



SLOVENSKI STANDARD

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Telecommunications Management Network (TMN); Information models and protocols for the management and control of the Asynchronous Transfer Mode (ATM) switching network element; Part 1: Q3 interface specification

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European Standard (Telecommunications series)

**Telecommunications Management Network (TMN);
Information models and protocols for the management and
control of the Asynchronous Transfer Mode (ATM)
switching network element;
Part 1: Q3 interface specification**

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Foreword

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

The present document is part 1 of a multi-part EN covering Telecommunications Management Network (TMN); Information models and protocols for the management and control of the Asynchronous Transfer Mode (ATM) switching network element, as identified below:

Part 1: "Q3 interface specification"

NOTE: Other parts will be defined later.

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Date of adoption of this EN:	18 December 1998
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1 Scope

The present document specifies the Q3 interface between an Asynchronous Transfer Mode (ATM) switch and the Telecommunications Management Network (TMN) for the support of configuration, fault and performance management functions. The interface specified is that between TMN network elements or Q-adapters which interface to TMN Operations Systems (OSs) without mediation and between OSs and mediation devices, as defined in ITU-T Recommendation M.3010 [5]. Fault and performance management together include both passive monitoring of reports and active fault isolation.

The configuration by management of channels for signalling, including those for B-ISDN signalling, is within the scope of the present document. The management of broadband customer administration and the configuration for call routing including that for interworking with narrowband switches for both incoming and outgoing interfaces is also within the scope of the present document.

An ATM switch may include ATM crossconnect functionality, but this is specified by reference to EN 300 820-1 [22] or the ITU-T Recommendation I.751 [4] and by importing the relevant classes of managed objects where appropriate.

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.

The management of ATM Adaptation Layers (AALs) which are only used in the user plane is outside the scope of the present document since the broadband switch management has no visibility of ATM adaptation for the user plane. Management of AAL5 and the Signalling ATM Adaptation Layer (SAAL) is within the scope since these are used in the control plane.

Security management is outside the scope of the present document.

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2 References **(standards.iteh.ai)**

References may be made to:

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- a) specific versions of publications (identified by date of publication, edition number, version number, etc.), in which case, subsequent revisions to the referenced document do not apply; or
- b) all versions up to and including the identified version (identified by "up to and including" before the version identity); or
- c) all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or
- d) publications without mention of a specific version, in which case the latest version applies.

A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

2.1 Normative references

- [1] ITU-T Recommendation I.311 (1993): "B-ISDN general network aspects".
- [2] ITU-T Recommendation I.363.5 (1996): "B-ISDN ATM Adaptation Layer specification: Type 5 AAL".
- [3] ITU-T Recommendation I.610 (1992): "B-ISDN operation and maintenance principles and functions".
- [4] ITU-T Recommendation I.751 (1997): "Asynchronous transfer mode management of the network element view".
- [5] ITU-T Recommendation M.3010 (1995): "Principles for a Telecommunications management network".

- [6] ITU-T Recommendation M.3100 (1995): "Generic network information model".
- [7] ITU-T Recommendation Q.2110 (1994): "B-ISDN ATM adaptation layer - service specific connection oriented protocol (SSCOP)".
- [8] ITU-T Recommendation Q.2130 (1994): "B-ISDN signalling ATM adaptation layer - Service specific coordination function for support of signalling at the user network interface (SSFC at UNI)".
- [9] ITU-T Recommendation Q.2140 (1995): "B-ISDN ATM adaptation layer - Service specific coordination function for signalling at the network node interface (SSFC at NNI)".
- [10] ITU-T Recommendation Q.2761 (1995): "Functional description of the B-ISDN user part (B-ISUP) of signalling system No. 7".
- [11] ITU-T Recommendation Q.2762 (1995): "General Functions of messages and signals of the B-ISDN user part (B-ISUP) of Signalling System No. 7".
- [12] ITU-T Recommendation Q.2763 (1995): "Signaling System No. 7 B-ISDN User Part (B-ISUP) - Formats and codes".
- [13] ITU-T Recommendation Q.2764 (1995): "Signalling system No. 7 B-ISDN User Part (B-ISUP) - Basic call procedures".
- [14] ITU-T Recommendation Q.2931 (1995): "Digital Subscriber Signalling System No. 2 (DSS 2) - User-Network Interface (UNI) layer 3 specification for basic call/connection control".
- [15] ITU-T Recommendation Q.824.6 (1998): "Broadband Switch Management".
- NOTE: ITU-T Recommendation Q.824.6 will be published shortly.
- [16] ITU-T Recommendation X.720 | ISO/IEC 10165-1 (1992): "Information technology - Open Systems Interconnection - Structure of management information: Management information model".
- [17] ITU-T Recommendation X.721 | ISO/IEC 10165-2 (1992): "Information technology - Open Systems Interconnection - Structure of management information: Definition of management information".
- [18] ITU-T Recommendation X.731 | ISO/IEC 10164-2 (1992): "Information technology - Open Systems Interconnection - Systems Management: State management function".
- [19] ITU-T Recommendation X.732 | ISO/IEC 10164-3 (1992): "Information technology - Open Systems Interconnection - Systems Management: Attributes for representing relationships".
- [20] ITU-T Recommendation Q.821 (1992): "Stage 2 and stage 3 description for the Q3 interface - Alarm surveillance".
- [21] ETS 300 469: "Broadband Integrated Services Digital Network (B-ISDN); Asynchronous Transfer Mode (ATM); Management of the network element view [ITU-T Recommendation I.751 (1996)]".
- [22] EN 300 820-1: "Network Aspects (NA); Management information model for the X-type interface between Operation Systems (OSs) of a Virtual Path (VP)/Virtual Channel (VC) cross connected network; Part 1: Configuration management aspects".

2.2 Informative references

- [23] ITU-T Recommendation Q.811: "Lower layer protocol profiles for the Q3 X interfaces".
- [24] ITU-T Recommendation Q.812: "Upper layer protocol profiles for the Q3 and X interfaces".
- [25] ITU-T Recommendation G.773: "Protocol suites for Q-interfaces for management of transmission systems".
- [26] ITU-T Recommendation G.784: "Synchronous digital hierarchy (SDH) management".

- [27] ITU-T Recommendation Q.822 (1993): "Stage 1, stage 2 and stage 3 description for the Q3 interface - Performance Management".
- [28] ITU-T Recommendation I.361: "B-ISDN ATM layer specification".
- [29] ATM Forum Specification af-nm-0027.000 (1995): "CMIP Specification for the M4 interface".

3 Definitions and abbreviations

3.1 Definitions

See the identically numbered part of ITU-T Recommendation Q.824.6 [15] for the content here.

3.2 Abbreviations

See the identically numbered part of ITU-T Recommendation Q.824.6 [15] for the content here.

3.3 Conventions

See the identically numbered part of ITU-T Recommendation Q.824.6 [15] for the content here.

4 Information model diagrams

See the identically numbered part of ITU-T Recommendation Q.824.6 [15] for the content here.

4.1 Entity-relationship models

See the identically numbered part of ITU-T Recommendation Q.824.6 [15] for the content here.

4.1.1 ATM generic modelling

See the identically numbered part of ITU-T Recommendation Q.824.6 [15] for the content here.

4.1.2 ATM interworking and adaptation layer modelling

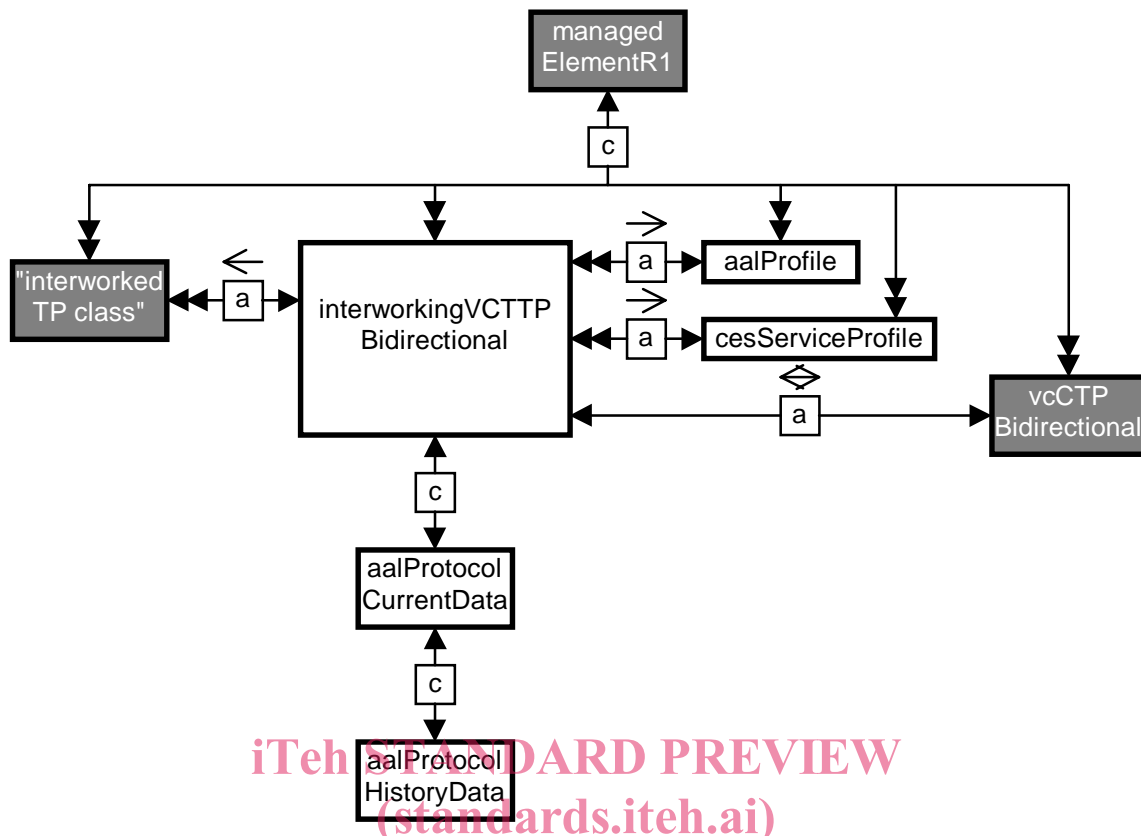


Figure 1: Entity relationship diagram - broadband customer administration

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A `interworkingVcTtpBidirectional` object represents a point in the managed system where the interworking of a service, for example frame relay, or the underlying physical infrastructure, for example DS1/E1, takes place. The "interworked TP class" is a generic managed object class that represents the service that is interworked.

4.1.3 Broadband customer administration modelling

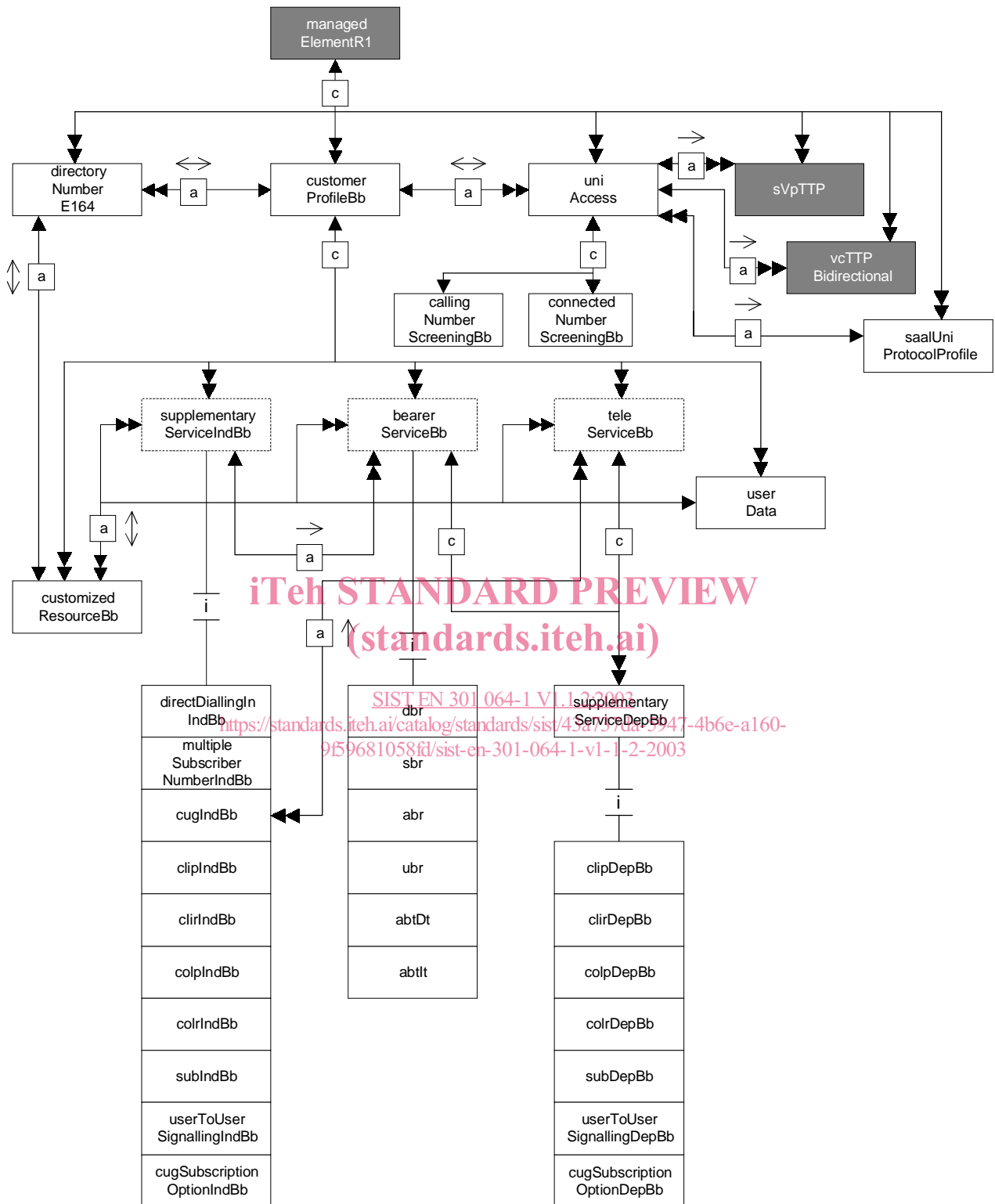


Figure 2: Entity relationship diagram - broadband customer administration