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Vmesniki V digitalnega storitvenega vozliġļ a (SN) - Vmesniki na referenļ ni toļ ki VB5.2 za podporo ġirokopasovnih ali kombiniranih ozkopasovnih in ġirokopasovnih dostopovnih omreġij (AN) - 2. del: Izjava o skladnosti izvedbe protokola (PICS) - Proforma specifikacije

V interfaces at the digital Service Node (SN); Interfaces at the VB5.2 reference point for the support of broadband or combined narrowband and broadband Access Networks (ANs); Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification

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V interfaces at the digital Service Node (SN); Interfaces at the VB5.2 reference point for the support of broadband or combined narrowband and broadband Access Networks (ANs); Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification

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Contents

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Signalling Protocol and Switching (SPS).

The present document is part 2 of a multi-part EN covering V interfaces at the digital Service Node (SN); Interfaces at the VB5.2 reference point for the support of broadband or combined narrowband and broadband Access Networks (ANs), as identified below:

Part 1: "Interface specification";

Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";

Part 3: "Test Suite Structure and Test Purposes (TSS&TP)";

Part 4: "Abstract Test Suites (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT)".

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Introduction

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a telecommunication specification. Such a statement is called a Protocol Implementation Conformance Statement (PICS).

1 Scope

The present document provides the Protocol Implementation Conformance Statement (PICS) proforma for the V interfaces at the digital Service Node (SN) Interfaces at VB5.2 reference point for the support of broadband or combined narrowband and broadband Access Networks defined in EN 301 217-1 [4] in compliance with the relevant requirements, and in accordance with the relevant guidance given in ISO/IEC 9646-7 [6] and ETS 300 406 [2].

It details in tabular form the implementation options, i.e. the optional functions additional to those which are mandatory to implement.

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

[1] ETS 300 404 (1997): "Broadband Integrated Services Digital Network (B-ISDN); B-ISDN Operation And Maintenance (OAM) principles and functions".

[2] ETS 300 406 (1995): "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

[3] EN 301 005-1 (V1.1): "V interfaces at the digital Service Node (SN); Interface at the VB5.1 reference point for the support of broadband or combined narrowband and broadband Access Network (AN); Part 1: Interface specification".

[4] EN 301 217-1 (V1.1): "V interfaces at the digital Service Node (SN); Interfaces at the VB5.2 reference point for the support of broadband or combined narrowband and broadband Access Networks (ANs); Part 1: Interface specification".

[5] ISO/IEC 9646-1 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

[6] ISO/IEC 9646-7 (1995): "Information technology - Open Systems Interconnection -; Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

[7] ITU-T Recommendation G.703: "Physical/electrical characteristics of hierarchical digital interfaces".

[8] ITU-T Recommendation G.957: "Optical interfaces for equipments and systems relating to the synchronous digital hierarchy".

[9] ITU-T Recommendation I.356 (1996): "B-ISDN ATM layer cell transfer performance".

[10] ITU-T Recommendation I.371 (1996): "Traffic control and congestion control in B-ISDN".

[11] ITU-T Recommendation I.610 (1995): "B-ISDN Operation and maintenance principles and functions abstracts".

[12] ITU-T Recommendation I.732 (1996): "Functional characteristics of ATM equipment".

[13] ITU-T Recommendation Q.967-1: "V-interfaces at the service node (SN): VB5.1 reference point specification".

[14] ITU-T Recommendation Q.2931 (1995): "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".

[15] ITU-T Recommendation Q.2961.1 (1995): "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. 2 (DSS2); Additional traffic parameters: Additional signalling capabilities to support traffic parameters for the tagging option and the sustainable cell rate parameter set".

[16] ITU-T Recommendation Q.2961.2 (1997): "Digital Subscriber Signalling System No. 2 (DSS 2) - Additional traffic parameters: Support of ATM Transfer capability in the broadband bearer capability information element.

[17] ITU-T Recommendation Q.2961.3 (1997): "Digital Subscriber Signalling System No. 2 (DSS 2) - Additional traffic parameters: Signalling capabilities to support traffic parameters for the available bit rate (ABR) ATM transfer capability".

[18] ITU-T Recommendation Q.2961.4 (1997): "Digital Subscriber Signalling System No. 2 (DSS 2) - Additional traffic parameters: Signalling capabilities to support traffic parameters for the ATM Block Transfer (ABT) ATM transfer capability".

[19] ITU-T Recommendation Q.2961.5: "DSS2 cell delay variation tolerance indication".

NOTE 1: Not yet published.

[20] ITU-T Recommendation Q.2961.6: "Digital Subscriber Signalling System No. 2 (DSS 2) - Additional traffic parameters: Additional signalling procedures for the support of the SBR2 and SBR3 ATM transfer capabilities".

NOTE 2: Not yet published.

[21] ITU-T Recommendation Q.2962 (1998): "Digital Subscriber Signalling System No. 2 - Connection characteristics negotiation during call/connection establishment phase".

[22] The ATM Forum af-tm-0056.000: "Traffic Management Specification 4.0".

3 Definitions and abbreviations

3.1 Definitions

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

- terms defined in EN 301 217-1 [4] and EN 301 005-1 [3];
- terms defined in ISO/IEC 9646-1 [5] and in ISO/IEC 9646-7 [6].

In particular, the following terms defined in ISO/IEC 9646-1 [5] apply:

Protocol Implementation Conformance Statement (PICS): statement made by the supplier of an implementation or system claimed to conform to a given specification, stating which capabilities have been implemented. The ICS can take several forms: protocol ICS, profile ICS, profile specific ICS, information object ICS, etc

ICS proforma: document, in the form of a questionnaire, which when completed for an implementation or system becomes an ICS

Protocol ICS (PICS): ICS for an implementation or system claimed to conform to a given protocol specification

Static conformance review: review of the extent to which the static conformance requirements are met by the Implementation Under Test (IUT), accomplished by comparing the PICS with the static conformance requirements expressed in the relevant standard(s) (see ISO/IEC 9646-1 [5])

3.2 Abbreviations

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

AAL1	ATM Adaptation Layer type 1
AAL5	ATM Adaptation Layer type 5
ABR	Available Bit Rate
ABT	ATM Block Transfer
AIS	Alarm Indication Signal
AN	Access Network
ATC	ATM Transfer Capability
ATM	Asynchronous Transfer Mode
B-AN	Broadband Access Network
B-BCC	Broadband Bearer Connection Control
B-ISDN	Broadband Integrated Services Digital Network
B-UNI	Broadband User Network Interface
CDVT	Cell Delay Variation Tolerance
DBR	Deterministic Bit Rate
DT	Delayed Transmission
EFCI	Explicit Forward Congestion Indication
GFC	Generic Flow Control
ICS	Implementation Conformance Statement
ID	Identification
IUT	Implementation Under Test
LSP	Logical Service Port
NNI	Network-to-Network Interface
NPC	Network Parameter Control
OAM	Operations Administration and Maintenance
PDH	Plesiochronous Digital Hierarchy
PICS	Protocol Implementation Conformance Statement
ptm	point to multipoint
ptp	point to point
QoS	Quality of Service
RDI	Remote Defect Indication
RTMC	Real Time Management Co-ordination (protocol)
SBR	Statistical Bit Rate
SCS	System Conformance Statement
SDH	Synchronous Digital Hierarchy
SN	Service Node
SSCF	Service Specific Co-ordination Function
SSCOP	Service Specific Connection Oriented Protocol
STM	Synchronous Transport Module
SUT	System Under Test
TC	Termination Convergence
UNI	User Network Interface
UPC	Usage Parameter Control
VC	Virtual Channel
VCCT	Virtual Channel Connection Termination
VCE	Virtual Channel Entity
VCI	Virtual Channel Identifier
VCME	Virtual Channel Multiplex Entity
VP	Virtual Path
VPC	Virtual Path Connection
VPCI	Virtual Path Connection Identifier
VPCT	Virtual Path Connection Termination
VPE	Virtual Path Entity
VPI	Virtual Path Identifier
VPME	Virtual Path Multiplex Entity

4 Conformance to this PICS proforma specification

If it claims to conform to the present document the actual PICS proforma to be filled in by a supplier shall be technically equivalent to the text of the PICS proforma given in annex A, and shall preserve the numbering/naming and ordering of the proforma items.

An PICS which conforms to the present document shall be a conforming PICS proforma completed in accordance with the guidance for completion given in clause A.1.

Annex A (normative): Protocol ICS proforma for EN 301 217-1

A.1 Guidance for completing the PICS proforma

A.1.1 Purposes and structure

The purpose of this PICS proforma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in EN 301 217-1 [4] may provide information about the implementation in a standardized manner.

The PICS proforma is subdivided into subclauses for the following categories of information:

- guidance for completing the PICS proforma;
- identification of the implementation;
- identification of the protocol;
- global statement of conformance.

A.1.2 Abbreviations and conventions

The PICS proforma contained in this annex is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7 [6].

Item column

The item column contains a number which identifies the item in the table.

Item description column

The item description column describes in free text each respective item (e.g. parameters, timers, etc.). It implicitly means "is <item description> supported by the implementation?".

Status column

The following notations, defined in ISO/IEC 9646-7 [6], are used for the status column:

m	mandatory - the capability is required to be supported.
o	optional - the capability may be supported or not.
n/a	not applicable - in the given context, it is impossible to use the capability.
x	prohibited (excluded) - there is a requirement not to use this capability in the given context.
o.i	qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies an unique group of related optional items and the logic of their selection which is defined immediately following the table.
ci	conditional - the requirement on the capability ("m", "o", "x" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying an unique conditional status expression which is defined immediately following the table.

Reference column

The reference column makes reference to EN 301 217-1 [4] and EN 301 005-1 [3], except where explicitly stated otherwise.

Support column

The support column shall be filled in by the supplier of the implementation. The following common notations, defined in ISO/IEC 9646-7 [6], are used for the support column:

Y or y	supported by the implementation
N or n	not supported by the implementation
N/A, n/a or -	no answer required (allowed only if the status is n/a, directly or after evaluation of a conditional status)

If this PICS proforma is completed in order to describe a multiple-profile support in a system, it is necessary to be able to answer that a capability is supported for one profile and not supported for another. In that case, the supplier shall enter the unique reference to a conditional expression, preceded by "?" (e.g. ?3). This expression shall be given in the space for comments provided at the bottom of the table. It uses predicates defined in the SCS, each of which refers to a single profile and which takes the value TRUE if and only if that profile is to be used.

EXAMPLE 1: ?3: IF prof1 THEN Y ELSE N

It is also possible to provide a comment to an answer in the space provided at the bottom of the table.

NOTE: As stated in ISO/IEC 9646-7 [6], support for a received PDU requires the ability to parse all valid parameters of that PDU. Supporting a PDU while having no ability to parse a valid parameter is non-conformant. Support for a parameter on a PDU means that the semantics of that parameter are supported.

References to items

For each possible item answer (answer in the support column) within the PICS proforma a unique reference exists, used, for example, in the conditional expressions. It is defined as the table identifier, followed by a solidus character "/", followed by the item number in the table. If there is more than one support column in a table, the columns are discriminated by letters (a, b, etc.), respectively.

EXAMPLE 2: A.5/4 is the reference to the answer of item 4 in table 5 of annex A.

EXAMPLE 3: A.6/3b is the reference to the second answer (i.e. in the second support column) of item 3 in table 6 of annex A.

Values allowed column

The values allowed column contains the type, the list, the range, or the length of values allowed. The following notations are used:

- range of values: <min value> .. <max value>;

EXAMPLE 4: 5 .. 20.

- list of values: <value1>, <value2>, ..., <valueN>;

EXAMPLE 5: 2, 4, 6, 8, 9.

EXAMPLE 6: '1101'B, '1011'B, '1111'B.

EXAMPLE 7: '0A'H, '34'H, '2F'H.

- list of named values: <name1>(<val1>), <name2>(<val2>), ..., <nameN>(<valN>;

EXAMPLE 8: reject(1), accept(2).