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Part 3: Protocol Implementation Conformance Statement (PICS)
proforma specification

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Network Aspects (NA) Technical Committee of the European Telecommunications Standards Institute (ETSI).

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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 an Implementation Conformance Statement (ICS).

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1 Scope

This European Telecommunication Standard (ETS) provides the Protocol Implementation Conformance Statement (PICS) proforma for the Asynchronous Transfer Mode (ATM) layer protocol defined in ETS 300 298-1 [1] and ETS 300 298-2 [2] in compliance with the relevant requirements, and in accordance with the relevant guidance given in ISO/IEC 9646-7 [5] and ETS 300 406 [3].

2 Normative references

This ETS incorporates by dated or 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 part of ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1]   ETS 300 298-1 (1995): "Broadband Integrated Services Digital Network (B-ISDN); Asynchronous Transfer Mode (ATM); Basic characteristics and functional specification of ATM; Part 1: B-ISDN ATM functional specification".

[2]   ETS 300 298-2 (1995): "Broadband Integrated Services Digital Network (B-ISDN); Asynchronous Transfer Mode (ATM); Basic characteristics and functional specification of ATM; Part 2: B-ISDN ATM layer specification".

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

[4]   ISO/IEC 9646-1 (1995): "Information technology; Open systems interconnection; Conformance testing methodology and framework; Part 1: General concepts".

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

3 Definitions and abbreviations

3.1 Definitions

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

-     terms defined in ETS 300 298-1 [1] and in ETS 300 298-2 [2]; and

-     terms defined in ISO/IEC 9646-1 [4] and in ISO/IEC 9646-7 [5].

In particular, the following terms defined in ISO/IEC 9646-1 [4] apply:

Implementation Conformance Statement (ICS): A 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: A document, in the form of a questionnaire, which when completed for an implementation or system becomes an ICS.

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

3.2 Abbreviations

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

ATM   Asynchronous Transfer Mode
CLP   Cell Loss Priority
GFC   Generic Flow Control
HEC   Header Error Control
ICS   Implementation Conformance Statement
IUT   Implementation Under Test
NNI   Node to Node Interface
PICS   Protocol Implementation Conformance Statement
PT   Payload Type
SUT   System Under Test
UNI   User Network Interface
VCI   Virtual Channel Identifier
VPI   Virtual Path Identifier

4 Conformance to this ICS proforma specification

If it is claimed to conform to this part of ETS, the actual ICS proforma to be filled in by a supplier shall be technically equivalent to the text of the ICS proforma in annex A, and shall preserve the numbering/naming and ordering of the proforma items.

An ICS which conforms to this part of ETS shall be a conforming ICS proforma completed in accordance with the instructions for completion given in clause A.1.

Annex A (normative): PICS proforma for ETS 300 298 parts 1 and 2

Notwithstanding the provisions of the copyright clause related to the text of this ETS, ETSI grants that users of this ETS may freely reproduce the PICS proforma in this annex so that it can be used for its intended purposes and may further publish the completed PICS.

A.1 Guidance for completing the PICS proforma

A.1.1 Purpose and structure

The purpose of this PICS proforma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in ETS 300 298-1 [1] and ETS 300 298-2 [2] may provide information about the implementation in a standardized manner.

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

- instructions for completing the PICS proforma;
- identification of the implementation;
- identification of the protocol;
- PICS proforma tables;
- 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 [5].

Item column

It contains a number which identifies the item in the table.

Item description column

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

Reference column

It gives reference to the clause or subclause of ETS 300 298-1 and of ETS 300 298-2 in which the item is defined. Reference to the two parts of the ETS are indicated as follows:

[1]   ETS 300 298-1 (1995): "Broadband Integrated Services Digital Network (B-ISDN); Asynchronous Transfer Mode (ATM); Basic characteristics and functional specification of ATM; Part 1: B-ISDN ATM functional specification";

[2]   ETS 300 298-2 (1995): "Broadband Integrated Services Digital Network (B-ISDN); Asynchronous Transfer Mode (ATM); Basic characteristics and functional specification of ATM; Part 2: B-ISDN ATM layer specification".

Status column

The following notations, defined in ISO/IEC 9646-7 [5], 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.
c.i	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. For nested conditional expressions, the syntax "IF … THEN (IF … THEN … ELSE…) ELSE …" shall be used to avoid ambiguities.

Values allowed column

This column contains the values or ranges of values allowed:

xx .. yy	indicates all the values from xx to yy;
xx/yy	indicates either xx or yy.

Values supported column

The support column shall be filled in by the supplier of the implementation. In this column, the values or the ranges of values supported by the implementation shall be indicated.

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 [5], 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 ICS 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 is expressed below the table, in space provided. It uses predicates defined in the ICS, 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: ?3:   IF prof1 THEN Y ELSE N

It is possible to provide a comment to an answer by giving a footnote in space left below the table.

> NOTE: As stated in ISO/IEC 9646-7 [5], support for a 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-conforming. Support for a parameter on a PDU means that the semantics of that parameter are supported.

Reference to items

For each possible item answer (answer in the support column) within the ICS proforma exists a unique reference, 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 shall be discriminated by letters (a, b, etc.), respectively.

EXAMPLE 1:   A.5/4 is the reference to the answer of item 4 in table 5 of annex A.

EXAMPLE 2:   A.6/3b is the reference to the second answer (i.e. the second support column) of item 3 in table 6 of annex A.

Prerequisite line

A prerequisite line takes the form: Prerequisite:<predicate>.

A prerequisite line after a clause or table title indicates that the whole clause or the whole table is not required to be completed if the predicate is FALSE.

A.1.3   Instructions for completing the ICS proforma

The supplier of the implementation shall complete the ICS proforma in each of the spaces provided. If necessary, the supplier may provide additional comments separately.

More detailed instructions are given at the beginning of the different subclauses of the ICS proforma.

A.2   Identification of the implementation

Identification of the Implementation Under Test (IUT) and the system in which it resides (the System Under Test (SUT)) should be filled in so as to provide as much detail as possible regarding version numbers and configuration options.

The product supplier information and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the ICS should be named as the contact person.

A.2.1   Date of the statement

....

A.2.2   Implementation Under Test (IUT) identification

IUT name:

....

....

IUT version:

....

A.2.3   System Under Test (SUT) identification

SUT name:

....

....

Hardware configuration:

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....

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Operating system:

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A.2.4 Product supplier

Name:

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Address:

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Facsimile number:

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E-mail address:

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Additional information:

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A.2.5 Client

Name:

……

Address:

……

……

……

Facsimile number:

……

E-mail address:

……

Additional information:

……

……

……

A.2.6 ICS contact person

Name:

………

Telephone number:

………

Facsimile number:

………

E-mail address:

………

Additional information:

………

………

………

A.3 Identification of the protocol

This ICS proforma applies to the following standards:

ETS 300 298-1 (1995): "Broadband Integrated Services Digital Network (B-ISDN); Asynchronous Transfer Mode (ATM); Basic characteristics and functional specification of ATM; Part 1: B-ISDN ATM functional specification";

ETS 300 298-2 (1995): "Broadband Integrated Services Digital Network (B-ISDN); Asynchronous Transfer Mode (ATM); Basic characteristics and functional specification of ATM; Part 2: B-ISDN ATM layer specification".

A.4 PICS proforma tables

An explicit answer shall be entered, in each of the support or supported column boxes provided, using the notation described in subclause A.1.2.

A.4.1 Global statement of conformance

Are all mandatory capabilities implemented? (Yes/No) ……………..

> NOTE: Answering "No" to this question indicates non-conformance to the protocol specification. Non-supported mandatory capabilities are to be identified in the ICS, with an explanation of why the implementation is non-conforming, on pages attached to the ICS proforma.

A.4.2 User Network Interface (UNI) implementation

Prerequisite: <the SUT implements the ATM UNI>

A.4.2.1 Cell structure and encoding

Item	Item description	Reference	Status	Values allowed	Values supported	Support
ATM 1	Cell structure	2.1 [2]	m			
ATM 2	Cell header format	2.2 [2]	m			
ATM 3	Preassigned values of cell header	3.1.5 [1]/ 2.2.1 [2]	m			

A.4.2.2 Generic Flow Control (GFC) protocol

Item	Item description	Reference	Status	Values allowed	Values supported	Support
ATM 4	Uncontrolled transmission procedures (note)	3.4.4 [1]/ 2.2.2 [2]/ 4.1 [2]	m	0000	0000	
ATM 5	Controlled transmission procedures (note)	3.4.4 [1]/ 2.2.2 [2]/ 4.1 [2]	o			
NOTE:	The coding of the GFC field for the controlled transmission procedures are specified in 2.2.2 [2] and is set for further study.					

A.4.2.3 Routing fields

Item	Item description	Reference	Status	Values allowed	Values supported	Support
ATM 6	VPI routing field (note 1)	2.2.3 [2]	m	0..255		
ATM 7	VCI routing field (notes 1 and 2)	2.2.3 [2]	m	0..65535		
ATM 8	Allocation of bits for routing	2.2.3 [2]	m			
ATM 9	Unallocated bits setting (note 3)	2.2.3 [2]	m	0		
NOTE 1:	This range of values is the maximum one. A smaller range is allowed.					
NOTE 2:	VCI values 0..31 are not available for user connections.					
NOTE 3:	Bits not utilized by the user or the network.					

A.4.2.4 Payload Type (PT), Cell Loss Priority (CLP) and preassigned combination

Item	Item description	Reference	Status	Values allowed	Values supported	Support
ATM 10	PT field coding and handling	3.4.3 [1]/ 2.2.4 [2]	m			
ATM 11	CLP field coding and handling	3.4.2.3 [1]/ 2.2.5 [2]	m			
ATM 12	Preassigned combinations of VPI/VCI/PT/CLP values	2.2.3 [2]	m			

A.4.2.5 Header Error Control (HEC)

Item	Item description	Reference	Status	Values allowed	Values supported	Support
ATM 13	Use of the HEC field (note)	2.2.6 [2]	n/a			
NOTE:	HEC functions are the responsibility of the physical layer.					

A.4.3 Node to Node Interface (NNI) implementation

Prerequisite: <the SUT implements the ATM NNI>

A.4.3.1 Cell structure and encoding

Item	Item description	Reference	Status	Values allowed	Values supported	Support
ATM 14	Cell structure	2.1 [2]	m			
ATM 15	Cell header format	2.3 [2]	m			
ATM 16	Preassigned values of cell header	3.1.5 [1]/ 2.3.1 [2]	m			

A.4.3.2 Routing fields

Item	Item description	Reference	Status	Values allowed	Values supported	Support
ATM 17	VPI routing field (note 1)	2.3.2 [2]	m	0..4095		
ATM 18	VCI routing field (notes 1 and 2)	2.3.2 [2]	m	0..65535		
ATM 19	Allocation of bits for routing	2.3.2 [2]	m			
NOTE 1:	This range of values is the maximum one. A smaller range is allowed.					
NOTE 2:	VCI values 0..31 are not available for user connections.					

A.4.3.3 Payload Type (PT), Cell Loss Priority (CLP) and preassigned combination

Item	Item description	Reference	Status	Values allowed	Values supported	Support
ATM 21	PT field coding and handling	3.4.3 [1]/ 2.3.3 [2]	m			
ATM 22	CLP field coding and handling	3.4.2.3 [1]/ 2.3.4 [2]	m			
ATM 23	Preassigned combinations of VPI/VCI/PT/CLP values	2.2.3 [2]	m			

A.4.3.4 Header Error Control (HEC)

Item	Item description	Reference	Status	Values allowed	Values supported	Support
ATM 24	Use of the HEC field (note)	2.2.6 [2]	n/a			
NOTE:	HEC functions are the responsibility of the physical layer.					

History

Document history			
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