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**Digitalno omrežje z integriranimi storitvami (ISDN) – Protokol digitalne naročniške signalizacije št. 1 (DSS1) – Signalizacijska omrežna plast za krmiljenje vodovnega osnovnega klica – 3. del: Izjava o skladnosti izvedbe protokola (PICS) – Proforma specifikacija**

Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 3: Protocol Implementation Conformance Statement (PICS) proforma specification

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**ICS:**

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35.100.30	Omrežni sloj	Network layer

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# EN 300 403-3 V1.2.2 (1998-04)

*European Standard (Telecommunications series)*

**Integrated Services Digital Network (ISDN);  
Digital Subscriber Signalling System No. one (DSS1) protocol;  
Signalling network layer for circuit-mode basic call control;  
Part 3: Protocol Implementation Conformance  
Statement (PICS) proforma specification**

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## Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Signalling Protocols and Switching (SPS).

The present document is part 3 of a multi-part standard covering the Digital Subscriber Signalling System No. one (DSS1) protocol specification for the Integrated Services Digital Network (ISDN) signalling network layer for circuit-mode basic call control, as described below:

- Part 1: "Protocol specification";
- Part 2: "Specification and Description Language (SDL) diagrams";
- Part 3: "Protocol Implementation Conformance Statement (PICS) proforma specification";**
- Part 4: "Test Suite Structure and Test Purposes (TSS&TP) specification for the user";
- Part 5: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the user";
- Part 6: "TSS&TP specification for the network";
- Part 7: "ATS and partial PIXIT proforma specification for the network".

### Proposed national transposition dates

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

EN 300 403-1 is derived from ITU-T Recommendation Q.931 (1993). However, no PICS proforma exists for this Recommendation. Therefore, ETSI has created a PICS proforma that is specific to the European environment. This PICS proforma reflects the requirements contained in ITU-T Recommendation Q.931 with the modifications applied by EN 300 403-1. This has been done to assist understanding of how the European requirements relate to the requirements contained within ITU-T Recommendation Q.931 (and in particular, to the options specified in ITU-T Recommendation Q.931 that are selected by EN 300 403-1). In practical terms, this means that a number of capabilities specified by ITU-T Recommendation Q.931 appear as items in this PICS proforma with a status more akin to the status that would be expected in a profile ICS (i.e. out-of-scope (I), prohibited (X)).

Annex B of the present document describes the differences between the proforma contained in annex A and the proforma for the earlier version of the DSS1 protocol as specified in ETS 300 102-1 (1990).

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## 1 Scope

This third part of EN 300 403 provides the Protocol Implementation Conformance Statement (PICS) proforma for the Integrated Services Digital Network (ISDN) Digital Subscriber Signalling System No. one (DSS1) protocol signalling network layer for circuit-mode basic call control as specified in EN 300 403-1 [1] and ETS 300 403-2 [2] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [4].

The supplier of an implementation that is claimed to conform to EN 300 403-1 [1] and ETS 300 403-2 [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

References may be made to:

- a) specific versions of publications (identified by date of publication, edition number, version number, etc.), in which case, subsequent revisions to the referenced document do not apply; or
- b) all versions up to and including the identified version (identified by "up to and including" before the version identity); or
- c) all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or
- d) publications without mention of a specific version, in which case 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.

### 2.1 Normative references

- [1] EN 300 403-1 (V1.2): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification [ITU-T Recommendation Q.931 (1993), modified]".
- [2] ETS 300 403-2 (1995): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 2: Specification Description Language (SDL) diagrams".

### 2.2 Informative references

- [3] ISO/IEC 9646-1 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [4] ISO/IEC 9646-7 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

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## 3 Definitions and abbreviations

### 3.1 Definitions

In addition to the definitions in EN 300 403-1 [1], ETS 300 403-2 [2], ISO/IEC 9646-1 [3] and ISO/IEC 9646-7 [4], the following definitions 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, profile ICS, profile specific ICS, and information object ICS (see ISO/IEC 9646-1 [3]).

**Protocol Implementation Conformance Statement (PICS):** An ICS for an implementation or system claimed to conform to a given specification (see ISO/IEC 9646-1 [3]).

**PICS proforma:** A document, in the form of a questionnaire, which when completed for an implementation or system becomes a PICS (see ISO/IEC 9646-1 [3]).

### 3.2 Abbreviations

The following abbreviations apply:

BC	Bearer Capability information element
DSS1	Digital Subscriber Signalling System No. one
HLC	High Layer Compatibility information element
ICS	Implementation Conformance Statement
ISDN	Integrated Services Digital Network
IUT	Implementation Under Test
LLC	Low Layer Compatibility information element
LLI	Logical Link Identifier
MFE	Multiple Frame Establishment
NIC	Network Independent Clock
OSI	Open Systems Interconnection
PABX	Private Automatic Branch Exchange
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
SUT	System Under Test
(T)	Transparent (PDU parameter)
USBS	User Signalling Bearer Service

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## 4 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 EN 300 403-1 [1] and ETS 300 403-2 [2];
- b) be a conforming PICS proforma, which has been completed in accordance with the instructions for completion given in clause A.1; and
- c) include the information necessary to uniquely identify both the supplier and the implementation.

## Annex A (normative): PICS proforma for EN 300 403-1 and ETS 300 403-2

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document 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 Purpose and structure

The purpose of this PICS proforma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in EN 300 403-1 [1] and ETS 300 403-2 [2] may provide information in a standardized manner.

The PICS proforma is subdivided into clauses as follows:

- guidance for completing the various parts of the PICS proforma;
- identification of the implementation;
- identification of the protocol to which this PICS proforma applies;
- global statement of conformance;
- questions to determine roles; **(standards.iteh.ai)**
- questions for the user role; and
- questions for the network role. [SIST EN 300 403-3 V1.2.2:2005  
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#### A.1.2 Symbols, 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 [4].

##### Item column

The item column contains a unique reference (a mnemonic plus a number) for each item within the PICS proforma.

**NOTE:** Where possible, backwards compatibility has been maintained between the item references used in this PICS proforma and those used in the PICS proforma for the earlier version of the DSS1 protocol described in ETS 300 102-1.

In general, the same mnemonics have been used in this PICS proforma as in earlier proforma. An additional lower case letter has been added to differentiate PICS items related to the user role (e.g. MCu) and PICS items related to the network role (e.g. MCn). In earlier PICS proforma both these cases were identified by the same mnemonic (e.g. MC).

A further consequence of maintaining backwards compatibility is the appearance of discontinuities in the numeric part of the item reference. There are, for example, PICS items listed as messages transmitted by the network with the references "MTn 2" and "MTn 4"; the reference between, "MTn 3" is not used.

##### Item description column

The item description contains a brief summary of the static requirement for which a support answer is required.

## Conditions for status column

The conditions for status column contains a specification, if appropriate, of the predicate upon which a conditional status is based.

## Status column

The following notations, defined in ISO/IEC 9646-7 [4], are used for the status column:

**NOTE:** To support a capability means that the capability is implemented in conformance to EN 300 403-1 [1] and ETS 300 403-2 [2].

I	Irrelevant or out-of-scope - this capability is outside the scope of the ETS to which this PICS proforma applies and is not subject to conformance testing in this context.
M	Mandatory - the capability is required to be supported.
N/A	Not Applicable - in the given context, it is impossible to use the capability. No answer in the support column is required.
O	Optional - the capability may be supported or not.
O.i	qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer that identifies an unique group of related optional items and the logic of their selection, defined below the table.
X	eXcluded or prohibited - there is a requirement not to use this capability in a given context.

## Reference column

Except where explicitly stated, the reference column refers to the appropriate parts of EN 300 403-1 [1] describing the particular item. 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 EN 300 403-1 [1] and ETS 300 403-2 [2] has to be taken into account when making a statement about the conformance of that particular item.

## Support column

The following notation, defined in ISO/IEC 9646-7 [4], is used for the support column:

<input type="checkbox"/> Yes <input type="checkbox"/> No	Tick "Yes" if item is supported, tick "No" if item is not supported.
<input type="checkbox"/> N/A	Tick "N/A" if the item is "not applicable".

## Prerequisite line

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

A prerequisite line after a subclause heading or table title indicates that the whole subclause 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. For each row in each PICS proforma table the supplier shall enter an explicit answer (i.e. by ticking the appropriate "Yes", "No", or "N/A" in each of the support column boxes provided. Where a support column box is left blank, or where it is marked "N/A" without any tickbox, no answer is required. If necessary, the supplier may enter additional comments at the end of each table, or separately.

More detailed instructions may be found at the beginning of each section of the proforma.

## A.1.4 The PICS proforma tables

### A.1.4.1 Correspondence to a physical interface

The "implementation" (IUT) about which this PICS proforma asks questions corresponds to a layer 3 implementation on top of ONE physical interface (i.e. one ISDN Basic access or one ISDN Primary rate access interface structure). If the SUT implements both Basic access and Primary rate access interface structures, and in the case of the Basic access, supports more than one configuration, then a layer 3 PICS shall be created for each type of interface (and for each configuration of each interface) provided by the SUT.

### A.1.4.2 Structure of the tables

The supplier shall provide answers to the questions concerning the major roles of the IUT and the type of interface (table A.1). The supplier shall then provide answers to the questions relating to the capabilities of the IUT in one of the major roles as appropriate. The supplier shall also provide answers to the questions relating to the type of interface supporting the IUT (the behaviour of the IUT is dependant on the type of interface and its configuration). Apart from the initial questions to determine roles, the major roles of the IUT - the user role (R 2.1) and the network role (R 2.2), are treated completely separately in the PICS proforma. It is only necessary to complete the questions for the supported role. The answers to the "type of interface" questions (represented by items R 3.x, R 6.x and R 7.x) condition the answers to the further questions within each major role (user and network).

Clause A.6 concerns the capabilities of the IUT whilst in the user role. Clause A.7 concerns the capabilities of the IUT whilst in the network role.

### A.1.4.3 Complexity of conditions in PDU parameter tables

The conditions governing when an individual information element has to be supported in a specific message are quite complex. This is particularly so for the Bearer capability, Progress indicator, and High layer compatibility information elements when they are transmitted by an IUT in the user role. To make the conditions for status easier to understand questions about these information elements have been split into several sub-items.

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### A.1.4.4 Support for received PDU parameters

In the PDU parameter tables (A.6.5 and A.7.5), the PICS proforma asks questions about the information elements (parameters) supported in messages (PDUs) received by the IUT. This subclause explains, in the context of EN 300 403-1 [1], what "to support a received PDU parameter" means.

The requirement that an IUT is able to parse an information element in a received message is already implied by claiming support for the receipt of that received message. This means that "to support a received PDU parameter" implies more.

Information elements in received messages are regarded as either transparent or non-transparent.

A non-transparent information element is one that causes the protocol control entity to vary its behaviour in accordance with the content of the information element. To support a non-transparent information element means an IUT can process the received parameter and behave according to the procedures described in EN 300 403-1 [1].

An information element is transparent if the actions taken according to its contents are not detectable in the subsequent behaviour of the protocol (i.e. EN 300 403-1 [1] does not specify the protocol behaviour). To support a transparent information element means an IUT can receive the information element concerned and pass it to an appropriate processing entity (e.g. call control); the information element is not discarded by the protocol control entity. Non-support of a transparent information element means the IUT discards it.

Where EN 300 403-1 [1], in addition to not specifying the protocol behaviour, does not specify the non-protocol behaviour, transparent parameters have been allocated the status Irrelevant (I). In such cases the Client may choose not to answer whether or not the IUT supports the item. If the item is claimed to be supported, an explanation shall be given in the comments field of the table indicating what actions are performed on receipt of the parameter.

This PICS proforma considers the Cause, Display, and Keypad facility information elements to be transparent in all circumstances where they are possible to be received. Other information elements may be transparent in some circumstances (e.g. High layer compatibility and Low layer compatibility when received by the network). Transparent parameters are marked by "(T)" in the PDU parameter tables.

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## 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 to provide as much detail as possible regarding version numbers and configuration options.

The product supplier 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:

.....

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IUT version:

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### A.2.3 System Under Test (SUT) identification

SUT name:

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Hardware configuration:

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Operating system:

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## A.2.4 Product supplier

Name:

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E-mail address:

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Address:

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Telephone number:

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Facsimile number:

.....

Additional information:

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## A.2.5 Client

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Name:

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