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Network Aspects (NA); Connectionless Broadband Data Service (CBDS) over Asynchronous Transfer Mode (ATM); Framework and protocol specification at the User-Network Interface (UNI); Part 2: Connectionless Network Access Protocol (CLNAP) 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).

The present document is part 2 of a multi-part ETS covering the framework and protocol specification at the User-Network Interface (UNI) for the Connectionless Broadband Data Service (CBDS) over Asynchronous Transfer Mode (ATM), as identified below:

Part 1: "Specification";

Part 2: "**Connectionless Network Access Protocol (CLNAP) Protocol Implementation Conformance Statement (PICS) proforma specification**".

Transposition dates	
Date of adoption of this ETS:	6 February 1998
Date of latest announcement of this ETS (doa):	31 May 1998
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	30 November 1998
Date of withdrawal of any conflicting National Standard (dow):	30 November 1998

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 second part of ETS 300 478 provides the Implementation Conformance Statement (ICS) proforma for the Connectionless Network Access Protocol (CLNAP) defined in ETS 300 478-1 [1] in compliance with the relevant requirements, and in accordance with the relevant guidance given in ISO/IEC 9646-7 [4] and ETS 300 406 [2].

2 Normative references

This part of 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 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 300 478-1 (1995): "Network Aspects (NA); Connectionless Broadband Data Service (CBDS) over Asynchronous Transfer Mode (ATM); Framework and protocol specification at the User-Network Interface (UNI); Part 1: Specification".

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

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

[4] 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 part of ETS, the following definitions apply:

- terms defined in ETS 300 478-1 [1];
- terms defined in ISO/IEC 9646-1 [3] and in ISO/IEC 9646-7 [4].

In particular, the following terms defined in ISO/IEC 9646-1 [3] 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:

CLNAP	Connectionless Network Access Protocol
ICS	Implementation Conformance Statement
IUT	Implementation Under Test
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
SCS	System Conformance Statement
SUT	System Under Test

4 Conformance to this ICS proforma specification

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

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

Annex A (normative): PICS proforma for ETS 300 478

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 ETS 300 478-1 [1] 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 ICS proforma;
- identification of the implementation;
- identification of the protocol;
- global statement of conformance;
- ICS proforma tables.

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 [4].

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?".

Status column

The following notations, defined in ISO/IEC 9646-7 [4], 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

It gives reference to ETS 300 478-1 [1], 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 [4], 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 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: ?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 [4], 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-conformant. Support for a parameter on a PDU means that the semantics of that parameter are supported.

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: 5 .. 20

- list of values: <value1>, <value2>, ..., <valueN>
  example: 2, 4, 6, 8, 9
  example: '1101'B, '1011'B, '1111'B
  example: '0A'H, '34'H, 2F'H

- list of named values: <name1>(<val1>), <name2>(<val2>), ..., <nameN>(<valN>
  example: reject(1), accept(2)

- length: size (<min size> .. <max size>)
  example: size (1 .. 8)

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.

References to items

For each possible item answer (answer in the support column) within the ICS 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 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. in 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. In particular, 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. If necessary, the supplier may provide additional comments separately.

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:

.....

.....

.....

Operating system:

.....

A.2.4 Product supplier

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

A.2.5 Client

Name:

.....

Address:

.....

.....

.....

Telephone number:

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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 standard:

ETS 300 478-1 (December 1997): "Network Aspects (NA); Connectionless Broadband Data Service (CBDS) over Asynchronous Transfer Mode (ATM); Framework and protocol specification at the User-Network Interface (UNI); Part 1: Specification".

A.4 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.5 Major capabilities

Table A.1

Item	Capability	Reference	Status	Support
1	send CLNAP PDU	6	m	
2	receive CLNAP PDU	6	m	
3	ACE-compliant traffic shaping by the sending entity	4.8	o	
4	CRC generation	6.3.12	o	

A.6 Transmission capabilities

A.6.1 Major capabilities

A.6.1.1 CBDS traffic shaping

A.6.1.1.1 Capabilities

Prerequisite: A.1/3 -- ACE compliant traffic shaping

Table A.2

Item	Capability	Reference	Status	Support
1	control of Sustained Information Rate (SIR)	6	o	
2	control of maximum burst length (CMAX)	6	o	
3	control of CLNAP PDUs per Time Unit (PPTU)	4.8	o	

A.6.1.1.2 Protocol parameters

Prerequisite: A.1/3 -- ACE compliant traffic shaping

Table A.3

Item	Parameter	Reference	Values	
			Allowed	Supported
1	SIR range	4.8	all	
2	upper limit on CMAX (maximum burst size)	4.8	all	
3	PPTU range	4.8	all	

A.6.2 The CLNAP PDU

A.6.2.1 Fields

Table A.4

Item	PDU	Reference	Length	Sending		Receiving	
				Status	Support	Status	Support
1	Destination Address	6.3.1	8 octets	m		m	
2	Source Address	6.3.2	8 octets	m		m	
3	HLPI	6.3.3	6 bits	m		m	
4	PAD Length	6.3.4	2 bits	m		m	
5	QOS	6.3.5	4 bits	m		m	
6	CIB	6.3.6	1 bit	m		m	
7	HEL	6.3.7	3 bits	m		m	
8	Reserved	6.3.8	16 bits	m		m	
9	Header Extension	6.3.9	{0;4;8; 12;16;20} octets	m		m	
10	User Information	6.3.10	0..9188 octets	m		m	
11	PAD	6.3.11	0..3 octets	m		m	
12	CRC	6.3.12	32 bits	c401		m	

c401: IF A.1/4 THEN m ELSE n/a -- major capability of CRC generation

A.6.2.1.1 Address fields

Table A.5

Item	Field	Reference	Length	Sending		Receiving	
				Status	Support	Status	Support
1	Destination address: "address-type" subfield	6.3.1	4 bits	m		m	
2	Destination address: "address" subfield	6.3.1	60 bits	m		m	
3	Source address: "address-type" subfield	6.3.2	4 bits	m		m	
4	Source address: "address" subfield	6.3.2	60 bits	m		m	

A.6.2.2 Parameters

A.6.2.2.1 Parameters of the non-address fields

Table A.6

Item	Parameter	Reference	Sending values		Receiving values	
			Allowed	Supported	Status	Support
1	HLPI	6.3.3	{1;2;43} ∪ [48..63]		{1;2;43} ∪ [48..63]	
2	PAD Length	6.3.4	all		all	
3	QOS	6.3.5	all		all	
4	CIB	6.3.6	all		all	
5	HEL	6.3.7	[0..5]		[0..5]	
6	Reserved	6.3.8	all		all	
7	Header Extension	6.3.9	all		all	
8	User Information	6.3.10	all		all	
9	PAD	6.3.11	0		0	
10	CRC	6.3.12	all		all	

A.6.2.2.2 Parameters of the address fields

Table A.7

Item	Parameter	Reference	Sending values		Receiving values	
			Allowed	Supported	Status	Support
1	Destination Address: "address-type" subfield	Annex A	0b1100 or 0b1110		0b1100 or 0b1110	
2	Destination Address: "address" subfield	Annex A	see note		see note	
3	Source Address: "address-type" subfield	Annex A	0b1100		0b1100	
4	Source Address: "address" subfield	Annex A	see note		see note	
NOTE: Any BCD-encoded integer number, up to 15 digits long, right-padded with the 0b1111 pattern.						

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