Standard ECMA-297
December 1999

ECMA

Standardizing Information and Communication Systems

Broadband Integrated Services Digital Network (B-ISDN) and Broadband Private Integrated Services Network (B-PISN) - Digital Subscriber Signalling System No. two (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7) - Prenegotiation - Part 2: Protocol Implementation Conformance Statement (PICS) Proforma Specification

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IW ECMA-297.DOC 03-01-00 12,19

Brief History

This Standard is one of a series of ECMA Standards defining services and signalling protocols applicable to Broadband Private Integrated Services Networks (B-PISNs). The series uses B-ISDN concepts as developed by ITU-T and conforms to the framework of International Standards for Open Systems Interconnection as defined by ISO/IEC.

This Standard has been produced by ECMA TC32-TG15 in collaboration with ETSI Technical Committee Signalling Protocols and Switching (SPS) under ETSI work item DEN/SPS-05131-2.

The Standard is part 2 of a multi-part standard covering the Digital Subscriber Signalling System No. 2 (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7) protocol specification for Broadband Integrated Services Digital Network (B-ISDN) and Broadband Private Integrated Services Network (B-PISN) Prenegotiation, as described below:

Part 1: "Protocol specification";

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

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

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

Part 3 and part 4 will only be produced by ETSI as EN 302 091-3 and EN 302 091-4 respectively.

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a given Open Systems Interconnection (OSI) protocol. Such a statement is called a Protocol Implementation Conformance Statement (PICS).

The Standard is based upon the practical experience of ECMA member companies and the results of their active and continuous participation in the work of ISO/IEC JTC1, ITU-T, ETSI and other international and national standardization bodies. It represents a pragmatic and widely based consensus.

This ECMA Standard is technically aligned with EN 302 091-2 published by ETSI in November 1999.

This Standard has been adopted by the ECMA General Assembly of December 1999.

Table of contents

1 Scope

This Standard is applicable to the Prenegotiation protocol at the Q_B, S_B, T_B and co-incident S_B/T_B reference points within, between and at the access to Broadband Private Integrated Services Networks and within, between and at the access to public Broadband Integrated Services Digital Networks.

This Standard provides the Protocol Implementation Conformance Statement (PICS) proforma for the Prenegotiation protocol as specified in ECMA-296 in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7.

2 Conformance

If it claims to conform to this Standard, 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 this Standard shall be a conforming PICS proforma completed in accordance with the guidance for completion given in clause A.1.

3 References

The following documents contain provisions which, through reference in this text, constitute provisions of this Standard.

- 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.

ECMA-296	Broadband Integrated Services Digital Network (B-ISDN) and Broadband Private Integrated Services Network (B-PISN) - Digital Subscriber Signalling System No. two (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7) - Prenegotiation - Part 1: Protocol Specification
ISO/IEC 9646-1	Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts
ISO/IEC 9646-7	Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements

4 Definitions

For the purposes of this Standard, the following definitions apply, in addition to those given in ECMA-296.

4.1 Protocol Implementation Conformance Statement (PICS)

A statement made by the supplier of an Open Systems Interconnection (OSI) implementation or system, stating which capabilities have been implemented for a given OSI protocol (see ISO/IEC 9646-1).

4.2 PICS proforma

A document, in the form of a questionnaire, designed by the protocol specifier or conformance test suite specifier, which, when completed for an OSI implementation or system becomes the PICS (see ISO/IEC 9646-1).

5 Abbreviations

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

ICS	Implementation Conformance Statement
IUT	Implementation Under Test
MC	Major Capabilities
MR	Messages Received
MT	Messages Transmitted
OSI	Open Systems Interconnection
PICS	Protocol Implementation Conformance Statement
PRN	Prenegotiation
R	Role
SCS	System Conformance Statement
SUT	System Under Test
TM	Timers

Annex A

(normative)

PICS proforma for ECMA-296

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 ECMA-296 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;
- Roles (Rs);
- Major Capabilities (MC);
- Application protocol data units;
- Timers (T);
- Interworking.

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.
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.

Reference column:

The reference column makes reference to ECMA-296, 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: ?3: IF prof1 THEN Y ELSE N

NOTE

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.

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 column boxes provided, using the notation described in subclause 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.

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:

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.....

Hardware configuration:

.....

.....

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Operating system:

.....

A.2.4 Product supplier

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

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.....

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A.2.5 Client

Name:

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Address:

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Telephone number:

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Facsimile number:

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E-mail address:

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Additional information:

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A.2.6 PICS contact person

Name:

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Address:

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Telephone number:

.....

Facsimile number:

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Additional information:

.....

.....

.....

A.3 Identification of the protocol

This PICS proforma applies to the following standard:

ECMA-296 Broadband Integrated Services Digital Network (B-ISDN) and Broadband Private Integrated Services Network (B-PISN) - Digital Subscriber Signalling System No. two (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7) - Prenegotiation - Part 1: Protocol 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 PICS, with an explanation of why the implementation is non-conforming, on pages attached to the PICS proforma.

A.5 Roles

Table A.1 - Roles

Item	Role	References	Condition	Status	Support
R1	Support of prenegotiation in terminal equipment (originating or terminating CC entity)	5.1		o	Yes[ ] No[ ]
R2	Support of prenegotiation in a network node (transit CC entity)	5.1		o	Yes[ ] No[ ]

A.6 Major Capabilities

Table A.2 - Major Capabilities

Item	Question/feature (Does the implementation ... ?)	References	Condition	Status	Support
MC1	Support signalling procedures for invocation of prenegotiation by an originating CC entity together with call establishment	9.2.1	R1	o.1	Yes[ ] No[ ] N/A[ ]
MC2	Support signalling procedures for invocation of prenegotiation by a terminating CC entity together with the first end-to-end response to call establishment	9.2.1	R1	o.1	Yes[ ] No[ ] N/A[ ]
MC3	Support signalling procedures for invocation of prenegotiation by an originating CC entity after the first end-to-end response to call establishment	9.2.1	R1	o.1	Yes[ ] No[ ] N/A[ ]
MC4	Support signalling procedures for invocation of prenegotiation by a terminating CC entity after the first end-to-end response to call establishment	9.2.1	R1	o.1	Yes[ ] No[ ] N/A[ ]
MC5	Support signalling procedures for invocation of prenegotiation independently, after call establishment	9.2.1	R1	o.1	Yes[ ] No[ ] N/A[ ]
MC6	Support signalling procedures for prenegotiation in a transit CC entity	9.3	R2	m	Yes[ ] N/A[ ]

o.1 Support of at least one of these options is required.

A.7 Application protocol data units

Table A.3 - APDUs transmitted

Item	Question/feature (Does the implementation support ... ?)	References	Condition	Status	Support
MT1	Sending of preNegotiate invoke	9.2.1	R1 OR R2	m	Yes[ ]
MT2	Sending of prenegotiationAlert invoke	9.2.2	R1R2	o m	Yes[ ] No[ ]
MT3	Sending of preNegotiate return result/error	9.2.2	R1 OR R2	m	Yes[ ]

Table A.4 - APDUs received

Item	Question/feature (Does the implementation support ... ?)	References	Condition	Status	Support
MR1	Receipt of preNegotiate return result/error	9.2.3	R1 OR R2	m	Yes[ ]
MR2	Receipt of a reject ADPU correlated to a preNegotiate invoke	9.2.1	MT1	m	Yes[ ] N/A[ ]
MR3	Receipt of preNegotiate invoke	9.2.2	R1 OR R2	o m	Yes[ ]
MR4	Receipt of prenegotiationAlert invoke	9.2.3	R1 OR R2	m	Yes[ ]
MR5	Receipt of a reject ADPU correlated to a prenegotiationAlert invoke	9.2.2	MT2	m	Yes[ ] N/A[ ]

A.8 Timers

Table A.5 - Timers

Item	Question/feature (Does the implementation ... ?)	References	Condition	Status	Support
TM1	Support timer T1	9.2.1.1	MT1	o	Yes[ ] No[ ] N/A [ ]
TM2	Support timer T2	9.2.3	MR4	o	Yes[ ] No[ ] N/A [ ]

A.9 Interworking

Table A.6 - Interworking

Item	Question/feature (Does the implementation ... ?)	References	Condition	Status	Support
IW1	Support interworking procedures in case of incoming calls from other networks not supporting prenegotiation	11.1	MC6	o	Yes[ ] No[ ] N/A [ ]
IW2	Support interworking procedures in case of outgoing calls to other networks not supporting prenegotiation	11.2	MC6	o	Yes[ ] No[ ] N/A [ ]

Annex B

(informative)

Bibliography

ETS 300 406 Methods for testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology

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