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

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## Foreword

This draft European Telecommunication Standard (ETS) has been produced by the Signalling Protocols and Switching (SPS) Technical Committee of the European Telecommunications Standards Institute (ETSI), and is now submitted for the Public Enquiry phase of the ETSI standards approval procedure.

This ETS is part 2 of a multi-part standard covering the Signalling System No.7 Transaction Capabilities (TC) version 2 as described below:

Part 1: "Protocol specification [ITU-T Recommendations Q.771 to Q.775 (1993), modified]";

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

Part 3: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification".

<b>Proposed transposition dates</b>	
Date of latest announcement of this ETS (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

## 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 given OSI protocol. Such a statement is called a Protocol Implementation Conformance Statement (PICS).

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## 1 Scope

This second part of ETS 300 287 provides the Protocol Implementation Conformance Statement (PICS) proforma for the Transaction Capabilities (TC) signalling protocol to be used in and between networks, for non-circuit related services which use Signalling System No.7 as specified in ETS 300 287-1 [1] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [3].

The supplier of a protocol implementation that is claimed to conform to ETS 300 287-1 [1] is required to complete a copy of the PICS proforma provided in annex A of this ETS and is required to provide the information necessary to identify both the supplier and the implementation.

## 2 Normative references

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

- [1] ETS 300 287-1: "Integrated Services Digital Network (ISDN); Signalling System No.7; Transaction Capabilities (TC) version 2; Part 1: Protocol specification [ITU-T Recommendations Q.771 to Q.775 (1993), modified]".
- [2] ISO/IEC 9646-1: "Information technology - Open systems interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [3] ISO/IEC 9646-7: "Information technology - Open systems interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

## 3 Definitions

For the purposes of this ETS, the definitions in ETS 300 287-1 [1], ISO/IEC 9646-1 [2] and ISO/IEC 9646-7 [3] apply. In particular, the following terms defined in ISO/IEC 9646-1 [2] 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 (PICS), profile ICS, profile specific ICS, and information object ICS.

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

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

## 4 Abbreviations

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

ASN.1	Abstract Syntax Notation one
BER	Basic Encoding Rules
c	Conditional
DTID	DestinationTransaction ID
ICS	Implementation Conformance Statement
ID	Identifier
ISDN	Integrated Services Digital Network
IUT	Implementation Under Test
m	Mandatory

n/a	Not Applicable
o	Optional
o.<n>	Optional, but, if chosen, support is required for either at least one or only one of the options in the group labelled by the same numeral <n>
OSI	Open Systems Interconnection
OTID	Originating Transaction ID
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
SCS	System Conformance Statement
SUT	System Under Test
TC	Transaction Capabilities
x	Excluded

## 5 Conformance

A PICS proforma that conforms to this PICS proforma specification shall be technically equivalent to annex A, and shall preserve the numbering and ordering of the items in annex A.

A PICS that conforms to this PICS proforma specification shall:

- a) describe an implementation which conforms to ETS 300 287-1 [1];
- b) be a conforming PICS proforma, which has been completed in accordance with the instructions for completion given in clause A.1;
- c) include the information necessary to uniquely identify both the supplier and the implementation.



## Annex A (normative): PICS proforma for ETS 300 287-1

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 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 300 287-1 [1] 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;
- explicit statements about the implemented capabilities.

#### 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 [3].

##### 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 [3], 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

The reference column gives reference to ITU-T Recommendations Q.771 to Q.775 as modified by ETS 300 287-1 [1], except where explicitly stated otherwise.

Note, however, that a reference merely indicates the place where the core of a description of an item can be found. Any additional information contained in ETS 300 287-1 [1] needs to be taken into account when making a statement about the conformance of that particular item.

## 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 [3], 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)

NOTE: As stated in ISO/IEC 9646-7 [3], 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 of a PDU implies that the semantics of that parameter are supported.

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 System Conformance Statement (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

## References to items

For each possible item answer (answer in the support column) within the PICS 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 are discriminated by letters, respectively.

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

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

### 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 boxes provided, using the notation described in subclause A.1.2.

If necessary, the supplier may provide additional comments in the 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 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**

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

**A.2.6 PICS contact person**

Name:

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

### **A.3 Identification of the protocol**

This PICS proforma applies to the following standard:

**ETS 300 287-1:** "Integrated Services Digital Network (ISDN); Signalling System No.7; Transaction Capabilities (TC) version 2; Part 1: Protocol specification [ITU-T Recommendations Q.771 to Q.775 (1993), modified]".

### **A.4 Global statement of conformance**

Does the implementation described in this PICS meet all the mandatory requirements of the referenced standard?

**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. Explanations may be entered at the bottom of each table or be attached to the PICS proforma.

The supplier of the implementation will have fully complied with the requirements for a statement of conformance by completing the tabulations contained in the following clause.

## A.5 Capabilities

This clause contains the core of the PICS proforma for TC as specified in ITU-T Recommendations Q.771 to Q.775 as modified by ETS 300 287-1 [1]. The proforma are presented in the form of tables.

NOTE: Since references are made to the tabular description, be aware that in the case of misalignment between the tabular and the ASN.1 description, the latter takes precedence over the tabular representation.

### A.5.1 Supported End of dialogue method

Table A.1

Item	Parameter	Reference	Status	Support
1	Prearranged end	Q.771 §3.1.2.2.2.4	o	
2	Basic end	Q.771 §3.1.2.2.2.4	o	
3	Abort by TC-user	Q.771 §3.1.2.2.2.4	o	

Comments:

### A.5.2 Supported Abort capability

Table A.2

Item	Parameter	Reference	Status	Support
1	Send Abort on reception of DTID empty	Q.774 table 7	o	
2	Send Abort on reception of corrupted Continue	Q.774 table 7	o	
3	Send Abort on reception of Begin with invalid IE	Q.774 table 7	o	
4	Send Abort on reception of Continue without DTID	Q.774 table 7	o	
5	Send Abort on reception of Continue with duplicated OTID	Q.774 table 7	o	
6	Send Abort on reception of Continue with duplicated DTID	Q.774 table 7	o	
7	Send Abort on reception of Continue with syntax error	Q.774 table 7	o	
8	Send Abort on reception of Unknown message	Q.774 table 7	o	
9	Send Abort on reception of message containing invalid tag (violation of BER)	Q.774 table 7	o	

Comments:

### A.5.3 Supported operation classes

Table A.3

Item	Parameter	Reference	Status		Support	
			S	R	S	R
1	Class 1	Q.771 §2.3.1.3	o	o		
2	Class 2	Q.771 §2.3.1.3	o	o		
3	Class 3	Q.771 §2.3.1.3	o	o		
4	Class 4	Q.771 §2.3.1.3	o	o		

Comments:

**A.5.4 Supported coding forms for Length of contents****Table A.4**

Item	Parameter	Reference	Status		Support	
			S	R	S	R
1	Short	Q.773 §4.1.2.3	o.1	m		
2	Long	Q.773 §4.1.2.3	o.1	c1		
3	Indefinite	Q.773 §4.1.2.3	o.1	m		

c1: IF A.7/13R THEN m ELSE o

o.1: at least one option shall be supported

Comments:

**A.5.5 Supported message types****Table A.5**

Item	Parameter	Reference	Status		Support	
			S	R	S	R
1	Unidirectional	Q.773 §4.2.1.1	c2	c3		
2	Begin	Q.773 §4.2.1.1	c4	c5		
3	End	Q.773 §4.2.1.1	c6	c7		
4	Continue	Q.773 §4.2.1.1	c6	c7		
5	Abort	Q.773 §4.2.1.1	c6	c7		

c2: IF A.7/11S THEN m ELSE x

c3: IF A.7/11R THEN m ELSE x

c4: IF A.7/12S THEN m ELSE x

c5: IF A.7/12R THEN m ELSE x

c6: IF A.5/2S THEN o ELSE x

c7: IF A.5/2R THEN o ELSE x

Comments:

**A.5.6 Supported component types****Table A.6**

Item	Parameter	Reference	Status		Support	
			S	R	S	R
1	Invoke	Q.773 §4.2.2.1	o	o		
2	Return result last	Q.773 §4.2.2.1	o	o		
3	Return result not last	Q.773 §4.2.2.1	o	o		
4	Return error	Q.773 §4.2.2.1	o	o		
5	Reject	Q.773 §4.2.2.1	o	o		

Comments:

**A.5.7 Supported capabilities**

**Table A.7**

Item	Parameter	Reference	Status		Support	
			S	R	S	R
1	User Cancellation	Q.771 §3.1.3.6	m			
2	Transport of appl. context	Q.771 §3.1.2	o	o		
3	Transport of user info	Q.771 §3.1.2	o	o		
4	Local operations	Q.773 §4.2.2.3	o	o		
5	Global operations	Q.773 §4.2.2.3	o	o		
6	Local errors	Q.773 §4.2.2.5	o	o		
7	Global errors	Q.773 §4.2.2.5	o	o		
8	Return message on error	Q.771 §3.1.2	o			
9	Grouping of components in 1 message	Q.771 §3.1.3.7	o	o		
10	Linked operations	Q.771 §2.3.1.3	o	o		
11	Unstructured dialogue	Q.771 §2.3.1.2.1	o	o		
12	Structured dialogue	Q.771 §2.3.1.2.2	o	o		
13	Transport of TC-User PDUs larger than 127octets	Q.773 §4.1.2.3	o	o		

Comments:

**A.5.8 Transaction portion fields**

**A.5.8.1 Unidirectional message type**

**Table A.8**

Item	Parameter	Reference	Status	Support
1	Message type	Q.773 §4.2.1.1	m	
2	Dialogue Portion	Q.773 §4.2.1.1	o	
3	One or more components	Q.773 §4.2.1.1	m	

Comments:

**A.5.8.2 Begin message type**

**Table A.9**

Item	Parameter	Reference	Status	Support
1	Message type	Q.773 §4.2.1.1	m	
2	Transaction ID	Q.773 §4.2.1.1	m	
3	Dialogue Portion	Q.773 §4.2.1.1	o	
4	One or more components	Q.773 §4.2.1.1	o	

Comments:



**A.5.8.3 End message type**

**Table A.10**

Item	Parameter	Reference	Status	Support
1	Message type	Q.773 §4.2.1.1	m	
2	Transaction ID	Q.773 §4.2.1.1	m	
3	Dialogue Portion	Q.773 §4.2.1.1	o	
4	One or more component	Q.773 §4.2.1.1	o	

Comments:

**A.5.8.4 Continue message type**

**Table A.11**

Item	Parameter	Reference	Status	Support
1	Message type	Q.773 §4.2.1.1	m	
2	Originating Transaction ID	Q.773 §4.2.1.1	m	
3	Destination Transaction ID	Q.773 §4.2.1.1	m	
4	Dialogue Portion	Q.773 §4.2.1.1	o	
5	One or more component	Q.773 §4.2.1.1	o	

Comments:

**A.5.8.5 Abort message type**

**Table A.12**

Item	Parameter	Reference	Status	Support
1	Message type	Q.773 §4.2.1.1	m	
2	Transaction ID	Q.773 §4.2.1.1	m	
3	P-Abort Cause	Q.773 §4.2.1.1	m	
4	Dialogue Portion	Q.773 §4.2.1.1	o	

Comments:

**A.5.9 Component portion fields**

**A.5.9.1 Invoke component**

**Table A.13**

Item	Parameter	Reference	Status	Support
1	Invoke ID	Q.773 §4.2.2.1	m	
2	Linked ID	Q.773 §4.2.2.1	o	
3	Operation Code	Q.773 §4.2.2.1	m	
4	Parameters	Q.773 §4.2.2.1	o	

Comments:

**A.5.9.2 Return result (Last/Not Last) component**

**Table A.14**

Item	Parameter	Reference	Status	Support
1	Invoke ID	Q.773 §4.2.2.1	m	
2	Parameters	Q.773 §4.2.2.1	o	

Comments:

**A.5.9.3 Return result (Last/Not Last) parameters**

**Table A.15**

Item	Parameter	Reference	Status	Support
1	Operation Code	Q.773 §4.2.2.1	c8	
2	Parameters	Q.773 §4.2.2.1	c8	

c8: IF A.14/2 THEN m ELSE x

Comments:

**A.5.9.4 Return error component**

**Table A.16**

Item	Parameter	Reference	Status	Support
1	Invoke ID	Q.773 §4.2.2.1	m	
2	Error Code	Q.773 §4.2.2.1	m	
3	Parameters	Q.773 §4.2.2.1	o	

Comments:

**A.5.9.5 Reject component**

**Table A.17**

Item	Parameter	Reference	Status	Support
1	Invoke ID	Q.773 §4.2.2.1	m	
2	Problem Code	Q.773 §4.2.2.1	m	

Comments:

**A.5.10 Dialogue portion fields**

**A.5.10.1 Dialogue request**

**Table A.18**

Item	Parameter	Reference	Status	Support
1	Protocol Version	Q.773 §4.2.3.1	o	
2	Application Context name	Q.773 §4.2.3.1	m	
3	User Information	Q.773 §4.2.3.1	c9	

c9: IF A.7/3 THEN m ELSE x

Comments:

**A.5.10.2 Dialogue response**

**Table A.19**

Item	Parameter	Reference	Status	Support
1	Protocol Version	Q.773 §4.2.3.1	o	
2	Application Context name	Q.773 §4.2.3.1	m	
3	Result	Q.773 §4.2.3.1	m	
4	Result Source Diagnostic	Q.773 §4.2.3.1	m	
5	User Information	Q.773 §4.2.3.1	c10	

c10: IF A.7/3 THEN m ELSE x

Comments:

**A.5.10.3 Dialogue abort**

**Table A.20**

Item	Parameter	Reference	Status	Support
1	Abort Source	Q.773 §4.2.3.1	m	
2	User Information	Q.773 §4.2.3.1	c11	

c11: IF A.7/3 THEN m ELSE x

Comments:

**A.5.10.4 Dialogue unidirectional**

**Table A.21**

Item	Parameter	Reference	Status	Support
1	Protocol Version	Q.773 §4.2.3.1	o	
2	Application Context name	Q.773 §4.2.3.1	m	
3	User Information	Q.773 §4.2.3.1	c12	

c12: IF A.7/3 THEN m ELSE x

Comments:

**A.5.11 Support of external types**

**Table A.22**

Item	Parameter	Reference	Status		Support	
			S	R	S	R
1	Direct reference	Q.773 §4.2.3.1	m	m		
2	Indirect reference	Q.773 §4.2.3.1	o	o		
3	Object Descriptor	Q.773 §4.2.3.1	o	o		
4	Octet-Aligned	Q.773 §4.2.3.1	o	o.2		
5	Arbitrary	Q.773 §4.2.3.1	o	o.2		
6	Single ASN.1-type length	Q.773 §4.2.3.1	o	o.2		

o.2 at least one type of encoding should be supported

Comments:

**A.5.12 Report of operation timer expiry**

**Table A.23**

Item	Parameter	Reference	Status	Support
1	Class 1	Q.771 §3.1.3.6	m	
2	Class 2	Q.771 §3.1.3.6	m	
3	Class 3	Q.771 §3.1.3.6	m	
4	Class 4	Q.771 §3.1.3.6	0	

Comments:

## History

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