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Signalizacijski protokoli in komutacija (SPS) - Vmesnik Q3 v krajevni centrali (LE) za upravljanje in konfiguriranje vmesnikov V5 in pridruženih uporabniških profilov - 1. del: Specifikacija vmesnika Q3

Signalling Protocols and Switching (SPS) - Q3 interface at the Local Exchange (LE) for configuration management of V5 interfaces and associated customer profiles; Part 1: Q3 interface specification

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Signalling Protocols and Switching (SPS); Q3 interface at the Local Exchange (LE) for configuration management of V5 interfaces and associated customer profiles; Part 1: Q3 interface specification

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Signalling Protocols and Switching (SPS) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS is part 1 of a multi-part standard covering the Q3 interface specification at the Local Exchange (LE) for configuration management of V5 interfaces and associated customer profiles as described below:

Part 1: "Q3 interface specification";

Part 2: "Managed Object Conformance Statement (MOCS) proforma specification".

The following multi-part standards are directly related to this ETS:

ETS 300 376: "Q3 interface at the Access Network (AN) for configuration management of V5 interfaces and associated user ports";

ETS 300 378: "Q3 interface at the Access Network (AN) for fault and performance management of V5 interfaces and associated user ports";

ETS 300 379: "Q3 interface at the Local Exchange (LE) for for fault and performance management of V5 interfaces and associated customer profiles".

Transposition dates	
Date of latest announcement of this ETS (doa):	31 March 1995
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	30 September 1995
Date of withdrawal of any conflicting National Standard (dow):	30 September 1995

Introduction

Customer administration is a management activity that the network operator performs in order to exchange with the customer all the customer related management data and functions required to offer a telecommunications service and to exchange with the network all the customer related management data and functions necessary for the network to produce that telecommunications service.

It is considered that the customer's terminal equipment can be connected directly to the Local Exchange (LE) or via a V5 interface.

In a wide sense, this could include interactions for the purpose of service provision management, configuration administration, fault administration, charging (including detailed billing) administration, complaints administration, quality of service administration, traffic measurement administration etc. In this ETS, however, only customer administration in the more traditional sense of service provision and service configuration has been included.

In particular, the tasks to be performed in the LE to provide service for customers which are connected via a V5 interface to the LE are considered.

Administration of V5 interface related data is a management activity that the network operator performs in order to configure initially or to reconfigure a V5 interface to enable and maintain the service offering for the customers connected.

An agreement was reached to consider all items concerning configuration management of V5 interfaces. This covers:

- the labelling of a V5 interface with protocol version and provisioning variant;
- a switch-over possibility between V5 interface datasets with different provisioning variants and protocol versions for reconfiguration of a V5 interface;
- allocation of communication and bearer channels for a V5 interface;
- handling of customer port related data relevant for the LE;
- administrative blocking of user ports within a V5 interface;
- association of user ports to a specific V5 interface;
- marking of ISDN user port B-channels as unavailable when used for the permanent line service in the AN;
- upgrading a V5.1 interface to a V5.2 interface.

1 Scope

This European Telecommunication Standard (ETS) specifies the Q3 interface between a Local Exchange (LE) and the Telecommunications Management Network (TMN) for the support of configuration management functions for V5 interfaces, as described in ETS 300 324-1 [2] and ETS 300 347-1 [3], and their associated customer profiles. The management of transmission, media and services which are not related to V5 interfaces is outside the scope of this ETS.

The Q3 interface is the TMN interface between Network Elements (NEs) or Q-adapters which interface to Operations Systems (OSs) without mediation and between OSs and mediation devices. The location of the Q3 interface is illustrated in annex G of ETS 300 376-1 [4].

Generic modelling of leased line ports which are associated with a V5 interface is within the scope of this ETS, but the traffic from these ports can only be associated with 64 kbit/s bearer channels on the V5 interface.

The definition of OS functionality, and the specification of Qx interfaces and proprietary interfaces are outside the scope of this ETS.

Existing protocols are used where possible, and the focus of this ETS is on defining the object models.

Although security management is excluded from this ETS, any aspects of security relating to configuration management are included as an integral part of configuration management.

NOTE: Configuration management includes provisioning and the provisioning activity may include testing, but this testing is not included in this ETS. It is included in the specification relating to fault and performance management, ETS 300 379-1 [6].

2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] I-ETS 300 291 (1995): "Network Aspects (NA); Functional specification of Customer Administration (CA) on the Operations Systems/Network Element (OS/NE) interface".

[2] ETS 300 324-1 (1994): "Signalling Protocols and Switching (SPS); V interfaces at the digital Local Exchange (LE); V5.1 interface for the support of Access Network (AN); Part 1: V5.1 interface specification".

[3] ETS 300 347-1 (1994): "Signalling Protocols and Switching (SPS); V interfaces at the digital Local Exchange (LE); V5.2 interface for the support of Access Network (AN); Part 1: V5.2 interface specification".

[4] ETS 300 376-1 (1994): "Signalling Protocols and Switching (SPS); Q3 interface at the Access Network (AN) for configuration management of V5 interfaces and associated user ports; Part 1: Q3 interface specification".

[5] ETS 300 378-1: "Signalling Protocols and Switching (SPS); Q3 interface at the Access Network (AN) for fault and performance management of V5 interfaces and associated user ports; Part 1: Q3 interface specification".

[6] ETS 300 379-1: "Signalling Protocols and Switching (SPS); Q3 interface at the Local Exchange (LE) for fault and performance management of V5 interfaces and associated customer profiles; Part 1: Q3 interface specification".

[7] CCITT Recommendation M.3010 (1992): "Principles for a telecommunications management network".

[8] CCITT Recommendation M.3100 (1992): "Generic network information model".

[9] ITU-T Recommendation Q.811 (1993): "Lower layer protocol profiles for the Q3 interface".

[10] ITU-T Recommendation Q.812 (1993): "Upper layer protocol profiles for the Q3 interface".

[11] CCITT Recommendation X.208 (1988): "Specification of Abstract Syntax Notation One (ASN.1)".

[12] CCITT Recommendation X.711 (1991): "Common management information protocol definition for CCITT applications".

[13] CCITT Recommendation X.720 | ISO/IEC 10165-1 (1992): "Information technology - Open systems interconnection - Structure of management information: Management information model".

[14] CCITT Recommendation X.721 | ISO/IEC 10165-2 (1992): "Information technology - Open systems interconnection - Structure of management information: Definition of management information".

[15] CCITT Recommendation X.730 | ISO/IEC 10164-1 (1992): "Information technology - Open systems interconnection - Systems management: Object management function".

[16] CCITT Recommendation X.731 | ISO/IEC 10164-2 (1992): "Information technology - Open systems interconnection - Systems management: State management function".

[17] CCITT Recommendation X.732 | ISO/IEC 10164-3 (1992): "Information technology - Open systems interconnection - Systems management: Attributes for representing relationships".

3 Definitions

For the purposes of this ETS, the following definitions apply:

Access Network (AN): See ETS 300 324-1 [2].

B-channel number: Identifies a B-channel on the ISDN basic User-Network Interface (UNI) and ISDN primary rate UNI.

bearer channel: See ETS 300 324-1 [2].

Bearer Channel Connection (BCC): See ETS 300 347-1 [3].

Communication channel (C-channel): See ETS 300 324-1 [2].

Communication path (C-path): See ETS 300 324-1 [2].

control protocol: See ETS 300 324-1 [2].

D-channel signalling type (Ds-type) data: ISDN D-channel signalling type data with Service Access Point Identifier (SAPI) not equal to 16, and not equal to 32 to 62 (see ETS 300 324-1 [2], subclause 8.4).

envelope function address: See ETS 300 324-1 [2].

frame type (f-type) data: ISDN D-channel data with SAPI in the range from 32 to 62 (see ETS 300 324-1 [2], subclause 8.4).

layer 3 address: See ETS 300 324-1 [2].

Local Exchange (LE): See ETS 300 324-1 [2].

Operations System (OS): See CCITT Recommendation M.3010 [7].

packet type (p-type) data: ISDN D-channel data with SAPI equal to 16 (see ETS 300 324-1 [2], subclause 8.4).

Permanent line (PL): See ETS 300 324-1 [2].

protection protocol: See ETS 300 347-1 [3].

provisioning variant: See ETS 300 324-1 [2].

semi-permanent leased line: See ETS 300 324-1 [2].

time slot number: See ETS 300 324-1 [2].

V5 interface: See ETS 300 324-1 [2].

V5 time slot: Is an object class representing a 64 kbit/s channel of a V5 interface that is used as bearer or communication channel. It is a subclass of "CCITT Recommendation M.3100:1992":connectionTerminationPointBidirectional.

V5 Trail Termination Point (TTP): Is an object class representing a 2 Mbit/s interface that is used as V5.1 interface or as part of a V5.2 interface. It is a subclass of "CCITT Recommendation M.3100:1992":trailTerminationPointBidirectional.

virtual access channel: Is an object class representing an individual ISDN B-/D-channel of an ISDN access port, or an individual channel of a digital access port, or the bearer channel for an analogue access port. It is a subclass of "I-ETS 300 291":accessChannel.

virtual access port: Is an object class representing an image of the customer access port which is located in an AN and connected to the LE via V5 interface. It is a subclass of "I-ETS 300 291":accessPort and used for provisioning services to the customer. This object class is subclassed for the different types of customer access ports.

4 Abbreviations

For the purposes of this ETS, the following abbreviations apply:

AN	Access Network
ASN.1	Abstract Syntax Notation One (see CCITT Recommendation X.208 [11])
BCC	Bearer Channel Connection
C-channel	Communication channel
C-path	Communication path
CTP	Connection Termination Point
Ds-type	D-channel signalling type
DS	Default Standby
ET	Exchange Termination