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Technical Specification

**Universal Mobile Telecommunications System (UMTS);
UTRAN Implementation Specific O&M Transport
(3G TS 25.442 version 3.0.0 Release 1999)**

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Foreword

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ETSI TS | TR 1nn nnn "[Digital cellular telecommunications system (Phase 2+) (GSM);] Universal Mobile Telecommunications System; <title>

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Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project, Technical Specification Group Services and System Aspects, Working Group 4 (Codec).

The contents of this informal TS may be subject to continuing work within the 3GPP and may change following formal TSG-S4 approval. Should TSG-S4 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

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.

[1]   3GPP TS 25.431, UTRAN Iub interface Layer 1

[2]   3GPP TS 25.401, UTRAN Overall Description

[3]   ITU-T Recommendation I.363.5 (8/1996): "B-ISDN ATM Adaptation Layer Type 5 Specification"

[4]   IETF RFC 2225 (4/1998): "Classical IP and ARP over ATM"

[5]   IETF RFC 1483 (7/1993): "Multiprotocol Encapsulation over ATM Adaptation Layer 5"

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 it's 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

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.
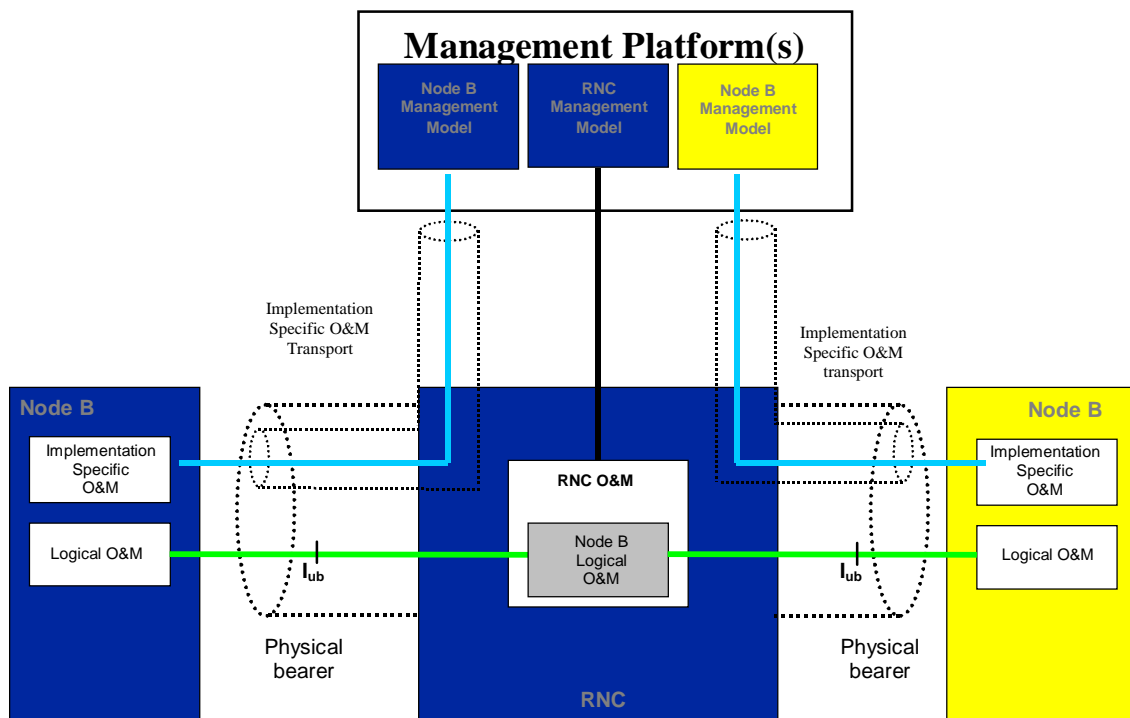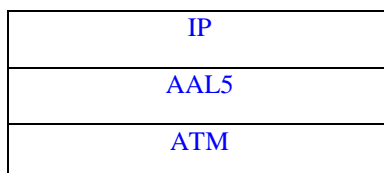

Figure 1: Implementation Specific O&M Transport via RNC

4.3   Transport Bearer

An appropriate transport bearer for Implementation Specific O&M should consider the requirements listed in section 4.1. IP 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. Since ATM will be used on Iub, IP over ATM should be the bearer for O&M signalling.

The following figure shows the protocol stack for Implementation Specific O&M transport between Node B and RNC:

IP
AAL5
ATM

Figure 2: Protocol Stack for Implementation Specific O&M Transport

AAL5 shall be used according to I.363.5 0.

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. There is a one-to-one relationship between the VC and the IP address as required by Classical IP over ATM. An association must be made between a peer node's IP address and a VC. 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 0. Multiprotocol Encapsulation over AAL5 is specified in IETF RFC 1483 0.

Annex A (informative):
Change Request History

TSG_	TSG_DO	SPEC	VERS_	VERS	CR	RE	SUBJECT

History

Document history		
V3.0.0	January 2000	Publication