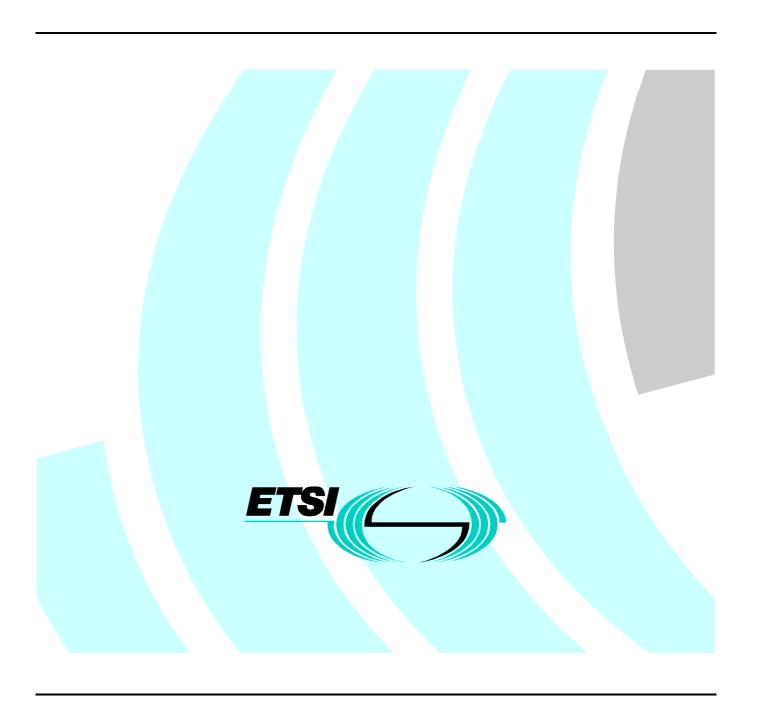# ETSI TS 101 522 V1.1.1 (2000-09)

Technical Specification

Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON); Protocol Implementation Conformance Statement (PICS) proforma for the support of control protocol for multimedia communication; Support of ITU-T Recommendation H.245

ETSI

Reference

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Foreword

This Technical Specification (TS) has been produced by ETSI Project Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON).

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).

1 Scope

The present document provides the Protocol Implementation Conformance Statement (PICS) proforma for the control protocol for multimedia communication as specified in ITU-T Recommendation H.245 [2] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [5].

The supplier of a protocol implementation which is claimed to conform to ITU-T Recommendation H.245 [2] is required to complete a copy of the PICS proforma provided in annex A of the present document and is required to provide the information necessary to identify both the supplier and the implementation.

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]   ITU-T Recommendation H.323 (Version 3,1999): "Packet-based multimedia communications systems".

[2]   ITU-T Recommendation H.245: "Control protocol for multimedia communication".

[3]   ITU-T Recommendation H.225.0 (Version 3, 1999): "Call signalling protocols and media stream packetization for packet-based multimedia communication systems".

[4]   ISO/IEC 9646-1 (1994): "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 the present document, the following terms and definitions apply:

- terms defined in ITU-T Recommendation H.323 [1];

- terms defined in ITU-T Recommendation H.245 [2];

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

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

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:

GK   GateKeeper
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 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):
PICS proforma for ITU-T Recommendation H.245

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 ITU-T Recommendation H.225.0 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;

- major capabilities;

- subsidiary capabilities;

- operations;

- arguments, results and errors;

- timers.

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 (for example 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 a 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 a 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.

Reference column

The reference column makes reference to ITU-T Recommendation H.225.0 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 "?" (for example ?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 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, 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 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 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 subclause A.1.2.

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

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 PICS 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 (if different from product supplier)

Name:

....

Address:

....

....

....

Telephone number:

....

Facsimile number:

....

E-mail address:

....

Additional information:

....

....

A.2.6   PICS contact person

(A person to contact if there are any queries concerning the content of the PICS)

Name:

....

Telephone number:

....

Facsimile number:

....

E-mail address:

....

Additional information:

....

....

....

A.3   PICS/System Conformance Statement (SCS)

Provide the relationship of the PICS with the SCS for the system.

A.4   Identification of the protocol

The PICS proforma applies to the following standard:

ITU-T Recommendation H.245: "Control protocol for multimedia communication".

A.5   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.6   Capabilities

A.6.1   Major capabilities

Table A.1: Major capabilities

Item	Procedure	H.245 References	Status	Support Y | N | n/a
MC 1	Supports H.245, Version 1	Annex D	o.1	
MC 2	Supports H.245, Version 2	Annex D	o.1	
MC 3	Supports H.245, Version 3	Annex D	o.1	
MC 4	Supports H.245, Version 4	Annex D	o.1	
MC 5	Supports H.245, Version 5	Annex D	o.1	
MC 6	Supports usage of Request messages	Annex A	m	
MC 7	Supports usage of Response messages	Annex A	m	
MC 8	Supports usage of Command messages	Annex A	m	
MC 9	Supports usage of Indication messages	Annex A	m	
Comments: o.1 one or more options shall be supported				

A.6.2 Subsidiary capabilities

Table A.2: Support of H.245 procedures

Item	Characteristics	H.245 References	Status	Support Y | N | n/a	Supported value
SC 1	Supports master slave determination procedures	C.2	m		
SC 2	Supports capability exchange procedures	C.3	m		
SC 3	Supports uni-directional logical channel signalling procedures	C.4	m		
SC 4	Supports bi-directional logical channel signalling procedures	C.5	m		
SC 5	Supports close logical channel procedures	C.6	m		
SC 6	Supports H.223 multiplex table procedures	C.7	o		
SC 7	Supports H.223 multiplex entry procedures	C.8	o		
SC 8	Supports mode request procedures	C.9	m		
SC 9	Supports procedures	C.10	o		
SC 10	Supports maintenance loop procedures	C.11	o		
Comments:					

A.6.3   Protocol data units

Table A.3: H.245 Message Support

Item	PDU	H.245 References	Status	Support Y | N | n/a
MS 1	Supports master-slave determination	5.1	m	
MS 2	- with clients	5.1	m	
MS 3	- with a GK	5.1	m	
MS 4	- with a GW	5.1	m	
MS 5	Supports master slave determination messages	B.1	m	
MS 6	Supports capability exchange	5.2	m	
MS 7	- with clients	5.2	m	
MS 8	- with a GK	5.2	m	
MS 9	- with a GW	5.2	m	
MS 10	Supports terminal capability set exchange	B.2.2	m	
MS 11	- can use capability table	B.2.2.1	m	
MS 12	- can use capability descriptors	B.2.2.2	m	
MS 13	- can indicate capabilities	B.2.2.3	m	
MS 14	- can indicate multiplex capabilities	B.2.2.4	m	
MS 15	- can indicate video capabilities	B.2.2.5	m	
MS 16	- can indicate audio capabilities	B.2.2.6	m	
MS 17	- can indicate data application capabilities	B.2.2.7	m	
MS 18	- can indicate encryption, authentication and integrity capabilities	B.2.2.8	m	
MS 19	- can indicate conference capabilities	B.2.2.9.	m	
MS 20	- can indicate user input capabilities	B.2.2.10	m	
MS 21	Supports logical channel signalling	5.3	m	
MS 22	- with clients	5.3	m	
MS 23	- with a GW	5.3	m	
MS 24	Supports bi-directional logical channel signalling	5.3	m	
MS 25	- with clients	5.3	m	
MS 26	- with a GW	5.3	m	
MS 27	Supports close logical channel signalling	5.4	m	
MS 28	- with clients	5.4	m	
MS 29	- with a GW	5.4	m	
MS 30	Supports logical channel signalling messages	B.3	m	
MS 31	- transmitting endpoint supports Request Channel Close message	H.323, Annex A	o	
MS 32	- endpoints support Request Channel Close Acknowledge message	H.323, Annex A	o	
MS 33	- receiving endpoint supports Request Channel Close Reject message	H.323, Annex A	o	
MS 34	- receiving endpoint supports Request Channel Close Release message	H.323, Annex A	o	
MS 35	Supports H.223 multiplex table signalling messages	B.4	x	
MS 36	Supports H.223 request multiplex table signalling messages	B.5	x	
MS 37	Supports audiovisual and data mode requests	5.6	o	
MS 38	- with clients	5.6	o	
MS 39	- with a GW	5.6	o	
MS 40	Supports request mode messages	B.6	m	
MS 41	- video request mode	B.6.1.1	o	
MS 42	- audio request mode	B.6.1.2	m	
MS 43	- data request mode	B.6.1.3	o	
MS 44	- encryption request mode	B.6.1.4	o	
MS 45	- transmitting endpoint supports Request Mode message	H.323, Annex A	o	
MS 46	- transmitting endpoint supports Request Mode Acknowledge message	H.323, Annex A	o	
MS 47	- receiving endpoint supports Request Mode Reject message	H.323, Annex A	o	
MS 48	- receiving endpoint supports Request Mode Release message	H.323, Annex A	o	
MS 49	Supports round trip delay mechanism	5.7	o	

Item	PDU	H.245 References	Status	Support Y | N | n/a
MS 50	- with clients	5.7	o	
MS 51	- with a GW	5.7	o	
MS 52	Supports round trip delay messages	B.7	o	
MS 53	- transmitting endpoint supports Round Trip Delay Request message	H.323, Annex A	o	
MS 54	- receiving endpoint supports Round Trip Delay Response message	H.323, Annex A	o	
MS 55	Support maintenance loops	5.8	o	
MS 56	- with clients	5.8	o	
MS 57	- with a GW	5.8	o	
MS 58	Supports maintenance loop messages	B.8	o	
MS 59	- endpoints support Media Loop Request message	H.323, Annex A	o	
MS 60	- endpoints support Maintenance Loop Request Acknowledge message	H.323, Annex A	o	
MS 61	- receiving endpoint supports Maintenance Loop Reject message	H.323, Annex A	o	
MS 62	- transmitting endpoint supports Maintenance Loop Command Off message	H.323, Annex A	o	
MS 63	Supports communications mode messages	B.9	o	
MS 64	- endpoints support conference mode commands of table A.11/H.323	H.323, Annex A	o	
MS 65	Supports conference request and response messages	B.10	o	
MS 66	- endpoints support conference request and response messages of table A.9/H.323	H.323, Annex A	o	
MS 67	Endpoints support optional H.245 commands of table A.10/H.323	H.323, Annex A	o	
MS 68	Endpoints support optional H.245 indications of table A.112/H.323	H.323, Annex A	o	

A.6.4   Timers

Table A.4: Support of timers in H.245 procedures

Item	Timer - Procedure	H.245 References	Status	Support Y | N | n/a	Supported value
TS 1	T106 - Master Slave Determination	III.1	m		
TS 2	T101 - Capability Exchange	III.1	m		
TS 3	T103 - Uni-directional and Bi-directional Logical Channel Signalling	III.1	m		
TS 4	T108 - Close Logical Channel	III.1	m		
TS 5	T104 - H.223 Multiplex Table	III.1	o		
TS 6	T109 - Mode Request	III.1	m		
TS 7	T105 - Round Trip Delay	III.1	o		
TS 8	T107 - Request Multiplex Entry	III.1	o		
TS 9	T102 - Maintenance Loop	III.1	o		
Comments:					

A.6.5   Counters

Table A.5: Support of counters in H.245 procedures

Item	Counter - Procedure	H.245 References	Status	Support Y | N | n/a	Supported value
CS1	N100 - Master Slave Determination	III.2	m		
Comments:					

History

Document history		
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