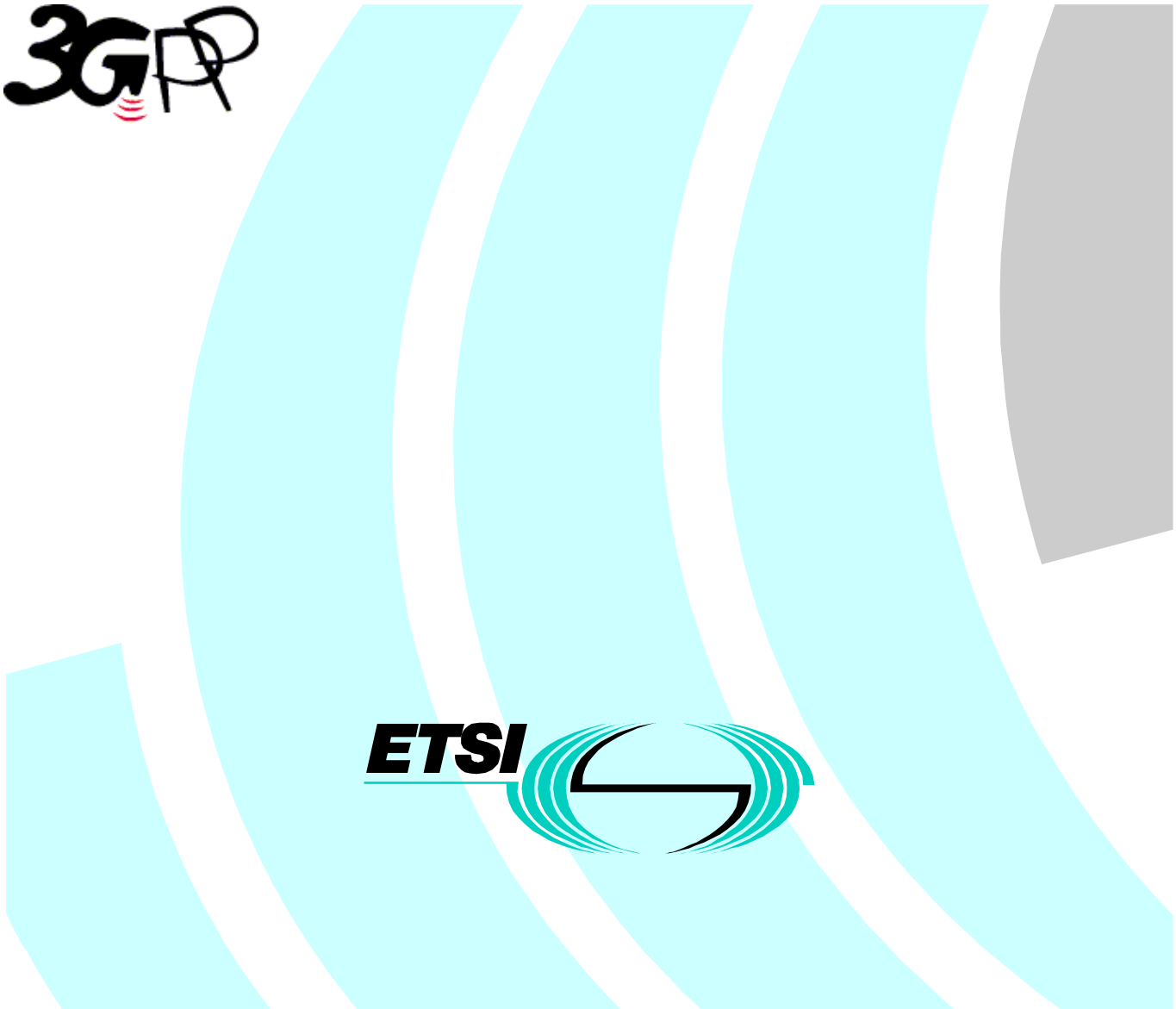
ETSI TS 125 434 V3.5.0 (2001-03)

Technical Specification

Universal Mobile Telecommunications System (UMTS);
UTRAN Iub Interface Data Transport and Transport Signalling for Common Transport Channel Data Streams
(3GPP TS 25.434 version 3.5.0 Release 1999)



Reference
RTS/TSGR-0325434UR4

Keywords
UMTS

ETSI

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Foreword

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Contents

Foreword

This Technical Specification (TS) has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

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- x the first digit:
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- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

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.
- 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.363.2 (1997): "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] ITU-T Recommendation Q.2630.1 (1999): "AAL type 2 Signalling Protocol (Capability Set 1)".

[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".

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
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

4 ATM Layer

4.1 General

ATM shall be used in the transport network user plane and the transport network control plane according to I.361 [7].

4.2 Protection Switching at ATM Layer

If redundancy of pathways at ATM layer between RNC and Node B is supported, it shall be implemented using ATM Protection Switching according to I.630 [8].

5 I_{ub} Data Transport for Common Transport Channel Data Streams

5.1 Introduction

This chapter specifies the transport layers that support Common Transport Channel (FACH, RACH, CPCH [FDD], DSCH, USCH [TDD]) data streams.

5.2 Transport Layer

ATM and AAL2 (I363.2 [1] and I366.1 [2]) are used at the standard transport layer for Iub RACH, CPCH [FDD] FACH, DSCH, USCH [TDD] data streams.

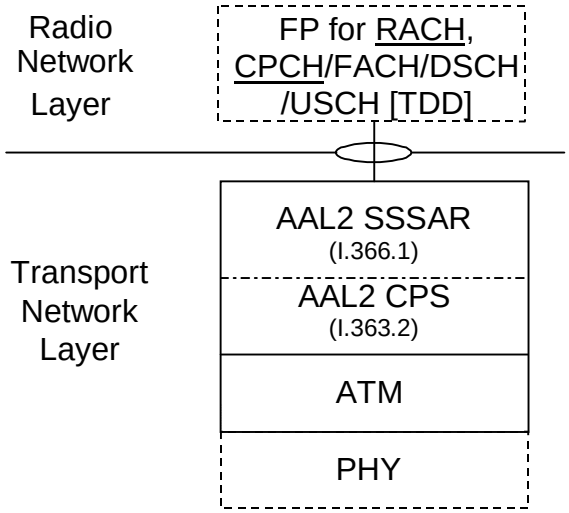

Figure 1: Protocol stack for RACH, CPCH [FDD], FACH, and DSCH Iub data stream transport

Figure 1 shows the protocol stack for the transport of RACH, CPCH [FDD], FACH, DSCH and USCH [TDD] Iub data streams. The Service Specific Segmentation and Reassembly (SSSAR) sublayer is used for the segmentation and reassembly of AAL2 SDUs (i.e. SSSAR is only considered from I366.1).

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

6.1 Introduction

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

6.2 Transport Signalling

Q.2630.1 as developed by ITU-T [3] is selected as the standard AAL2 signalling protocol for Iub.

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

7 Signalling Bearer for Transport Signalling on I_{ub} Interface

7.1 Introduction

This chapter specifies the signalling bearer protocol stack which supports the transport signalling protocol.

7.2 Signalling Bearer

SAAL-UNI is the standard signalling bearer for the AAL Type Signalling protocol (Q.2630.1) on Iub [4, 5]. The protocol stack is shown in Figure 2 below.

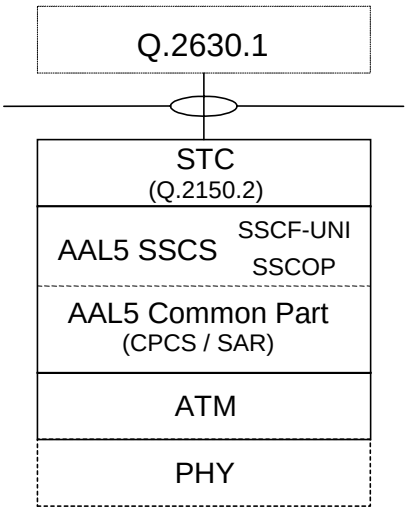

Figure 2: Transport Network Control plane protocol structure on Iub

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.

Annex A (informative): Change history

Change history					
TSG RAN#	Version	CR	Tdoc RAN	New Version	Subject/Comment
RAN_04	-	-	-	3.0.0	Approved by TSG-RAN by correspondence
RAN_05	3.0.0	-	-	3.1.0	Approved by TSG-RAN #5
RAN_07	3.1.0	-	-	3.2.0	Approved at TSG RAN #7
RAN_09	3.2.0	003	RP-000390	3.3.0	Approved at TSG RAN #9
RAN_10	3.3.0	004 005	RP-000631	3.4.0	Approved at TSG RAN #10
RAN_11	3.4.0	006	RP-010127	3.5.0	Approved at TSG RAN #11

History

Document history		
V3.1.0	January 2000	Publication
V3.2.0	March 2000	Publication
V3.3.0	September 2000	Publication
V3.4.0	December 2000	Publication
V3.5.0	March 2001	Publication