

ETSI TS 125 442 V16.0.0 (2020-08)



**Universal Mobile Telecommunications System (UMTS);
UTRAN implementation-specific O&M transport
(3GPP TS 25.442 version 16.0.0 Release 16)**



Reference

RTS/TSGR-0325442vg00

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 prevailing version of an ETSI deliverable is the one made publicly available in PDF format at www.etsi.org/deliver.

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.

© ETSI 2020.

All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members.

3GPP™ and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

oneM2M™ logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners.

GSM® and the GSM logo are trademarks registered and owned by the GSM Association.

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables 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.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

Legal Notice

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. These shall be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between 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
Legal Notice	2
Modal verbs terminology.....	2
Foreword.....	4
1 Scope	5
2 References	5
3 Definitions and abbreviations.....	5
3.1 Definitions	5
3.2 Abbreviations	5
4 Implementation Specific O&M Transport.....	6
4.1 Requirements.....	6
4.2 Routing	6
4.3 Transport Bearer.....	7
4.3.1 ATM Transport Option.....	7
4.3.2 IP Transport Option	7
Annex A (informative): Change history	9
History	10

Foreword

This Technical Specification 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 specifies the transport of implementation specific O&M signalling between Node B and the Management Platform in case that the transport is routed via the RNC.

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] Void
 - [2] Void
 - [3] ITU-T Recommendation I.363.5 (1996-08): "B-ISDN ATM Adaptation Layer Type 5 Specification".
 - [4] IETF RFC 2225 (1998-04): "Classical IP and ARP over ATM".
 - [5] IETF RFC 2684 (1999-09): "Multiprotocol Encapsulation over ATM Adaptation Layer 5".
 - [6] IETF RFC 791 (1981-09): "Internet Protocol".
 - [7] Void
 - [8] 3GPP TS 25.426: "UTRAN Iur and Iub Interface Data Transport&Transport Signalling for DCH".
-

3 Definitions and abbreviations

3.1 Definitions

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

Logical O&M: Logical O&M is the signalling associated with the control of logical resources owned by the RNC but physically implemented in Node B.

Implementation Specific O&M: Implementation Specific O&M functions depend on the implementation of the Node B, both for its hardware and software components.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AAL5	ATM Adaptation Layer type 5
ATM	Asynchronous Transfer Mode
ARP	Address Resolution Protocol
RFC	Request For Comment
IP	Internet Protocol
O&M	Operation and Maintenance

RNC Radio Network Controller
 TNL Transport Network Layer

4 Implementation Specific O&M Transport

4.1 Requirements

While this specification only addresses the transport of Node B Implementation Specific O&M signalling, many of the following requirements are derived from generic requirements for O&M of UMTS network elements:

- Common O&M infrastructure for all network elements.
- Independence from various data link protocols.
- Support of various higher layer protocols and applications.
- Secure transmission.
- No Impact of O&M transport on traffic transport and signalling.
- Re-use of existing transport facilities, i.e. co-existence of Iub and Implementation Specific O&M on the same bearer.

4.2 Routing

It is the responsibility of the RNC to route Implementation Specific O&M signalling traffic. The traffic exchanged over this signalling link is completely transparent to the RNC. Both RNC and Node B have to support the routing of Implementation specific O&M via the RNC.

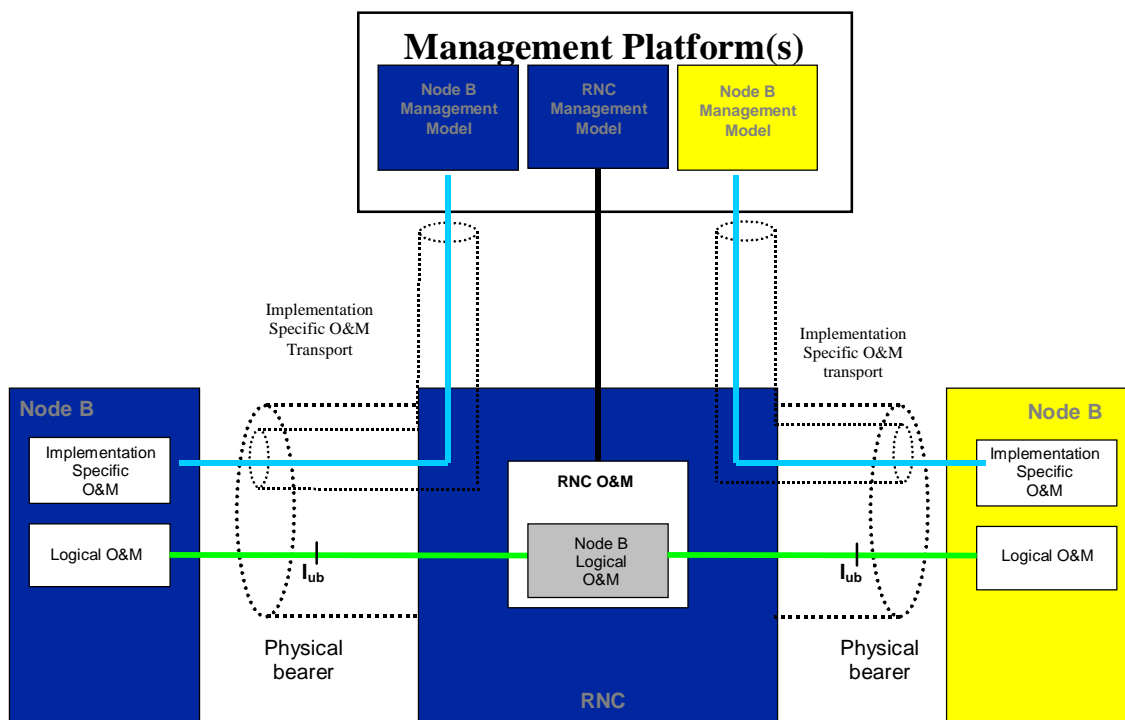


Figure 1: Implementation Specific O&M Transport via RNC

4.3 Transport Bearer

An appropriate transport bearer for Implementation Specific O&M should consider the requirements listed in subclause 4.1. IP (IETF RFC 791 [6]) should be the transport mechanism in order to allow a data link independent support of a variety of O&M applications and protocols for the Implementation Specific O&M of the Node B.

IP datagrams containing O&M signalling have to be carried over the same bearer as Iub. There are two options for the implementation specific O&M signalling bearer in Iub.

- 1) ATM Transport option
- 2) IP Transport option

4.3.1 ATM Transport Option

The following figure shows the protocol stack for Implementation Specific O&M transport between Node B and RNC in case of ATM transport option in Iub:

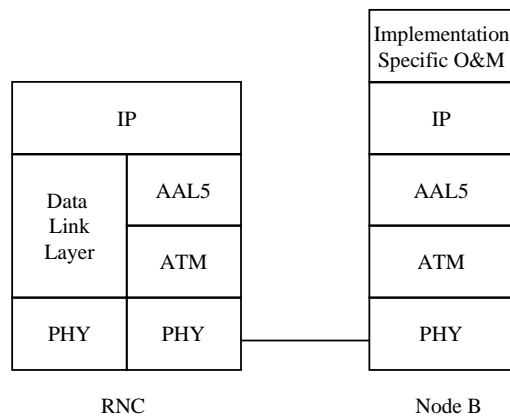


Figure 2: Protocol Stack for Implementation Specific O&M Transport (ATM transport option)

AAL5 shall be used according to ITU-T Recommendation I.363.5 [3].

AAL5 virtual circuits are used to transport the IP packets containing Implementation Specific O&M signalling data between Node B and RNC. Multiple VCs can be used over the interface. An association shall be made between a VC and the IP addresses that are related to this VC in the peer node side. This association can be made using O&M or using ATM Inverse ARP according to Classical IP over ATM.

Classical IP over ATM protocols are used to carry the IP packets over the ATM transport network. Classical IP over ATM is specified in IETF RFC 2225 [4]. Multiprotocol Encapsulation over AAL5 is specified in IETF RFC 2684 [5].

4.3.2 IP Transport Option

The following figure shows the protocol stack for Implementation Specific O&M transport between Node B and RNC in case of IP transport option in Iub:

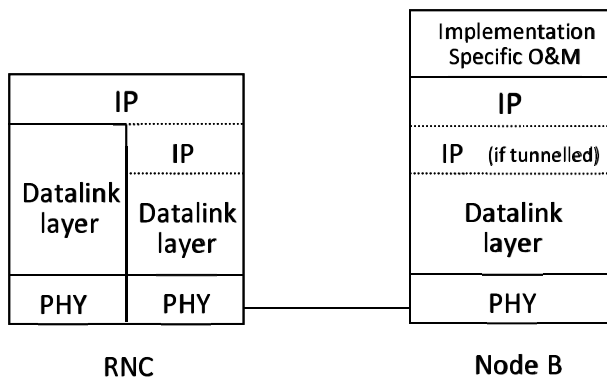


Figure 3: Protocol Stack for Implementation Specific O&M Transport (IP TNL)

Implementation specific O&M signalling is conveyed by IP between the Node B and the RNC. IP-in-IP tunneling may be applied when the Iub Transport Network Layer is used.

IP based Transport Network Layer of Iub is further defined in TS 25.426 [8].

Annex A (informative): Change history

Date / TSG	TSG Doc.	CR	Rev	Subject/Comment	New
12/2008	-	-	-	Creation of Rel-8 version based on v7.0.0	8.0.0
12/2009	-	-	-	Creation of Rel-9 version based on v8.0.0	9.0.0
SP-49	SP-100629			Clarification on the use of References (TS 21.801 CR#0030)	9.0.1
03/2011				Creation of Rel-10 version based on v9.0.1	10.0.0
52	RP-110685	0005		Removal of unused references	10.1.0
09/2012				Update to Rel-11 version (MCC)	11.0.0
09/2014				Update to Rel-12 version (MCC)	12.0.0
12/2015				Update to Rel-13 version (MCC)	13.0.0

Change history							
Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
2017-03	SA#75					Promotion to Release 14 without technical change	14.0.0
2018-07	SA#80	-	-	-	-	Promotion to Release 15 without technical change	15.0.0
2020-07	SA#88-e	-	-	-	-	Update to Rel-16 version (MCC)	16.0.0

History

Document history		
V16.0.0	August 2020	Publication