.2630.1 [4].

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

Binding ID provided by the radio network layer shall be copied in SUGR parameter of ESTABLISH.request primitive of [~~4~~xx].

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

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

3GPP TSG-RAN WG3 Meeting #19 **R3-010658**
Cardiff, UK, 26th February – 2nd March 2001

CR-Form-v3

CHANGE REQUEST

⌘ **25.425** **CR** **25** ⌘ rev **1** ⌘ Current version: **3.3.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	Introduction of I.363.2 (11/2000)
Source:	⌘	R-WG3
Work item code:	⌘	ETRAN-QoSAAL2
Date:	⌘	February 2001
Category:	⌘	**B**
Release:	⌘	REL-4

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change:	⌘	Reflection of Rel4 WI TR 25.934 “QoS optimization for AAL type 2 connections over Iub and Iur interfaces”.
Summary of change:	⌘	In 2, I.363.2 (9/1997) is replaced by I.363.2 (11/2000).
Consequences if not approved:	⌘	

Clauses affected:	⌘	2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

How to create CRs using this form:
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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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

1 Scope

The present document shall provide a description of the UTRAN RNS-RNS (Iur) interface user plane protocols for Common Transport Channel data streams as agreed within the TSG-RAN working group 3.

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.

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

[2] ITU-T Recommendation I.363.2 (~~9/97~~11/2000): "B-ISDN ATM Adaptation Layer type 2".

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

[4] 3G TS 25.427: "Iub/Iur User Plane Protocols for DCH Data Streams".

[5] 3G TS 25.401: "UTRAN overall description".

[6] 3G TS 25.990: "UTRAN vocabulary".

3 Definitions, symbols and abbreviations

3.1 Definitions

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

Common Transport Channel: it is defined as a transport channel that is shared by several users i.e. DSCH, USCH [TDD], CPCH [FDD], RACH, FACH.

Transport Connection: service provided by the transport layer and used by Frame Protocol for the delivery of FP PDU.

For other definitions, please refer to [5].

3.2 Symbols

No special symbols are defined in the present document.

3GPP TSG-RAN WG3 Meeting #19 **R3-010659**
Cardiff, UK, 26th February – 2nd March 2001

CR-Form-v3

CHANGE REQUEST

⌘ **25.426** **CR** **13** ⌘ rev **1** ⌘ Current version: **3.5.0** ⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	Introduction of Path Type capability of Q.2630.2 and I.363.2 (11/2000)
Source:	⌘	R-WG3
Work item code:	⌘	ETRAN-QoSAAL2
Date:	⌘	February 2001
Category:	⌘	**B**
Release:	⌘	REL-4

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F *(essential correction)*
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2 *(GSM Phase 2)*
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R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change:	⌘	Reflection of Rel4 WI TR 25.934 “QoS optimization for AAL type 2 connections over Iub and Iur interfaces”.
Summary of change:	⌘	1. In 2, I.363.2 (9/1997) is replaced by I.363.2 (11/2000), and Q.2630.1 is replaced by Q.2630.2. 2. In 3.2, abbreviations LC and PT are added. 3. In 6.1, Q.2630.1 is replaced by Q.2630.2, AAL2 Link Characteristics (ALC) is changed to Link Characteristics (LC), and possible usage of Path Type parameter is indicated. 4. In 7.2, Q.2630.1 is replaced by Q.2630.2. 5. In 8.2, Q.2630.1 is replaced by Q.2630.2.
Consequences if not approved:	⌘	

Clauses affected:	⌘	2, 3.2, 6.1, 7.2, and 8.2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
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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.

[1] TS UMTS 25.427: "UTRAN Iur and Iub User plane Protocol for DCH Data Streams".

[2] ITU-T Recommendation I.361 (1995): "B-ISDN ATM Layer Specification".

[3] ITU-T Recommendation I.363.2 (~~1997~~11/2000): "B-ISDN ATM Adaptation Layer type 2".

[4] ITU-T Recommendation I.366.1 (1998): "Segmentation and Reassembly Service Specific Convergence Sublayer for the AAL type 2".

[5] (Void)

Note: this reference will be to ITU-T Recommendation Q.2630.1 (1999): "AAL Type 2 signalling protocol (Capability Set 1)" when this becomes available.

[6] ITU-T Recommendation E.191 (1996): "B-ISDN numbering and addressing".

[7] ITU-T Recommendation X.213 (1995): "Information Technology - Open Systems Interconnection - Network Service Definition".

[8] ITU-T Recommendation Q.2110 (1994): "B-ISDN ATM Adaptation layer - Service Specific Connection Oriented Protocol (SSCOP".

[9] ITU-T Recommendation Q.2130 (1994): "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: "AAL type 2 signalling transport converter on SSCOP”.

[11] ITU-T Recommendation Q.2210 (1996): Message transfer part level 3 functions and messages using the services of the ITU-T Recommendation Q.2140".

[12] ITU-T Recommendation Q.2140 (1995): "B-ISDN Signalling ATM Adaptation Layer - Service Specific Coordination Function for Support of Signalling at the Network Node Interface (SSCF at NNI)".

[13] New ITU-T Recommendation Q.2150.1 (1999): "AAL Type 2 Signalling Transport Converter on MTP-3B".

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

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

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

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

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

[19] G. Sidebottom et al, "SS7 MTP3 - User Adaptation Layer", draft-ietf-sigtran-m3ua-04.txt (Work In Progress), IETF, September 2000.

[20] ITU-T Recommendation I.630 (1999): "ATM Protection Switching".

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

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

3 Definitions and abbreviations

3.1 Definitions

ALCAP is a generic name for the 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
LC	Link Characteristics
M3UA	SS7 MTP3 User Adaptation Layer
MTP	Message Transfer Part
NNI	Network-Node Interface
NSAP	Network Service Access Point
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
UNI	User-Network Interface

6.1 ALCAP

AAL2 signalling protocol Capability Set ~~1~~ 2 [~~5~~xx] is the signalling protocol to control AAL2 connections on Iub and Iur interfaces. Q.2630.2 [xx] adds new optional capabilities to Q.2630.1 [5].

Binding ID provided by the radio network layer shall be copied in SUGR parameter of ESTABLISH.request primitive of [~~5~~xx].

User Plane Transport bearers for Iur interface are established and released by the ALCAP in the Serving RNC. The binding identity shall already be assigned and tied to a radio application procedure when the first ALCAP message is received over the Iur interface in the Drift RNC.

User Plane Transport bearers for Iub interface are established and released by the ALCAP in the Controlling RNC.

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

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

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

7.2 Signalling Bearer

SAAL-UNI [8, 9] is used as a signalling bearer for the AAL Type 2 Signalling protocol on Iub interface. Signalling Transport Converter for SSCOP is applied [9]. The following figure shows the signalling bearer protocol stack for the ALCAP on Iub interface.

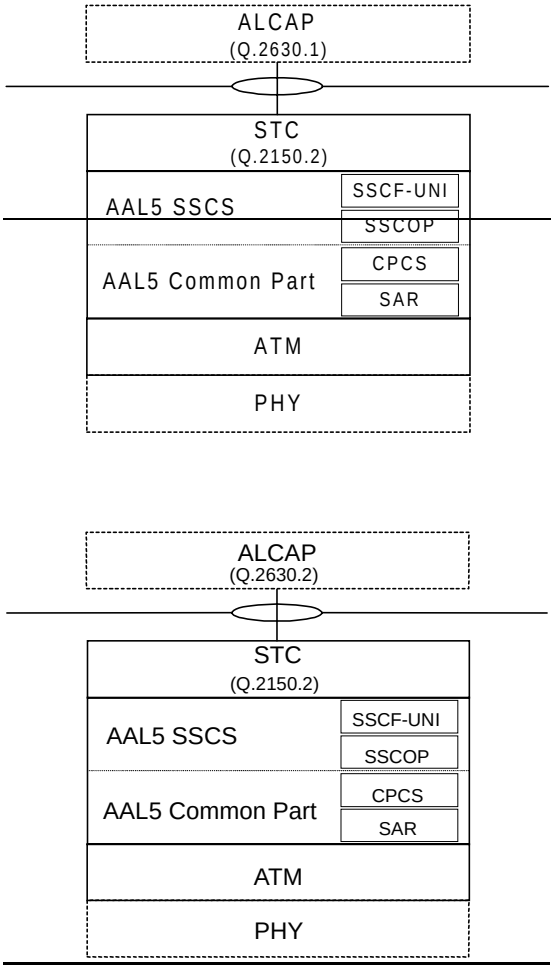
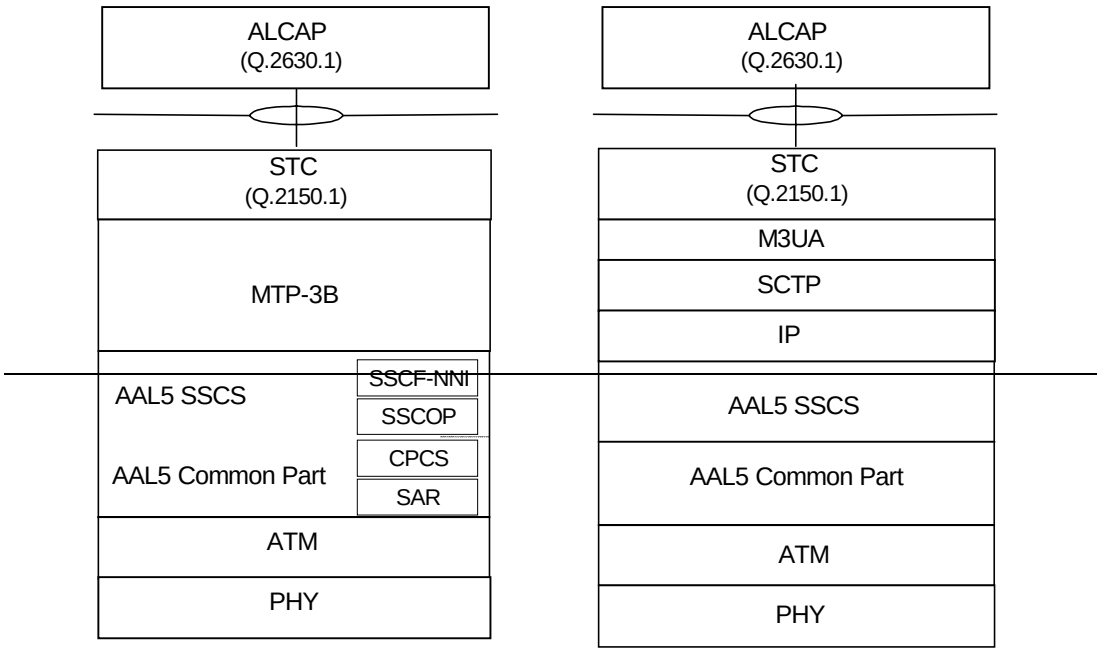


Figure 2: Signalling bearer for ALCAP on Iub interface

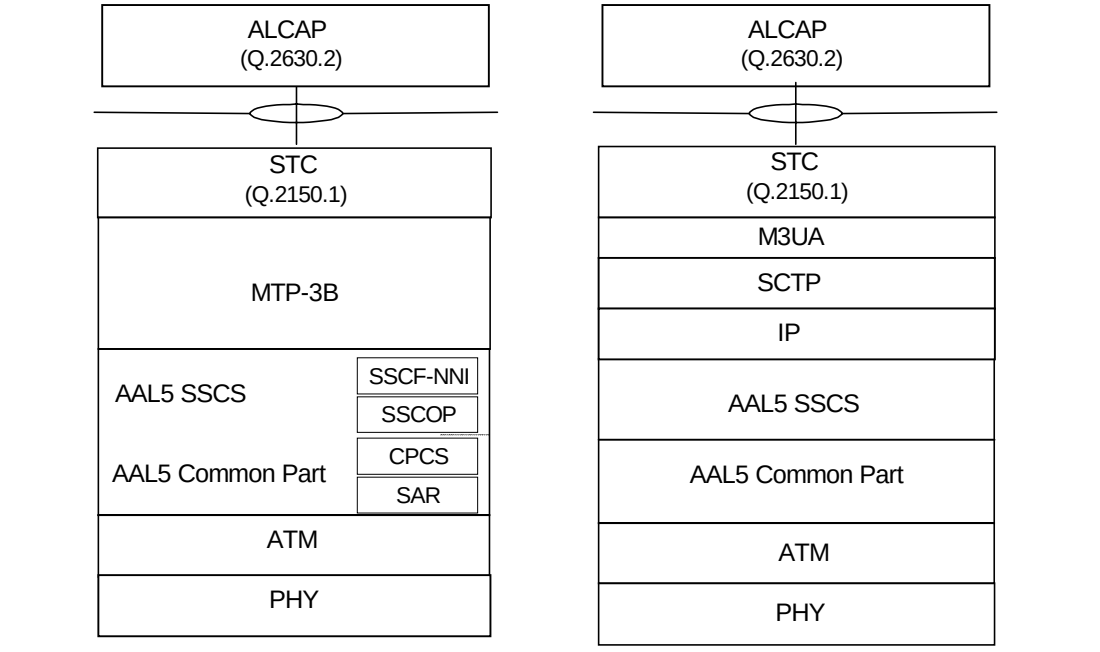
8.2 Signalling Bearer

There are two protocol stacks specified for Iur ALCAP Signalling Bearer - one based on MTP-3B [11, 21] and SAAL-NNI [12, 8] and the other based on SCTP [18]. Signalling Transport Converter for MTP-3B is applied [13]. MTP-3 User Adaptation Layer (M3UA) for SCTP is applied [19]. The following figure shows the signalling bearer protocol stacks for the ALCAP on Iur interface.



MTP-3B based Iur ALCAP Signaling Bearer

IP based Iur ALCAP Signaling Bearer



MTP-3B based Iur ALCAP Signaling Bearer

IP based Iur ALCAP Signaling Bearer

Figure 3: Signalling bearers for ALCAP on Iur interface

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CHANGE REQUEST

⌘ **25.430** **CR** **17** ⌘ rev **1** ⌘ Current version: **3.4.0** ⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	Introduction of Q.2630.2
Source:	⌘	R-WG3
Work item code:	⌘	ETRAN-QoSAAL2
Date:	⌘	February 2001
Category:	⌘	**B**
Release:	⌘	REL-4

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Reason for change:	⌘	Reflection of Rel4 WI TR 25.934 “QoS optimization for AAL type 2 connections over Iub and Iur interfaces”.
Summary of change:	⌘	In 7, Q.2630.1 is replaced by Q.2630.2.
Consequences if not approved:	⌘	

Clauses affected:	⌘	7		
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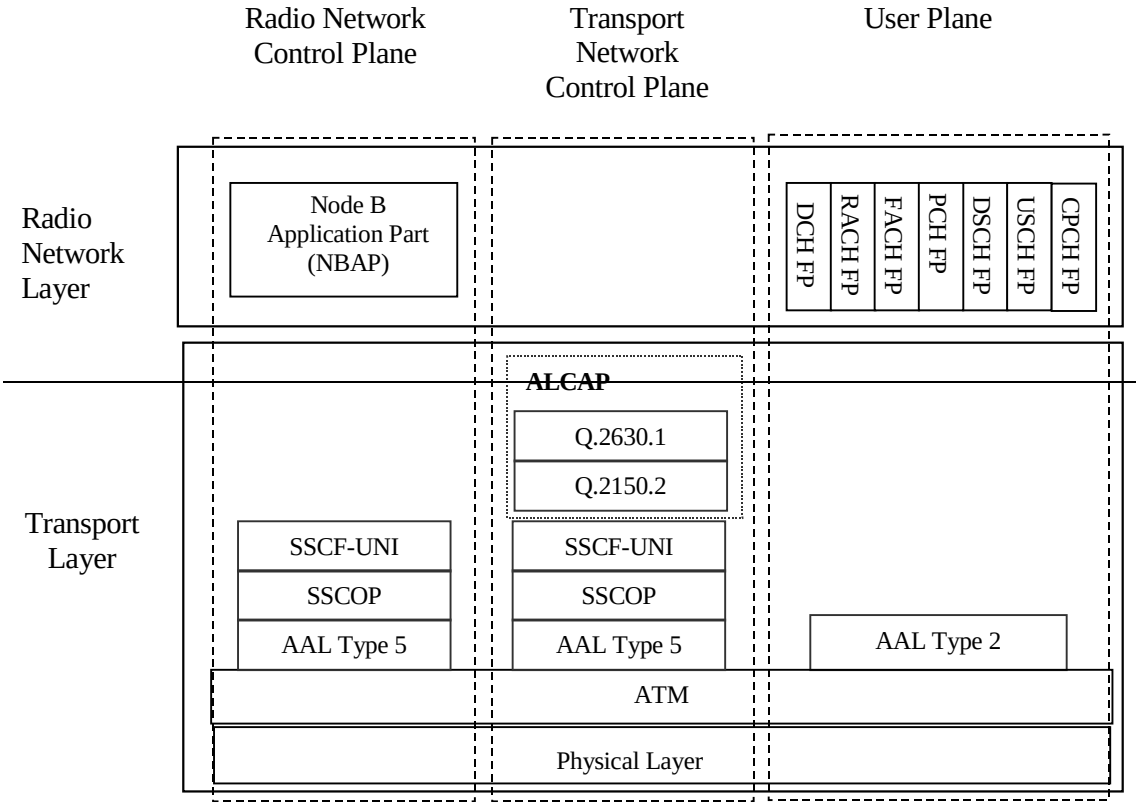
7 Iub Interface Protocol Structure



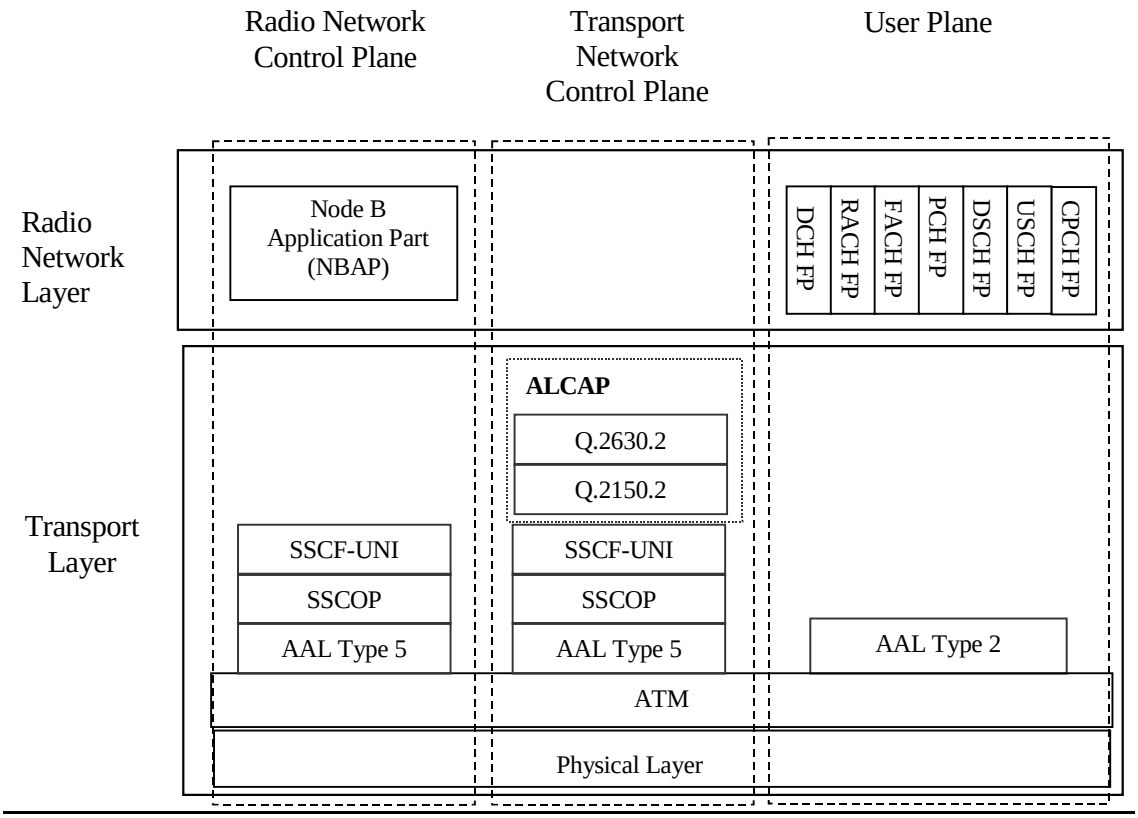


Figure 7: Iub Interface Protocol Structure.

The Iub interface protocol architecture consists of two functional layers:

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

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

There shall be one dedicated AAL2 connection for each RACH, one for each FACH transport channel, and one for each CPCH [FDD].

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Cardiff, UK, 26th February – 2nd March 2001

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CHANGE REQUEST

⌘ **25.434** **CR** **8** ⌘ rev **1** ⌘ Current version: **3.4.0** ⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network **X** Core Network ☐

Title:	⌘	Introduction of Path Type capability of Q.2630.2 and I.363.2 (11/2000)
Source:	⌘	R-WG3
Work item code:	⌘	ETRAN-QoSAAL2
Date:	⌘	February 2001
Category:	⌘	**B**
Release:	⌘	REL-4

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

Reason for change:	⌘	Reflection of Rel4 WI TR 25.934 “QoS optimization for AAL type 2 connections over Iub and Iur interfaces”.
Summary of change:	⌘	1. In 2, I.363.2 (9/1997) is replaced by I.363.2 (11/2000), and Q.2630.1 is replaced by Q.2630.2. 2. In 3.3, abbreviations LC and PT are added. 3. In 6.2, Q.2630.1 is replaced by Q.2630.2, AAL2 Link Characteristics (ALC) is changed to Link Characteristics (LC), and possible usage of Path Type parameter is indicated. 4. In 7.2, Q.2630.1 is replaced by Q.2630.2.
Consequences if not approved:	⌘	

Clauses affected:	⌘	2, 3.3, 6.2, and 7.2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
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1 Scope

The present document shall provide a specification of the UTRAN RNC-Node B (Iub) interface Data Transport and Transport Signalling for Common Transport Channel data streams.

2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
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[1] ITU-T Recommendation I.363.2 (~~1997~~11/2000): "B-ISDN ATM Adaptation Layer type 2".

[2] ITU-T Recommendation I.366.1 (1998): "Segmentation and Reassembly Service Specific Convergence Sublayer for the AAL type 2".

[3] (Void)

Note: The above reference will be to ITU-T Recommendation Q.2630.1 (1999): "AAL Type 2 signalling protocol (Capability Set 1)" when available.

[4] ITU-T Recommendation Q.2110 (1994): "B-ISDN ATM Adaptation layer – Service Specific Connection Oriented Protocol (SSCOP)".

[5] ITU-T Recommendation Q.2130 (1994): "B-ISDN Signalling ATM Adaptation Layer – Service Specific Coordination Function for Support of Signalling at the User Network Interface (SSCF at UNI)".

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

[7] ITU-T Recommendation I.361 (1995): "B-ISDN ATM Layer Specification".

[8] ITU-T Recommendation I.630 (1999): "ATM Protection Switching".

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

3 Definitions, symbols and abbreviations

3.1 Definitions

3.2 Symbols

3.3 Abbreviations

AAL	ATM Adaption Layer
AAL2	AAL Type 2
ATM	Asynchronous Transfer Mode

CPCH	Common Packet Channel
CPCS	Common Part Convergence Sublayer
CPS	Common Part Sublayer
DSCH	Downlink Shared Channel
FACH	Forward Access Channel
FP	Frame Protocol
LC	Link Characteristics
PT	Path Type
RACH	Random Access Channel
RNC	Radio Network Controller
SAAL	Signalling ATM Adaption Layer
SAR	Segmentation and Reassembly
SSCF	Service Specific Co-ordination Function
SSCOP	Service Specific Connection Oriented Protocol
SSCS	Service Specific Convergence Sublayer
SSSAR	Service Specific Segmentation and Reassembly
STC	Signalling Transport Converter
UMTS	Universal Mobile Telecommunication Network
UNI	User-Network Interface
USCH	Uplink Shared Channel
UTRAN	UMTS Terrestrial Radio Access Network

6.2 Transport Signalling

Q.2630.~~1~~ 2 as developed by ITU-T [~~3~~xx] is selected as the standard AAL2 signalling protocol for Iub. Q.2630.2 [xx] adds new optional capabilities to Q.2630.1 [3].

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

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

7.2 Signalling Bearer

SAAL-UNI is the standard signalling bearer for the AAL Type Signalling protocol (Q.2630.~~1~~2) on Iub [4, 5]. The protocol stack is shown in Figure 2 below.

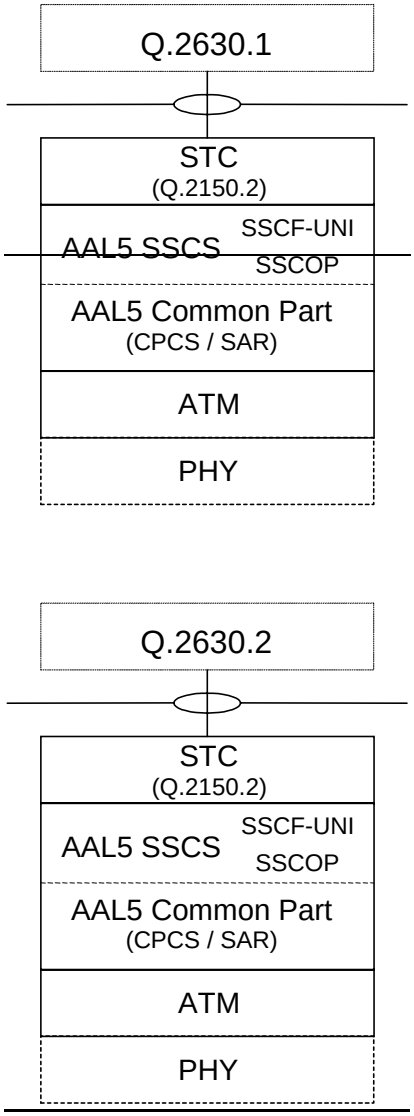

Figure 2: Transport Network Control plane protocol structure on Iub

Binding ID provided by the radio network layer shall be copied in SUGR parameter of ESTABLISH.request primitive of [3].

The signalling transport converter (STC) relevant for Iub is Q.2150.2 [6]. The AAL5 Common Part contains CPCS and SAR.

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Cardiff, UK, 26th February – 2nd March 2001

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CHANGE REQUEST

⌘ **25.931** **CR** **7** ⌘ rev **1** ⌘ Current version: **3.2.0** ⌘

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Source:	⌘	R-WG3
Work item code:	⌘	ETRAN-QoSAAL2
Date:	⌘	February 2001
Category:	⌘	**B**
Release:	⌘	REL-4

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R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change:	⌘	Reflection of Rel4 WI TR 25.934 “QoS optimization for AAL type 2 connections over Iub and Iur interfaces”.
Summary of change:	⌘	1. In 4.6, Q.2630.1 is replaced by Q.2630.2. 2. In 4.6.1, Q.2630.1 is replaced by Q.2630.2. 3. In 7.8.1, Q.2360.1 is replaced by Q.2630.2 but without modification procedure.
Consequences if not approved:	⌘	

Clauses affected:	⌘	4.6, 4.6.1, and 7.8.1
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

4.6 ALCAP

ALCAP is a generic name to indicate the protocol(s) used to establish data transport bearers on the Iu, Iur and Iub interfaces. Q.2630.~~1~~ 2 (Q AAL2) is one of the selected protocols to be used as ALCAP. Q.2630.2 adds new optional capabilities to Q.2630.1.

The following should be noted:

- data transport bearers may be dynamically established using ALCAP or preconfigured;
- transport bearers may be established before or after allocation of radio resources.

4.6.1 Q.2630.~~1~~ 2 (Q.AAL 2)

The following figure is showing an example of use of Q.2630.~~1~~ 2 in the UTRAN context, for the different interfaces.

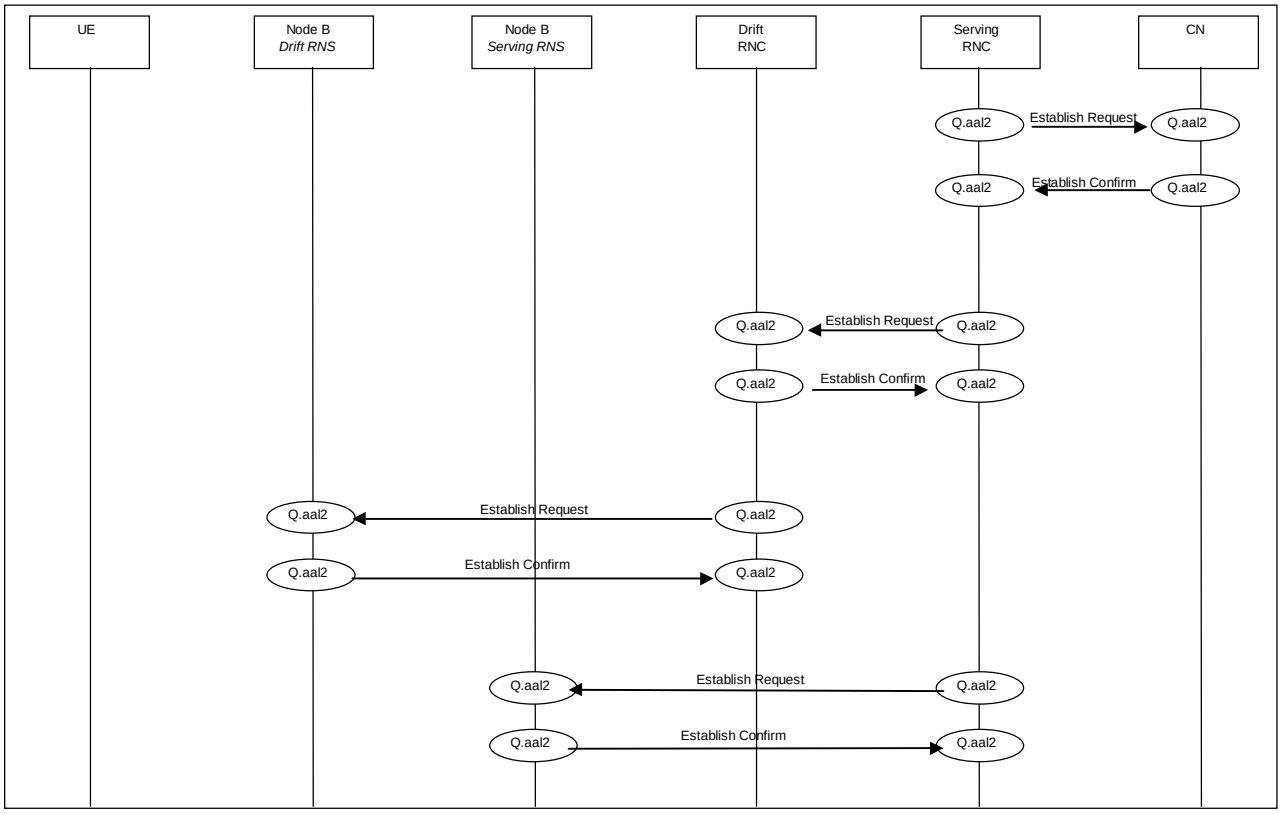

Figure 2: Example on Q.2630.~~1~~2

7.8 Radio Access Bearer Modification

The following examples show modification of a radio access bearer established either on a dedicated channel (DCH) or on a common transport channel (RACH/FACH). The procedure starts from a radio access bearer assignment because does not exist a special message to modify a radio access bearer, instead an “assignment” message is used.

7.8.1 DCCH on DCH - Synchronised

This example shows modification of a radio access bearer established on a dedicated channel (DCH) with UE in macrodiversity between two RNCs. A NSAP synchronised procedure is used and a successful case is shown. For an unsuccessful case it’s important to note that a failure message can be sent in any point of the Message Sequence Chart (MSC); in particular could be in RRC reconfiguration response (# 16).

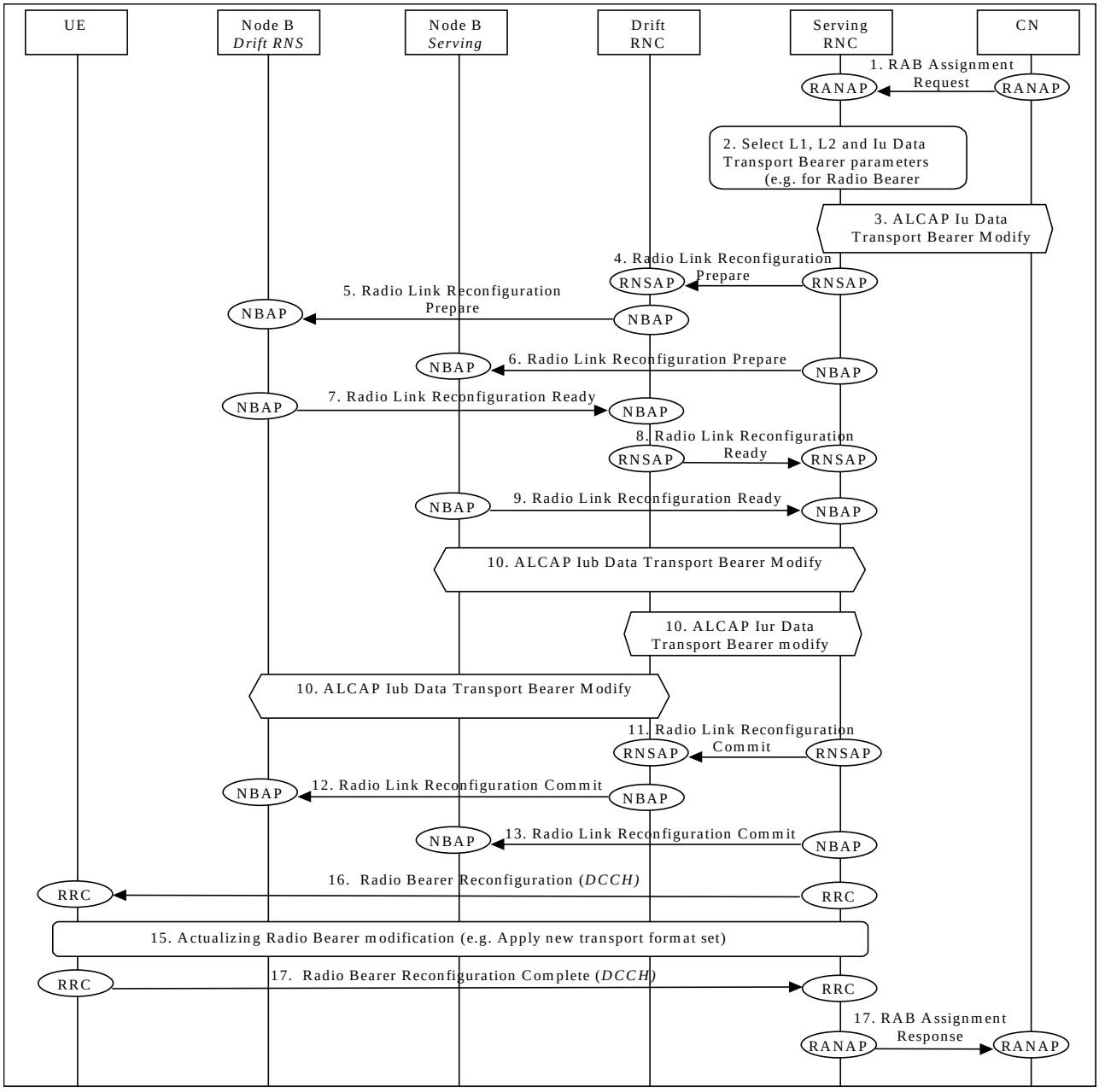

Figure 20: Radio Access Bearer Modification - DCH Modification - Synchronised

1. CN initiates modification of the radio access bearer with RANAP message **Radio Access Bearer Assignment Request.**
   Parameters: parameters to be modified at lower level e.g. Maximum Bit Rate.

2. Interworking functions. SRNC chooses which parameters (lower level) ought to be modified and what kind of procedure has to start up (i.e Radio Bearer Reconfiguration for RRC).
3. SRNC starts an Iu Data Transport Bearer Modification between the CN and the SRNC using the ALCAP protocol with AAL2 bindings carried by radio access bearer assignment message (this step is not required towards PS domain). This has to be done before Radio Reconfiguration itself because the transport channel must be ready when the radio channel will be ready.
4. SRNC requests DRNC to prepare modification of DCH carrying the radio access bearer (**Radio Link Reconfiguration Prepare**).
   Parameters: Transport Format Combination Set, UL scrambling code, etc.
5. DRNC requests its Node B to prepare modification of DCH related to the radio access bearer (**Radio Link Reconfiguration Prepare**).
6. SRNC requests its Node B to prepare modification of DCH carrying the radio access bearer (**Radio Link Reconfiguration Prepare**).
   Parameters: Transport Format Combination Set, UL scrambling code (FDD only), Time Slots (TDD only), User Codes (TDD only).
7. Node B (drift) notifies DRNC that modification preparation is ready (**Radio Link Reconfiguration Ready**).
8. DRNC notifies SRNC that modification preparation is ready (**Radio Link Reconfiguration ready**).
9. Node B (serving) notifies SRNC that modification preparation is ready (**Radio Link Reconfiguration Ready**). Note: here a **Radio Link Reconfiguration Failure** could occur.
10. SRNC initiates modify of Iub (Serving RNS) Data Transport bearer. The same does DRNC with its own Iub. SRNC initiates modify of Iur (Serving RNS) Data Transport bearer. In the case that ALCAP is implemented by Q.AAL2 (~~Q.2360.1~~Q.2630.2 but without modification procedure) it implies the release of the existing bearer and the establishment of a new one.
11. RNSAP message **Radio Link Reconfiguration Commit** is sent from SRNC to DRNC.
12. NBAP message **Radio Link Reconfiguration Commit** is sent from DRNC to Node B (drift).
13. NBAP message **Radio Link Reconfiguration Commit** is sent from SRNC to Node B (serving).
14. RRC message **Radio Bearer Reconfiguration** is sent by controlling RNC (here SRNC) to UE.
15. Both UE and Nodes B actualise modification of DCH (i.e. applying a new transport format).
16. UE sends RRC message **Radio Bearer Reconfiguration Complete** to SRNC.
17. SRNC acknowledges the modification of radio access bearer (**Radio Access Bearer Assignment Response**) towards CN.

A radio access bearer modification procedure (via radio access bearer assignment message) is shown with mapping to Radio Bearer reconfiguration. Note that this is not possible if we want to change what transport channel or logical channel you use, because RB reconfiguration does not permit a change in type of channel (see [8]).