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Technical Specification

3rd Generation Partnership Project (3GPP);
Technical Specification Group (TSG) RAN;
UTRAN I_{ur} Interface User Plane Protocols for Common Transport Channel Data Streams
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Foreword

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

The contents of this TS are subject to continuing work within 3GPP TSG RAN and may change following formal TSG RAN approval. Should the TSG modify the contents of this TS, it will be re-released with an identifying change of release date and an increase in version number as follows:

Version m.t.e

where:

m indicates [major version number]

x the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

y the third digit is incremented when editorial only changes have been incorporated into the specification.

1 Scope

This 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

References may be made to:

a) specific versions of publications (identified by date of publication, edition number, version number, etc.), in which case, subsequent revisions to the referenced document do not apply;

b) all versions up to and including the identified version (identified by "up to and including" before the version identity);

c) all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or

d) publications without mention of a specific version, in which case the latest version applies.

A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

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

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

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

[4] 3GPP TS 25.427 Iub/Iur User Plane Protocols for DCH Data Streams

~~1~~3 Definitions, symbols and abbreviations

~~1.1~~3.1 Definitions

. [Editor´s note: For list of definitions, see [1]. Only definitions specific to this document are listed below, in order to avoid inconsistency between documents. When list is stable, definitions relevant for this document should be extracted.]

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

~~1.2~~3.2 Symbols

3.3 Abbreviations

AAL2	ATM Adaptation Layer type 2
ATM	Asynchronous Transfer Mode
CPS	Common Part Sublayer
FP	Frame Protocol
SSCS	Service Specific Convergence Sublayer
SSSAR	Service Specific Segmentation and Reassembly sublayer
UE	User Equipment

4 General aspects

4.1 Common Transport Channel Data Streams User Plane Protocol Services

This chapter describes the services that the User Plane Protocols provide such as data transfer, flow control.

4.1.1 RACH/FACH Data Streams User Plane Protocol Services

4.1.2 DSCH Data Streams User Plane Protocol Services

4.2 Services expected from data transport

5 Frame Structure and Coding

5.1 Data frame structure

5.1.1 RACH/FACH Channels

RACH/FACH Iur data stream corresponds to the data stream of one specific UE. The used transport bearer is bi-directional.

	Information element	Description	Present on	
			RACH UL	FACH DL
Header	Frame Type	RACH/FACH data frame	X	X
	DCRNTI/SRNTI	Used to identify the UE context in the CRNC/SRNC	SRNTI	DCRNTI
	FACH Indicator	Indicates if the data in the payload should be sent on the FACH coupled to the RACH (i.e. the payload contains the Cell Update Confirm message), or if it can be sent on a different FACH decided by the CRNC (subsequent user data).		X
	Priority Indicator	Priority indicator corresponding to logical channel type. Used by the CRNC to place the payload in the correct transmit buffer.		X
	Length	Length of the data field	X	X
Payload	Checksum indicator	See ref. [4] TS 25.427	X	
	Data	Contains the MAC-c SDU to be sent over the radio interface.	X	X
	~~Data frame checksum~~	~~See ref. [4] TS 25.427~~	~~X~~	~~X~~
Tail	Data frame checksum	See ref. [4] TS 25.427	X	X

Note that the RACH/FACH FP does not facilitate multiplexing of data streams from different UEs onto the same data frame, but does allow multiple UEs to share the same transport bearer.

5.1.2 DSCH Channels

5.2 Control frame structure

5.2.1 RACH/FACH Channels

5.2.2 DSCH Channels

5.3 Coding

6 Common Transport Channel Data Streams User Plane Procedures

This chapter specifies the user plane procedures for Common Transport Channels data streams. Typical related scenarios at Iur interface should be described.

For the user plane of the radio network layer there are three Common Transport Channel frame handling protocols:

- Random Access Channel Frame Protocol (RACH FP) for transport of Iur data streams carried on RACH on the Uu-interface.
- Forward Access Channel Frame Protocol (FACH FP) for transport of Iur data streams carried on FACH on the Uu-interface.
- Downlink Shared Channel Frame Protocol (DSCH FP) for transport of Iur data streams carried on DSCH on the Uu-interface.

6.1 Data Transfer

6.1.1 RACH/FACH Channels

6.1.2 DSCH Channels

6.2 Flow Control

6.2.1 RACH/FACH Channels

6.2.2 DSCH Channels

7 History

Document history		
0.0.1	February 1999	Document structure proposal
0.0.2	February 1999	Introduction of the related content of Merged description of Iur interface.
0.0.3	March 1999	Revision bars removed. Modifications of the title. CCH have been changed into "Common Transport Channel". Addition of a definition of Common Transport Channels.
0.0.4	April 1999	Removal of temporary reference to Merged Iur specification
0.1.0	April 1999	Removal of revision bars
0.1.1	April 1999	Changes after the 1st review in TSG RAN WG3 #3 meeting.
0.2.0	June 1999	Version approved at TSG RAN WG3#4 meeting. No change.
0.2.1	August 1999	Addition of text on Data Frame structure coming from tdoc R3-99734 section 5.1 agreed with modifications at RAN WG3#5 meeting.
0.2.2	September 99	Version approved at RAN3#6 with modifications: - FACH/RACH frame structure: Move of data frame checksum to the tail; Replacing CRNTI by DRNTI. -
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This document is written in Microsoft Word version 7/97.		