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**Information technology – Telecommunications and  
information exchange between systems – End  
System Routing Information Exchange Protocol for  
use in conjunction with ISO 8878**

**AMENDMENT 2: Protocol Implementation  
Conformance Statement (PICS)**

*Technologies de l'information – Télécommunications et échange d'informations  
entre systèmes – Protocole d'échange d'informations pour le routage pour les  
systèmes d'extrémité à utiliser conjointement avec l'ISO 8878*

*AMENDEMENT 2: Avis de conformité de mise en œuvre du protocole (PICS)*



Reference number  
ISO 10030:1990/Amd.2:1992 (E)

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## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Amendment 2 to International Standard ISO/IEC 10030:1990 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

Annex B forms an integral part of ISO/IEC 10030.

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## Introduction

This amendment to ISO/IEC 10030 : 1990 consists of five items to be added to ISO/IEC 10030 : 1990. The main item is a new annex containing the Protocol Implementation Conformance Statement (PICS) proforma for ISO/IEC 10030 : 1990. The four other items add related material to clauses 1 through 4 (Scope, Normative references, Definitions and Abbreviations). The remaining clauses 5 to 12, and the present annex, of ISO/IEC 10030 : 1990 are unchanged by this amendment.

# Information technology – Telecommunications and information exchange between systems – End System Routeing Information Exchange Protocol for use in conjunction with ISO 8878

## AMENDMENT 2 : Protocol Implementation Conformance Statement (PICS)

*Instructions for amending ISO/IEC 10030 : 1990 are given in italics and numbered from 1 to 5; clause numbers and titles in this amendment correspond to those in ISO/IEC 10030 : 1990.*

ISO/IEC 9646-2:1991, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 2: Abstract test suite specification.*

### 1 Scope

1. Add the following paragraph at the end of clause 1, Scope.

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented. Such a statement is called Protocol Implementation Conformance Statement (PICS), as defined in ISO/IEC 9646-1. This International Standard provides the PICS proforma in compliance with the relevant requirements, and in accordance with the relevant guidance, given in ISO/IEC 9646-2.

### 2 Normative references

2. Add the following references in clause 2, Normative references, after that for ISO/IEC TR 9577 : 1990.

ISO/IEC 9646-1:1991, *Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 1: General concepts.*

### 3 Definitions

3. Add the following sub-clause in clause 3, Definitions, after sub-clause 3.4 and renumber sub-clause 3.5 as 3.6.

#### 3.5 PICS Definitions

This International Standard makes use of the following terms defined in ISO/IEC 9646.

- a) Protocol Implementation Conformance Statement (PICS)
- b) PICS proforma

### 4 Abbreviations

4. Add the following abbreviation in sub-clause 4.3 after NPDU.

PICS            Protocol Implementation Conformance Statement

5. Add a new normative annex B as follows.

**Annex B**

(normative)

**Protocol Implementation Conformance Statement Proforma<sup>1</sup>**

**Introduction**

The supplier of a protocol implementation which is claimed to conform to ISO/IEC 10030 : 1990 shall complete the following Protocol Implementation Conformance Statement (PICS) proforma.

A completed PICS proforma is the PICS for the implementation in question. The PICS is a statement of which capabilities and options of the protocol have been implemented. The PICS can have a number of uses, including use:

- by the protocol implementor, as a check-list to reduce the risk of failure to conform to the standard through oversight;
- by the supplier and acquirer – or potential acquirer – of the implementation, stated relative to the common basis for understanding provided by the standard PICS proforma;
- by the user – or potential user – of the implementation, as a basis for initially checking the possibility of interworking with another implementation (note that, while interworking can never be guaranteed, failure to interwork can often be predicted from incompatible PICSs);
- by a protocol tester, as the basis for selecting appropriate tests against which to assess the claim for conformance of the implementation.

Summary — is to be completed as indicated with the information necessary to identify fully both the supplier and the implementation.

The main part of the PICS proforma is a fixed-format questionnaire. Answers to the questionnaire items are to be provided in the rightmost column, either by simply marking an answer to indicate a restricted choice (usually Yes or No), or by entering a value or a set or range of values. (Note that there are some items where two or more choices from a set of possible answers can apply; all relevant choices are to be marked.)

Each item is identified by an item reference in the first column; the second column contains the question to be answered; the third column the reference or references to the material that specifies the item in ISO/IEC 10030. The remaining columns record the status of the item — whether support is mandatory, optional, prohibited or conditional — and provide the space for the answers; see also B.2.2 below. (Status is sometimes indicated by other means than a separate Status column: for example, where the same status applies to a whole group of items, as in B.2.4.2.)

A supplier may also provide — or be required to provide — further information, categorized as either Additional Information or Exception Information. When present, each kind of further information is to be provided in a further subclause of items labelled A<i> or X<i>, respectively, for cross-referencing purposes, where <i> is any unambiguous identification for the item (e.g., simply a numeral); there are no other restrictions on its format and presentation.

A completed PICS proforma, including any Additional Information and Exception Information, is the Protocol Implementation Conformance Statement for the implementation in question.

**NOTE 1** Where an implementation is capable of being configured in more than one way, a single PICS may be able to describe all such configurations. However, the supplier has the choice of providing more than one PICS, each covering some subset of the implementation's configuration capabilities, in case this makes for easier and clearer presentation of the information.

**B.1 Notations**

The following notations are used in this PICS proforma:

- M mandatory
- O optional
- O.<n> optional, but support of at least one of the group of options labelled by the same numeral <n> is required
- X prohibited
- <pred> conditional-item symbol, including predicate identification (see B.2.4.2).
- Logical negation, applied to a conditional item's predicate (see B.2.4.2).

**B.2 Instructions for completing the PICS proforma**

**B.2.1 General structure of the PICS proforma**

The first part of the PICS proforma — Implementation Identification and Protocol

1. Copyright release for PICS proformas

Users of this International Standard may freely reproduce the PICS proforma in this annex so that it can be used for the intended purpose and may further publish the completed PICS.

## B.2.2 Additional Information

Items of Additional Information allow a supplier to provide further information intended to assist the interpretation of the PICS. It is not intended or expected that a large quantity will be supplied, and a PICS can be considered complete without any such information. Examples might be an outline of the ways in which a (single) implementation can be set up to operate in a variety of environments and configurations or a brief rationale — based perhaps upon specific applications needs — for the exclusion of features which, although optional, are nonetheless commonly present in implementations of the ISO/IEC 10030.

References to items of Additional Information may be entered next to any answer in the questionnaire, and may be included in items of Exception Information.

## B.2.3 Exception Information

It may occasionally happen that a supplier will wish to answer an item with mandatory or prohibited status (after any conditions have been applied) in a way that conflicts with the indicated requirement. No pre-printed answer will be found in the Support column for this; instead, the supplier is required to write into the Support column an X<i> reference to an item of Exception Information and to provide the appropriate rationale in the Exception item itself.

An implementation for which an Exception item is required in this way does not conform to ISO/IEC 10030 : 1990.

NOTE 2 A possible reason for the situation described above is that a defect in the standard has been reported, a correction for which is expected to change the requirement not met by the implementation.

## B.2.4 Conditional status

### B.2.4.1 Conditional items

The PICS proforma contains a number of conditional items. These are items for which the status — mandatory, optional or prohibited — that applies is dependent upon whether or not certain other items are supported or upon the values supported for other items.

In many cases, whether or not the item applies at all is conditional in this way, as well as the status when the item does apply.

Where a group of items is subject to the same condition for applicability, a separate preliminary question about the condition appears at the head of the group, with an instruction to skip to a later point in the questionnaire if the "Not Applicable" answer is selected. Otherwise, individual conditional items are indicated by one or more conditional symbols (on separate lines) in the Status column.

A conditional symbol is of the form "<pred>: <s>" where "<pred>" is a predicate as described in B.2.4.2 below, and "<s>" is one of the status symbols M, O, O.<n> or X.

If the value of the predicate in any line of a conditional item is true (see B.2.4.2), the conditional item is applicable, and its status is that indicated by the status symbol following the predicate: the answer column is to be marked in the usual way. If the value of a predicate is false, the Not Applicable (N/A) answer is to be marked in the relevant line. (Each line in a multi-line conditional item is to be marked: at most one line will require an answer other than N/A.)

### B.2.4.2 Predicates

A predicate is one of the following:

- an item-reference for an item in the PICS proforma: the value of the predicate is true if the item is marked as supported, and is false otherwise; or
- a predicate name, for a predicate defined elsewhere in the PICS proforma (usually in the Major Capabilities section or at the end of the section containing the conditional item): see below; or
- the logical negation symbol "—" prefixed to an item-reference or predicate name: the value of the predicate is true if the value of the predicate formed by omitting the "—" symbol is false, and viceversa.

The definition for a predicate name is one of the following:

- an item-reference, evaluated as at (a) above; or
- a relation containing a comparison operator (=, <, etc) with at least one of its operands being an item-reference for an item taking numerical values as its answer: the predicate is true if the relation holds when each item-reference is replaced by the value entered in the Support column as answer to the item referred to; or
- a Boolean expression constructed by combining simple predicates, as at (i) and (ii), using the Boolean operators AND, OR and NOT, and parentheses, in the usual way: the value of such a predicate is true if the Boolean expression evaluates to true when the simple predicates are interpreted as described above.

Each item whose reference is used in a predicate or predicate definition is indicated by an asterisk in the Item column.

**B.3 Implementation Identification**

Supplier	
Contact point for queries about this PICS	
Implementation Name(s) and Version(s)	
Other information necessary for full identification (e.g., Name(s) and Version(s) for machines and/or operating systems, System Name(s))	

NOTES 3 Only the first three items are required for all implementations; other information may be completed as appropriate in meeting the requirement for full identification.

4 The terms Name and Version should be interpreted appropriately to correspond with a supplier's terminology (using, e.g., Type, Series, Model).

**B.4 Protocol Summary: ISO/IEC 10030:1990**

Identification of Protocol Specification	
Identification of Amendments and Corrigenda to this PICS proforma which have been completed as part of this PICS.	
Protocol Version(s) Supported	
Have any Exception items been required (see B.2.3) No <input type="checkbox"/> Yes <input type="checkbox"/> (The answer Yes means that the implementation does not conform to ISO/IEC 10030 : 1990)	
Date of Statement	

**B.5 10030 System Implementation Identification**

Item	Protocol Feature	References	Status	Support
ES*	End System Implementation	Clauses 8,9	O.1	Yes <input type="checkbox"/> No <input type="checkbox"/>
SNARE*	SNARE Implementation	Clause 11	O.1	Yes <input type="checkbox"/> No <input type="checkbox"/>

**B.6 ISO/IEC 10030 Implementations**

**B.6.1 End System Implementation**

**B.6.1.1 Major Capabilities**

Item	Protocol Feature	Reference(s)	Status	Support		
EsCI*	Configuration Information Subset supported?	8	ES:O.2	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
EsRI*	Redirection Information Subset supported?	9	ES:O.2	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
EsL1*	LLC Type 1 Broadcast Procedure supported?	A.3	ES:O	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

**B.6.1.2 Configuration and Redirection Information**

Item	Protocol Feature	Reference(s)	Status	Support		
EsCIs	<b>Is EsCI supported<sup>1</sup>?</b>	8		N/A <input type="checkbox"/>		
CnEs	Connection Establishment	8.2.1	M	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	
CnFl	Connection Establishment Failure	8.2.2	M	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	
CfNt*	Configuration Notification	8.2.3.1	O	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
CfCl*	Configuration Collection	8.2.3.2	O	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
NrCl	Normal Completion	8.3	M	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	
CMkA	Processing of Address Mask in SCR PDUs	10.1	O	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
CMkS	Processing of Address Mask and SNPA Mask in SCR PDUs	10.1,10.2	O	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
EsRIs	<b>Is EsRI supported<sup>2</sup>?</b>	9		N/A <input type="checkbox"/>		
InRd	Invoking Redirection	9.1	M	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	
RdCl	Redirect Information for Clear Indications	9.2.1	M	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	
RMkA	Processing of Address Mask in RD PDUs	10.1	O	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
RMkS	Processing of Address Mask and SNPA Mask in RD PDUs	10.1,10.2	O	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
RpCd	Recommended Processing of Call Connected when call is deflected	9.2.2	O	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
RpCr	Recommended Processing of Call Connected when call is redirected	9.2.2	O	N/A <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

1. If not supported, mark N/A and continue at EsRIs below.
2. If not supported, mark N/A and continue at ECQ below.

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B.6.1.3 PDUs Implemented

Item	Protocol Feature	Reference(s)	Status	Support
ECQ*	<s> ES Configuration Query	12.1,12.2.1	CfCi:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
ENC	<s> ES Notification Complete	12.1,12.2.2	CfNt:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
ESC	<s> ES Connect	12.1,12.2.3	EsCi:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
ESH*	<s> ES Hello	12.1,12.2.4	CfNt:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
RD*	<d> Redirect	12.1,12.2.5	EsRi:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
SCC*	<d> SNARE Configuration Complete	12.1,12.2.6	CfCi:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
SCR*	<d> SNARE Configuration Response	12.1,12.2.7	CfCi:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
SNC*	<d> SNARE Notification Complete	12.1,12.2.8	EsCi:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
SRN*	<d> SNARE Received Notification	12.1,12.2.9	CfNt:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
SHL*	<d> SNARE Hello	A.2.3	EsL1:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
SRH	<s> SNARE Request Hello	A.3.1	EsL1:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
	<b>Are the following PDU fields supported?</b>			
FxPts	<s> Fixed Parameters	12.1.1-12.1.3	M	Yes <input type="checkbox"/>
FxPtr	<d> Fixed Parameters	12.1.1-12.1.3	M	Yes <input type="checkbox"/>
NtAds	<s> Network Address	12.1.4	EsCi:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
NtAdr	<d> Network Address	12.1.4	EsCi:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
SnAd	<d> SNPA Address	12.1.5	EsRi:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
Thpts	<s> Throughput	12.1.6.1	ESH:O	N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
Thptr	<d> Throughput	12.1.6.1	SCR:O	N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
Ts-dls	<s> Transit Delay	12.1.6.2	ESH:O	N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
Tsdlr	<d> Transit Delay	12.1.6.2	SCR:O	N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
Prtys	<s> Priority	12.1.6.3	ESH:O	N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
Prtyr	<d> Priority	12.1.6.3	SCR:O	N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
Prots	<s> Protection	12.1.6.4	ESH:O	N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
Protr	<d> Protection	12.1.6.4	SCR:O	N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
HdTm	<d> Holding Time	12.1.7	EsRi:O	N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
AdMk*	<d> Address Mask	12.1.8	EsRi:O	N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
SnMk	<d> SNPA Mask	12.1.9	(EsRi AND AdMk):O	N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
QrLm	<d> Query Limit	12.1.10	EsCi:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
RqTm	<d> Request Time	12.1.11	EsCi:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
NtRq	<d> Notification Required	12.1.12	SRN:O	N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>
RtTm	<d> Retention Time	A.2.3	EsL1:M	N/A <input type="checkbox"/> Yes <input type="checkbox"/>
	<b>Parameter Ranges</b>			
RespT	If configuration information is supported, what range of values can be set for the Response Timer?	8.1.1	EsCi:M	From: seconds To: seconds by increment of †: (other - specify) †: with a tolerance of:
NtRtT	If configuration information is supported, what range of values can be set for the Notification Retry Timer?	8.1.2	EsCi:M	From: seconds To: seconds by increment of †: (other - specify) †: with a tolerance of:

† - delete if not applicable