

# ETSI TS 125 414 V14.0.0 (2017-04)



**Universal Mobile Telecommunications System (UMTS);  
UTRAN Iu interface data transport and transport signalling  
(3GPP TS 25.414 version 14.0.0 Release 14)**



---

Reference

RTS/TSGR-0325414ve00

---

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

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

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 2017.  
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
4 Data Link Layer .....	8
4.1 ATM Transport Option .....	8
4.2 IP Transport Option.....	8
5 Circuit switched domain.....	8
5.1 Transport network user plane .....	8
5.1.1 General.....	8
5.1.2 ATM Transport Option .....	9
5.1.2.1 ATM Adaptation Layer 2.....	9
5.1.2.1.1 AAL2-Segmentation and Reassembly Service Specific Convergence Sublayer (I.366.1).....	9
5.1.2.1.2 AAL2-specification (I.363.2) .....	9
5.1.3 IP Transport Option .....	9
5.1.3.1 General .....	9
5.1.3.2 UDP/IP .....	9
5.1.3.3 RTP .....	10
5.1.3.3.1 RTP Header .....	10
5.1.3.3.1.4 Contributing Source (CSRC) count .....	10
5.1.3.3.1.5 Marker Bit.....	10
5.1.3.3.1.6 Payload Type .....	10
5.1.3.3.1.7 Sequence Number .....	10
5.1.3.3.1.8 Timestamp .....	10
5.1.3.3.1.9 Synchronisation Source (SSRC) .....	11
5.1.3.3.1.10 CSRC list .....	11
5.1.3.3.2 RTP Payload.....	11
5.1.3.4 RTCP.....	11
5.1.3.5 Diffserv code point marking .....	11
5.2 Transport network control plane .....	11
5.2.1 General.....	11
5.2.2 Transport Signalling for the ATM Transport Option.....	12
5.2.2.1 Signalling protocol (ALCAP) .....	12
5.2.2.1.1 AAL2 Signalling Protocol (Q.2630.2).....	12
5.2.2.2 Signalling transport converter .....	12
5.2.2.2.1 AAL2 MTP3B Signalling Transport Converter (Q.2150.1).....	12
5.2.2.3 MTP3b (Q.2210).....	12
5.2.2.4 SSCF-NNI (Q.2140) .....	12
5.2.2.5 SSCOP (Q.2110) .....	12
5.2.2.6 ATM Adaptation Layer Type 5 (I.363.5).....	13
5.3 Interworking between ATM and IP Transport Options.....	13
5.3.1 Introduction.....	13
5.3.2 Interworking Alternatives .....	13
6 Packet switched domain .....	13
6.1 Transport network user plane .....	13
6.1.1 General.....	13
6.1.2 ATM Transport Option .....	14

6.1.2.1	General .....	14
6.1.2.2	GTP-U .....	14
6.1.2.3	UDP /IP .....	14
6.1.2.4	ATM Adaptation Layer Type 5 (I.363.5) .....	14
6.1.2.5	IP/ATM .....	15
6.1.3	IP Transport Option .....	15
6.1.3.1	General .....	15
6.1.3.2	GTP-U .....	15
6.1.3.3	UDP /IP .....	15
6.1.3.4	Diffserv code point marking .....	16
6.2	Transport network control plane .....	16
7	Broadcast Domain .....	16
7.1	Transport network user plane .....	16
7.1.1	General .....	16
7.1.2	ATM Transport Option .....	16
7.1.2.1	General .....	16
7.1.2.2	TCP/IP .....	16
7.1.2.3	ATM Adaptation Layer Type 5 (I.363.5) .....	17
7.1.2.4	IP/ATM .....	17
7.1.3	IP Transport Option .....	17
7.1.3.1	General .....	17
7.1.3.2	TCP /IP .....	17
7.1.3.4	Diffserv code point marking .....	17
7.2	Transport network control plane .....	17
<b>Annex A (informative):</b>	<b>IP-ATM Interworking .....</b>	<b>18</b>
A.1	Application of IP tunnelling in IP-ATM interworking alternative 1 in case of no direct ATM connectivity at the IP&ATM dual stack RNC/CN-node .....	18
A.2	Application of IP-ALCAP in IP-ATM interworking alternative 2 .....	18
<b>Annex B (informative):</b>	<b>Change history .....</b>	<b>19</b>
History .....	20	

---

## Foreword

This Technical Specification (TS) has been produced by the 3<sup>rd</sup> 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 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. 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 (1995-11): "B-ISDN ATM layer specification".
- [2] ITU-T Recommendation I.363.2 (2000-11): "B-ISDN ATM Adaptation layer specification: Type 2 AAL".
- [3] ITU-T Recommendation I.363.5 (1996-08): "B-ISDN ATM Adaptation layer specification: Type 5 AAL".
- [4] ITU-T Recommendation I.366.1 (1998-06): "Segmentation and Reassembly Service Specific Convergence Sublayer for the AAL type 2".
- [5] ITU-T Recommendation E.164 (1997-05): "The international public telecommunication numbering plan".
- [6] ITU-T Recommendation Q.2110 (1994-07): "B-ISDN ATM adaptation layer - Service Specific Connection Oriented Protocol (SSCOP)".
- [7] ITU-T Recommendation Q.2140 (1995-02): "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 (1999-12): "AAL type 2 signalling transport converter on broadband MTP".
- [9] ITU-T Recommendation Q.2210 (1996-07): "Message transfer part level 3 functions and messages using the services of ITU-T Recommendation Q.2140".
- [10] ITU-T Recommendation Q.2630.1 (1999-12): "AAL type 2 signalling protocol (Capability Set 1)".
- [11] ITU-T Recommendation X.213 (1995-11): "Information technology - Open systems interconnection - Network Service Definitions".
- [12] IETF RFC 768 (1980-08): "User Datagram Protocol".
- [13] IETF RFC 791 (1981-09): "Internet Protocol".
- [14] IETF RFC 2684 (1999-09): "Multiprotocol Encapsulation over ATM Adaptation Layer 5".
- [15] IETF RFC 2225 (1998-04): "Classical IP and ARP over ATM".
- [16] IETF RFC 2460 (1998-12): "Internet Protocol, Version 6 (IPv6) Specification".
- [17] 3GPP TS 29.060: "General Packet Radio Service (GPRS); GPRS Tunnelling Protocol (GTP) across the Gn and Gp interface".