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Telekomunikacijsko upravljavno omrežje (TMN) - Upravljavni vmesniki, pridružени referenčni toč ki VB5.2

Telecommunications Management Network (TMN); Management interfaces associated with the VB5.2 reference point

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Telecommunications Management Network (TMN).

National transposition dates	
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1 Scope

The present document specifies the management interfaces (Q3 interfaces) associated with the VB5.2 reference point [6] and EN 301 217-1 (see bibliography) for the support of configuration, fault & performance management functions. Fault and performance management together include both passive monitoring of reports and active fault isolation.

The Q3 interface is the TMN interface between network elements or Q-adapters which interface to OSs without mediation and between OSs and mediation devices.

Existing protocols are used where possible, and the focus of the work is on defining the object model. The definition of the functionality of TMN Operations Systems is outside the scope of the present document.

ITU-T Recommendation Q.2931 [9] is supported at the UNI, and the ATM Forum UNI is supported for compatibility with the established base of ATM equipment.

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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] ETSI EN 301 271: "Telecommunications Management Network (TMN); Management interfaces associated with the VB5.1 reference point".

[2] ITU-T Recommendation G.773: "Protocol suites for Q-interfaces for management of transmission systems".

[3] ITU-T Recommendation G.784: "Synchronous digital hierarchy (SDH) management".

[4] ITU-T Recommendation G.902: "Framework Recommendation on functional access networks (AN) Architecture and functions, access types, management and service node aspects".

[5] ITU-T Recommendation G.967.1 (1998): "V-interfaces at the Service Node (SN): VB5.1 reference point specification".

[6] ITU-T Recommendation G.967.2 (1998): "V-interfaces at the Service Node (SN): VB5.2 reference point specification".

[7] ITU-T Recommendation I.751: "Asynchronous transfer mode management of the network element view".

[8] ITU-T Recommendation M.3100 (1995): "Generic network information model".

[9] ITU-T Recommendation Q.2931: "Broadband Integrated Services Digital Network (B-ISDN) - Digital Subscriber Signalling System No. 2 (DSS 2) - User-Network Interface (UNI) - Layer 3 specification for basic call/connection control".

[10] ITU-T Recommendation Q.811: "Lower layer protocol profiles for the Q3 and X interfaces".

[11] ITU-T Recommendation Q.812: "Upper layer protocol profiles for the Q3 and X interfaces".

[12] Void.

[13] ITU-T Recommendation Q.824.6: "Stage 2 and stage 3 description for the Q3 interface - Customer administration: Broadband switch management".

[14] ITU-T Recommendation Q.832.1 (1998): "VB5.1 Management".

[15] ITU-T Recommendation Q.832.2 (1999): "VB5.2 Management".

[16] ITU-T Recommendation X.721 | ISO/IEC 10165-2 (1992): "Information technology - Open Systems Interconnection - Structure of management information: definition of management information".

3 Definitions, abbreviations, and conventions

3.1 Definitions

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

VB5 Resources: management of user port functions and service port functions providing User Network Interface (UNI) and Service Node Interface (SNI) functionality

NOTE: They are respectively considered in EN 301 754 based on the framework defined in ITU-T Recommendation G.902. Transmission specific resources lie outside its scope. VB5 Resources are referred to in the present document as resources

In addition, the present document uses terms defined in ITU-T Recommendations:

ITU-T Recommendation G.902: Access network (AN), User port functions, Service node (SN), Service node interface (SNI), Service port functions.

ITU-T Recommendation G.967.1: Logical service port (LSP), Logical user port (LUP), Physical service port (PSP), Physical user port (PUP), Real-time management coordination (RTMC), Virtual user port (VUP).

ITU-T Recommendation G.967.2: Broadband bearer connection control (B-BCC).

ITU-T Recommendation I.751: Message communication function (MCF).

3.2 Abbreviations

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

AN	Access Network
ASN.1	Abstract Syntax Notation One
ATM	Asynchronous Transfer Mode
B-BCC	Broadband Bearer Connection Control
GDMO	Guidelines for the Definition Of Managed Objects
LSP	Logical Service Port
LUP	Logical User Port
MIB	Management Information Base
MOC	Managed Object Class
OAM	Operations, Administration and Maintenance
OS	Operations System
RTMC	Real-Time Management Coordination
SDH	Synchronous Digital Hierarchy
SN	Service Node
SNI	Service Node Interface
TMN	Telecommunications Management Network
TTP	Trail Termination Point
UNI	User-Network Interface
VC	Virtual Channel
VP	Virtual Path
VPC	Virtual Path Connection
VPCI	Virtual Path Connection Identifier

3.3 Conventions

NOTE: While this specification on VB5.2 management makes use of ITU-T Recommendation X.722/Amd.1 (1995) on the SET-BY-CREATE property, the reader should be aware that ITU-T Recommendation X.722/Amd.1 (1995) has not been applied in the VB5.1 management specification.

Objects and their characteristics and associated ASN.1 defined here are given names with capitals used to indicate the start of the next word and acronyms are treated as if they were words.

Throughout the present document, all new attributes are named according to the following guidelines:

- The name of an attribute ends in the string "Ptr" if and only if the attribute value is intended to identify a single object.
- The name of an attribute ends in the string "PtrList" if and only if the attribute value is intended to identify one or more objects.
- The name of an attribute is composed of the name of an object class followed by the string "Ptr" if and only if the attribute value is intended to identify a specific object class.
- If an attribute is intended to identify different object classes, a descriptive name is given to that attribute and a description is provided in the attribute behaviour.
- The name of an attribute ends in the string "Id" if and only if the attribute value is intended to identify the name of an object, in which case this attribute should be the first one listed, should use ASN.1 NameType and should not be used to convey other information.
- The name of an attribute is composed of the name of an object class followed by the string "Id" if and only if the attribute value is intended to identify the name of the object class holding that attribute.

4 General Overview

The following information model diagrams have been drawn for the purpose of clarifying the relations between the different object classes of the model.

1) Entity-relationship models showing the relations of the different managed objects.

2) Inheritance Hierarchy showing how managed objects are derived from each other (i.e. the different paths of inherited characteristics of the different managed objects).

These diagrams are only for clarification. The formal specification in terms of GDMO templates and ASN.1 type definitions are the relevant information for implementations.

4.1 Entity-relationship models

The following conventions (see figure 1) are used in the diagrams:

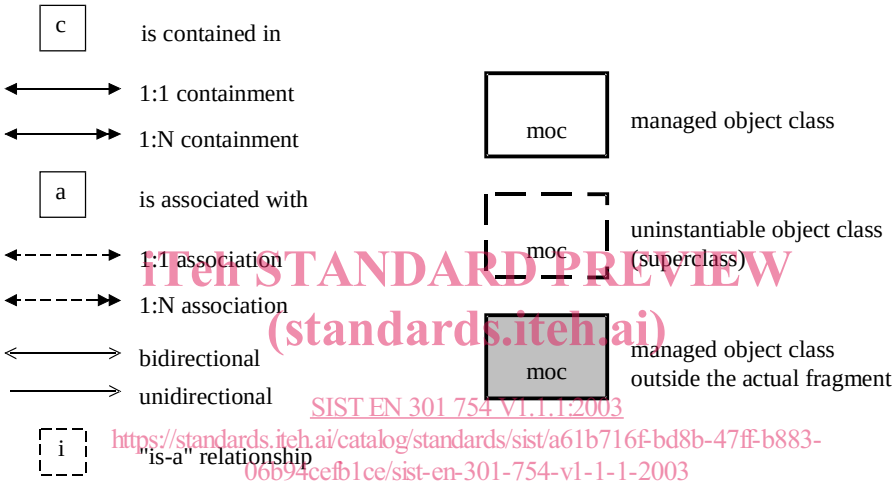
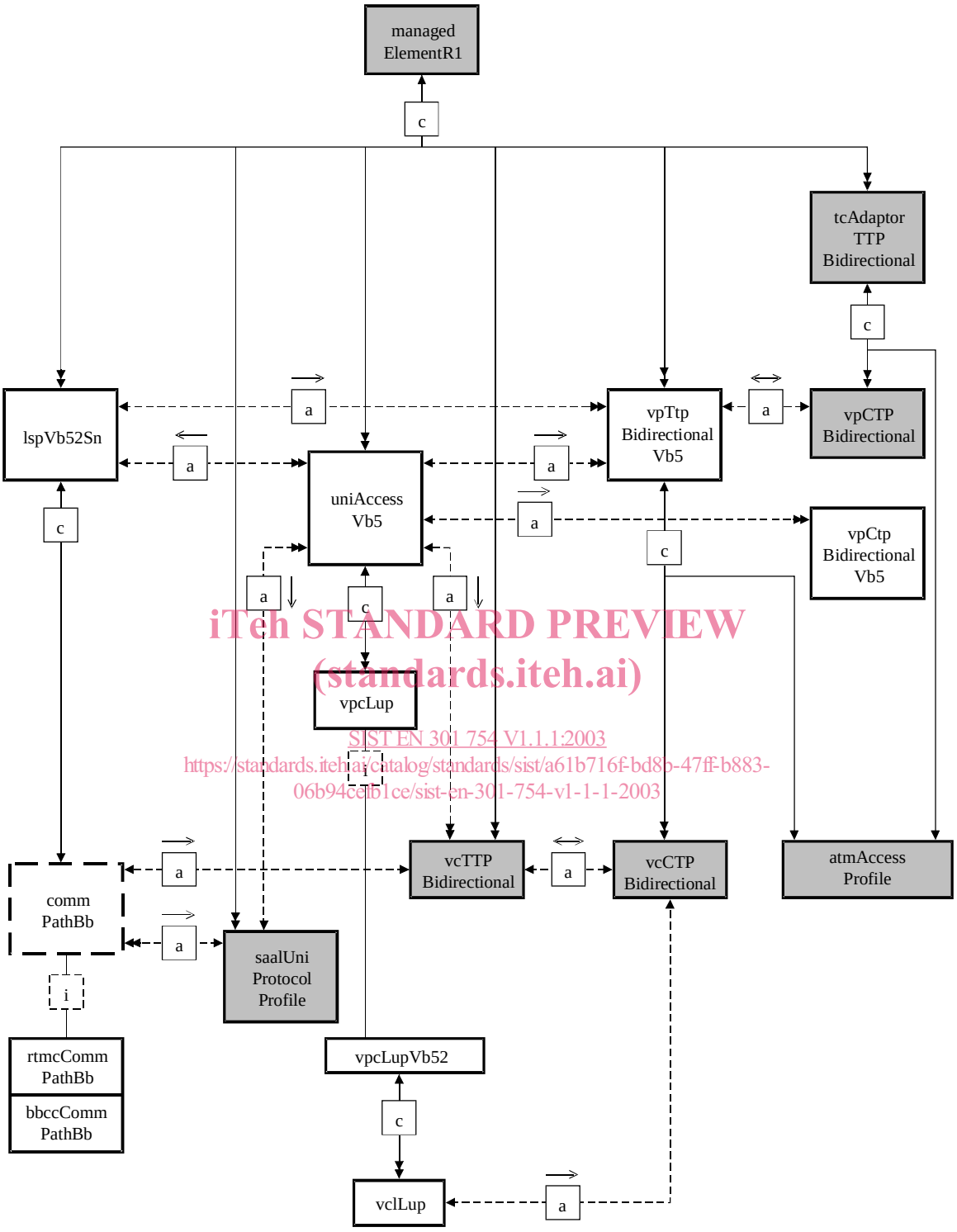


Figure 1: Conventions used in diagrams for Entity-relationship models

Where the directionality of containment is not clear, it can be identified by implications since the root class is unique.

4.1.1 Entity relationship diagram for the service node



NOTE: Not all object classes are shown in this diagram as some object classes are reused unchanged from ITU-T Recommendation I.751 [7].

Figure 2: Entity-relationship diagram - Service node