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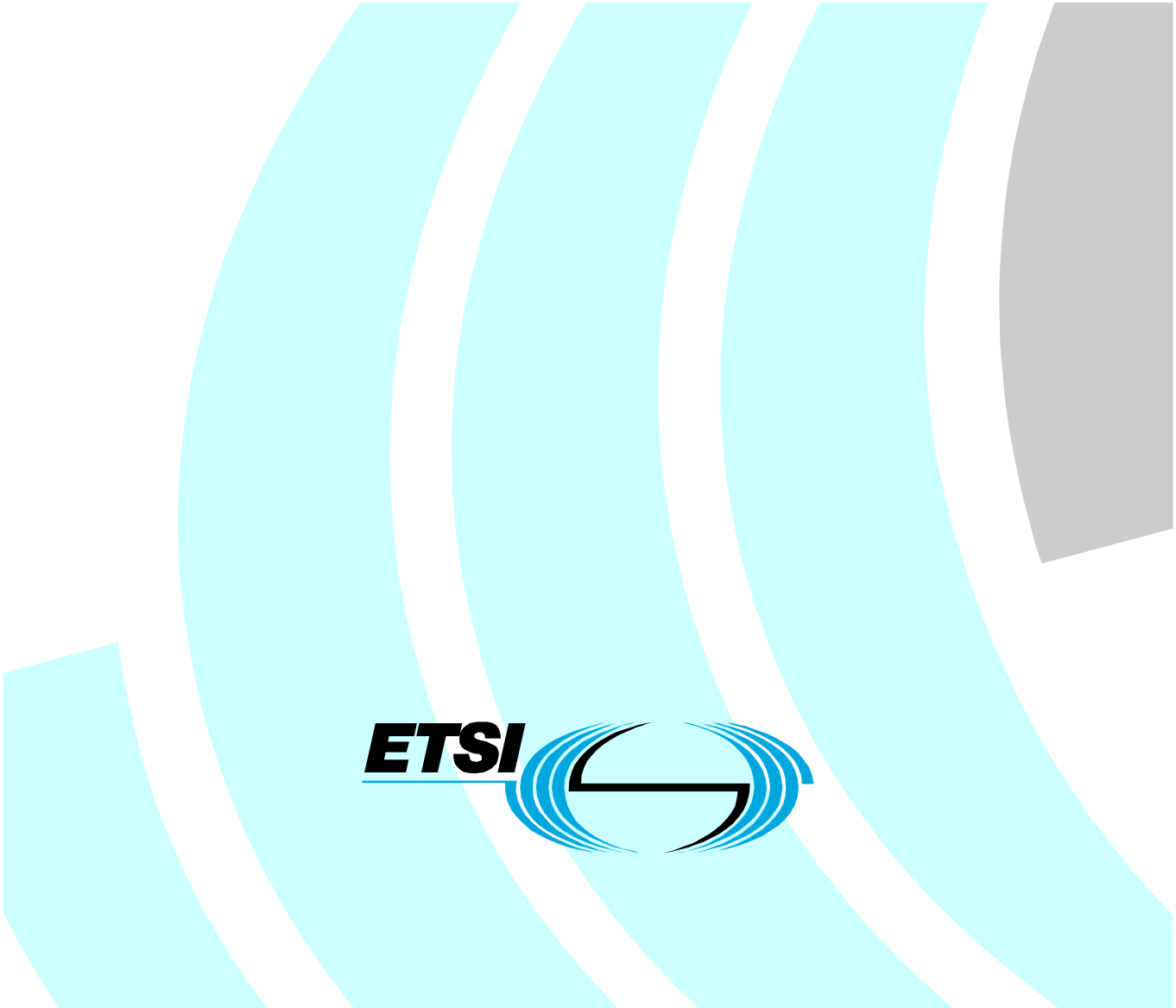
Technical Specification

Broadband Radio Access Networks (BRAN);
HIPERACCESS;
Conformance testing for the Packet based Convergence Layer
Part 2: Ethernet Service Specific
Convergence Sublayer (SSCS)
Sub-part 1: Protocol Implementation Conformance
Statement (PICS) proforma



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Foreword

This Technical Specification (TS) has been produced by ETSI Project Broadband Radio Access Networks (BRAN).

The present document is part 2, sub-part 1 of a multi-part deliverable. Full details of the entire series can be found in part 1, sub-part 1 [6].

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. When such a statement is based on a protocol, it is called PICS.

1 Scope

The present document provides the PICS proforma for BRAN HIPERACCESS Ethernet Service Specific Convergence Sublayer (SSCS), as defined in TS 102 117-2 [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].

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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] ETSI TS 102 117-2 (V1.1.1): "Broadband Radio Access Networks (BRAN); HIPERACCESS; Packet based Convergence Layer; Part 2: Ethernet Service Specific Convergence Sublayer (SSCS)".

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

[3] ISO/IEC 9646-1 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

[4] ISO/IEC 9646-7 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

[5] IETF RFC 2684 (1991): "Multiprotocol Encapsulation over ATM Adaptation Layer 5".

[6] ETSI TS 102 148-1-1(V1.1.1): " Broadband Radio Access Networks (BRAN); HIPERACCESS; Conformance testing for the Packet based Convergence Layer; Part 1: Common Part; Sub-part 1: Procotol Implementation Conformance Statement (PICS) proforma".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, terms and definitions given in TS 102 117-2 [1], ISO/IEC 9646-1 [3], ISO/IEC 9646-7 [4] and the following apply:

Implementation Conformance Statement (ICS): statement made by the supplier of an implementation or system claimed to conform to a given specification, stating which capabilities have been implemented

NOTE: 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

3.2 Abbreviations

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

AP	Access Point
ATM	Asynchronous Transfer Mode
CPCS	Common Part Convergence Sublayer
ICS	Implementation Conformance Statement
PDU	Protocol Data Unit
PICS	Protocol ICS
IUT	Implementation Under Test
SUT	System Under Test
SSCS	Service Specific Convergence Sublayer
TS	Technical Specification

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.

A 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 TS 102 117-2

A.1 Guidance for completing the 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 TS 102 117-2 may provide information about the implementation in a standardized manner.

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

- Guidance for completing the PICS proforma;
- Identification of the implementation;
- Identification of the protocol;
- Global statement of conformance;
- Roles;
- Major capabilities;
- PDUs and PDU parameters.

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.

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, 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.

i irrelevant (out-of-scope) - capability outside the scope of the reference specification. No answer is requested from the supplier.

NOTE 1: This use of "i" status is not to be confused with the suffix "i" to the "o" and "c" statuses above.

Reference column

The reference column makes reference to TS 102 117-2, 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, 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

NOTE 2: As stated in ISO/IEC 9646-7, 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.

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 values supported 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 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.

Prerequisite line

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

A prerequisite line after a clause or before a 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 PICS proforma

The supplier of the implementation shall complete the PICS 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 clause A.1.2.

If necessary, the supplier may provide additional comments in space at the bottom of the tables or separately.

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

A.2.1 Date of the statement

Table A.1: Date of statement

Date of statement		
Day	**Month**	**Year**

A.2.2 Implementation Under Test (IUT) identification

The supplier of the implementation shall enter information necessary to uniquely identify the IUT in table A.2.

Table A.2: IUT identification

IUT identification	
IUT name	
IUT version	

A.2.3 System Under Test (SUT) identification

The supplier of the implementation shall enter information necessary to uniquely identify the SUT in table A.3.

Table A.3: SUT identification

SUT identification	
SUT name	
Hardware configuration	
Operating system	

A.2.4 Product supplier

Table A.4: Product supplier

Product supplier	
Name	
Address	
Phone No.	
Fax No.	
E-mail address	
Additional information	

A.2.5 Client

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

Table A.5: Client

Client	
Name	
Address	
Phone No.	
Fax No.	
E-mail address	
Additional information	

A.2.6 PICS contact person

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

Table A.6: Contact person

Contact person	
Name	
Address	
Phone No.	
Fax No.	
E-mail address	
Additional information	

A.3 Identification of the protocol

The supplier of the implementation shall enter the title, reference number and date of the publication of the Specification to which conformance is claimed, in table A.7.

Table A.7: Identification of protocol

Identification of protocol	
Title of specification	Broadband Radio Access Networks (BRAN); HIPERACCESS; Packet based Convergence Layer; Part 2: Ethernet Service Specific Convergence Sublayer (SSCS)
Reference no.	TS 102 117-2
Date of Publication	

A.4 Global statement of conformance

Table A.8: Global statement of conformance

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 Roles

Table A.9: Roles

Item	Role	Reference	Status	Support
1	Access Terminal AT	4	o.1	
2	Access Point AP	4	o.1	
o.1:	It is mandatory to support at least one of these items.			

Comments: According to the answer to items of table A.9 of this proforma, the completed PICS becomes a PICS relative to an AP or to an AT. If you want to describe both AP and AT, then two copies of this PICS proforma must be filled in, one copy for AP, another one for AT.

A.6 PICS for Access Terminal (AT) or Access Point (AP)

This clause contains the PICS proforma tables describing the protocol related either to the Access Terminal (AT) or to the Access Point (AP). They need to be completed according to the type of implementation declared in table A.9.

The Service Specific Convergence Sublayer protocol behaves according to RFC 2684. The PICS proforma is to be derived from the AAL5 PICS.

The following tables outline main RFC 2684 applicable to the Ethernet Service Specific Convergence Sublayer protocol

A.6.1 Ethernet Service Specific Convergence Sublayer procedures

Table A.10: SSCS multiplexing procedures for Ethernet support

Item	Procedures	Reference	Status	Support
1	LLC encapsulation (Multiple protocols over one single ATM Virtual Connection)	4.2	m	
2	VC multiplexing (A single protocol over one ATM Virtual Connection)	4.2	m	

A.6.2 PDU description

Table A.11: AAL5 CPCS_PDU

Item	PDU	Sending			Receiving		
		Reference	Status	Support	Reference	Status	Support
1	CPCS_PDU	RFC 2684	m		RFC 2684	m	

Comments:

A.6.3 CPCS PDU parameters

Table A.12: CPCS_PDU parameters

Item	Capabilities	Reference	Status	Support
1	CPCS-PDU payload, includes header (Up to 2^16 octets-1)	RFC 2684	m	
2	PAD (0-47 octets)	RFC 2684	m	
3	CPCS-UU (1 octet)	RFC 2684	m	
4	CPI (1 octet)	RFC 2684	m	
5	Length (2 octets)	RFC 2684	m	
6	CRC (4 octets)	RFC 2684	m	

Comments:

History

Document history		
V1.1.1	November 2002	Publication