

ETSI TS 125 420 V13.0.0 (2016-01)



**Universal Mobile Telecommunications System (UMTS);
UTRAN Iur interface general aspects and principles
(3GPP TS 25.420 version 13.0.0 Release 13)**



Reference

RTS/TSGR-0325420vd00

Keywords

UMTS

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from:
<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status.
Information on the current status of this and other ETSI documents is available at
<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, please send your comment to one of the following services:
<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2016.
All rights reserved.

DECT™, PLUGTESTS™, UMTS™ and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.
3GPP™ and **LTE™** are Trade Marks of ETSI registered for the benefit of its Members and
of the 3GPP Organizational Partners.
GSM® and the GSM logo are Trade Marks registered and owned by the GSM Association.

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

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

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under
<http://webapp.etsi.org/key/queryform.asp>.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

| | |
|---|----|
| Intellectual Property Rights | 2 |
| Foreword..... | 2 |
| Modal verbs terminology..... | 2 |
| Foreword..... | 5 |
| 1 Scope | 6 |
| 2 References | 6 |
| 3 Definitions and abbreviations..... | 7 |
| 3.1 Definitions..... | 7 |
| 3.2 Abbreviations | 7 |
| 3.2 Specification Notations | 8 |
| 4 General Aspects..... | 9 |
| 4.1 Introduction | 9 |
| 4.2 Iur Interface General Principles..... | 9 |
| 4.3 Iur Interface Specification Objectives | 9 |
| 4.3.1 General..... | 9 |
| 4.3.2 Addressing of RNSs over the Iur Interface | 9 |
| 4.4 Iur Interface Capabilities | 10 |
| 4.4.1 Radio application related signalling..... | 10 |
| 4.4.2 Iub/Iur DCH data streams | 10 |
| 4.4.3 Iur RACH data streams..... | 10 |
| 4.4.4 Iur DSCH data streams [TDD] | 10 |
| 4.4.5 Iur USCH data streams [TDD] | 10 |
| 4.4.6 Iur FACH data streams | 10 |
| 4.4.7 Iur HS-DSCH data streams | 10 |
| 4.4.8 Iub/Iur E-DCH data streams | 10 |
| 4.4.9 Iur IuUP data streams for CS data forwarding..... | 11 |
| 4.5 Iur Interface Characteristics | 11 |
| 4.5.1 Uses of SCCP | 11 |
| 4.5.1.1 General | 11 |
| 4.5.1.2 SCCP connection establishment..... | 11 |
| 4.5.1.3 Establishment procedure initiated from the SRNC | 11 |
| 4.5.1.3A Establishment procedure initiated from an RNC requesting common measurements or information..... | 12 |
| 4.5.1.4 SCCP connection release | 13 |
| 4.5.1.5 General SCCP Abnormal Conditions..... | 13 |
| 4.5.1.5.1 SCCP bearer failure | 13 |
| 4.5.1.5.2 SCCP connection failure | 13 |
| 4.5.2 SCCP Addressing Scheme | 14 |
| 4.5.2.1 General | 14 |
| 5 Functions of the I _{ur} Interface Protocols | 14 |
| 5.1 Functional List..... | 14 |
| 5.2 Functional Split over Iur..... | 15 |
| 5.2.1 Combining/Splitting..... | 15 |
| 5.2.2 Control of Combining/Splitting Topology..... | 15 |
| 5.2.3 Handling of DRNS Hardware Resources..... | 15 |
| 5.2.4 Allocation of Physical Channels | 15 |
| 5.2.5 UpLink Power Control..... | 15 |
| 5.2.6 Down-Link Power Control | 15 |
| 5.2.7 Admission Control..... | 16 |
| 5.2.8 Radio Protocol Functional Split..... | 16 |
| 5.2.9 MBMS Bearer Type Control | 16 |
| 5.2.10 MBSFN MCCH Information Control..... | 16 |

| | | |
|-------|--|-----------|
| 6 | I _{ur} Interface Protocols | 16 |
| 6.1 | General | 16 |
| 6.2 | Radio Signalling Protocols | 17 |
| 6.2.1 | RNSAP Protocol | 17 |
| 6.3 | User Plane Frame Protocols | 17 |
| 6.3.1 | Iub/Iur DCH Frame Protocol | 17 |
| 6.3.2 | Iur DSCH Frame Protocol [TDD] | 18 |
| 6.3.3 | Iur USCH Frame Protocol [TDD] | 18 |
| 6.3.4 | Iur RACH Frame Protocol | 18 |
| 6.3.5 | Iur FACH Frame Protocol | 18 |
| 6.3.6 | Iur HS-DSCH Frame Protocol | 18 |
| 6.3.7 | Iur E-DCH Frame Protocol | 19 |
| 6.4 | Mapping of Frame Protocols onto transport bearers | 19 |
| 7 | DRNS logical Model over I _{ur} | 19 |
| 7.1 | Overview | 19 |
| 7.2 | Logical Model Elements | 20 |
| 7.2.1 | Radio Link | 20 |
| 7.2.2 | Cell | 20 |
| 7.2.3 | Iur DCH Data Port | 20 |
| 7.2.4 | Iur DSCH Data Port [TDD] | 21 |
| 7.2.5 | Iur USCH Data Port [TDD] | 21 |
| 7.2.6 | Iur RACH/FACH Data Port | 21 |
| 7.2.7 | Iur Control Port | 21 |
| 7.2.8 | Iur HS-DSCH Data Port | 21 |
| 7.2.9 | Iur E-DCH Data Port | 21 |
| 8 | I _{ur} Interface Protocol Structure | 21 |
| 9 | Other I _{ur} Interface Specifications | 22 |
| 9.1 | UTRAN Iur Interface: Layer 1 (TS 25.421) | 22 |
| 9.2 | UTRAN Iur Interface: Signalling Transport (TS 25.422) | 22 |
| 9.3 | UTRAN Iur Interface: RNSAP Specification (TS 25.423) | 22 |
| 9.4 | UTRAN Iur Interface: Data Transport and Transport Signalling for Common Transport Channel Data Streams (TS 25.424) | 22 |
| 9.5 | UTRAN Iur Interface: User Plane Protocols for Common Transport Channel Data Streams (TS 25.425) | 23 |
| 9.6 | UTRAN Iur & Iub Interface: Data Transport and Transport Signalling for DCH Data Streams (TS 25.426) | 23 |
| 9.7 | UTRAN Iur & Iub Interface: User Plane Protocols for DCH Data Streams (TS 25.427) | 23 |
| 9.8 | Summary of UTRAN Iur Interface Technical Specifications | 23 |
| | Annex A (informative): Change History | 24 |
| | History | 25 |

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

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- 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 is an introduction to the TSG RAN TS 25.42x series of UMTS Technical Specifications that define the Iur Interface. It is a logical interface for the interconnection of two Radio Network Controller (RNC) components of the UMTS Terrestrial Radio Access Network (UTRAN) for the UMTS system.

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: Radio Network Subsystem Application Part (RNSAP) signalling".
- [6] 3GPP TS 25.424: "UTRAN Iur Interface: Data Transport & Transport Signalling".
- [7] Void
- [8] 3GPP TS 25.426: "UTRAN Iur & Iub Interface: Data Transport & Transport Signalling for DCH Data Streams".
- [9] ITU-T Recommendation Q.711 (1996-07): "Functional description of the signalling connection control part".
- [10] ITU-T Recommendation Q.712 (1996-07): "Definition and function of signalling connection control part messages".
- [11] ITU-T Recommendation Q.713 (1996-07): "Signalling connection control part formats and codes".
- [12] ITU-T Recommendation Q.714 (1996-07): "Signalling connection control part procedures".
- [13] 3GPP TS 23.003: "Numbering, Addressing and Identification".
- [14] Void
- [15] Void
- [16] Void
- [17] 3GPP TR 43.930: "Iur-g interface; Stage 2".
- [18] 3GPP TS 25.346: "Introduction of the Multimedia Broadcast/Multicast Service (MBMS) in the Radio Access Network (RAN); Stage 2".