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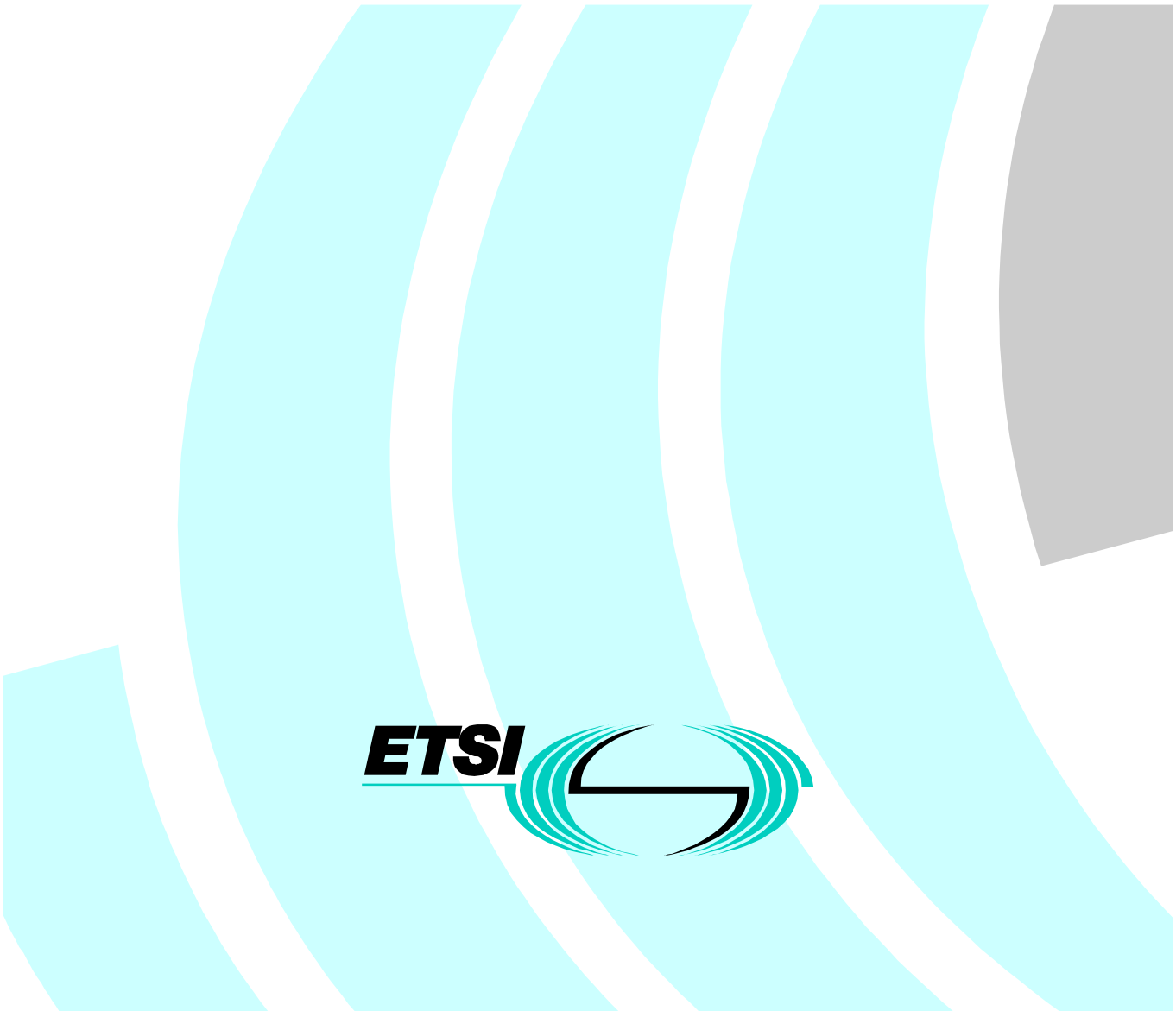
European Standard (Telecommunications series)

Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 3 interactions with the Intelligent Network Application Part (INAP); Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification



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Contents

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Services and Protocol for Advanced Networks (SPAN), and is now submitted for the Public Enquiry phase of the ETSI standards Two-step Approval Procedure.

The present document is part 2 of a multi-part EN covering the interactions between ISDN User Part (ISUP) version 3 and Intelligent Network Application Part (INAP) in the scope of IN Capability Set 1 (CS1), as identified below:

Part 1: "Protocol specification [ITU-T Recommendation Q.1600 (1997), modified]";

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".

Proposed national transposition dates	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
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Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

1 Scope

The present document contains the validation (conformance) test specification for the interaction between ISUP v3 and INAP CS1 defined in EN 301 070-1 [1]. The present document applies only to exchanges having implemented the ISUP v3 protocol specification in the call control function (CCF) and the INAP CS1 in the service switching function (SSF) of the exchange. It is applicable for validation testing of all types of exchanges as defined in the ISUP v3 protocol specification. The present document does not deal with compatibility testing.

The main text part of the present document presents the protocol implementation conformance statements (PICS) for the interaction between ISUP v3 and INAP CS1 defined in compliance with the relevant requirements and in accordance with the guidance given in ISO/IEC 9646-7 [7]. This statement indicates which capabilities and options of a telecommunication specification have been implemented. It is necessary for evaluating the conformance of a particular implementation. The supplier of an implementation that is claimed to comply with the reference specification for the interaction between ISUP v3 and INAP CS1 [1], is required to complete a copy of the PICS proforma provided in the present document.

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] EN 301 070-1 (V1.2): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 3 interactions with the Intelligent Network Application Part (INAP); Part 1: Protocol specification [ITU-T Recommendation Q.1600 (1997), modified]".

[2] EN 300 356-1: "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 3 for the international interface; Part 1: Basic services [ITU-T Recommendations Q.761 to Q.764 (1997), modified]".

[3] ISO/IEC 9646-1 (1997): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General Concepts".

[4] ISO/IEC 9646-2 (1997): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract test suite specification".

[5] ISO/IEC 9646-3 (1992): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".

[6] ISO/IEC 9646-5 (1997): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 5: Requirements on test laboratories and clients for the conformance assessment process".

[7] ISO/IEC 9646-7 (1995): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

[8] ITU-T Recommendation Q.1214 (1995): "Distributed functional plane for intelligent network CS-1".

[9] ITU-T Recommendation Q.1218 (1995): "Interface Recommendation for intelligent network CS-1".

[10] ITU-T Recommendation Q.784.1 (1996): "ISUP basic call test specification: Validation and compatibility for ISUP'92 and Q.767 protocols".

[11] ITU-T Recommendation E.164 (1997): "The international public telecommunication numbering plan".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

- terms defined in ISDN User Part (ISUP) reference specification [1] and [2];
- terms defined in ISO/IEC 9646-1 [3], ISO/IEC 9646-3 [5] and in ISO/IEC 9646-7 [7].

In particular, the following terms apply:

Abstract Test Case (ATC): complete and independent specification of the actions required to achieve a specific test purpose, defined at the level of abstraction of a particular Abstract Test Method, starting in a stable testing state and ending in a stable testing state (see ISO/IEC 9646-1 [3], subclause 3.3.3)

Abstract Test Method (ATM): description of how an IUT is to be tested, given at an appropriate level of abstraction to make the description independent of any particular realization of a Means of Testing, but with enough detail to enable abstract test cases to be specified for this method (see ISO/IEC 9646-1 [3], subclause 3.3.5)

Abstract Test Suite (ATS): test suite composed of abstract test cases (see ISO/IEC 9646-1 [3], subclause 3.3.6)

Implementation Under Test (IUT): implementation of one or more OSI protocols in an adjacent user/provider relationship, being part of a real open system which is to be studied by testing (see ISO/IEC 9646-1 [3], subclause 3.3.43)

ISDN number: number conforming to the numbering and structure specified in ITU-T Recommendation E.164 [11]

Means of Testing (MOT): combination of equipment and procedures that can perform the derivation, selection, parameterization and execution of test cases, in conformance with a reference standardized ATS, and can produce a conformance log (see ISO/IEC 9646-1 [3], subclause 3.3.54)

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

PIXIT proforma: document, in the form of a questionnaire, which when completed for the IUT becomes the PIXIT

Point of Control and Observation: point within a testing environment where the occurrence of test events is to be controlled and observed, as defined in an Abstract Test Method (see ISO/IEC 9646-1 [3], subclause 3.3.64)

Pre-test condition: setting or state in the IUT which cannot be achieved by providing stimulus from the test environment

Protocol Implementation Conformance Statement (PICS): statement made by the supplier of a protocol claimed to conform to a given specification, stating which capabilities have been implemented (see ISO/IEC 9646-1 [3], subclauses 3.3.39 and 3.3.80)

Protocol Implementation eXtra Information for Testing (PIXIT): statement made by a supplier or implementor of an IUT (protocol) which contains or references all of the information related to the IUT and its testing environment, which will enable the test laboratory to run an appropriate test suite against the IUT (see ISO/IEC 9646-1 [3], subclauses 3.3.41 and 3.3.81)

System Under Test (SUT): real open system in which the IUT resides (see ISO/IEC 9646-1 [3], subclause 3.3.103)

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ASE	Application Service Entity
ASP	Abstract Service Primitive
A-SSP	Assisting Signalling Switching Point
ATM	Abstract Test Method
ATS	Abstract Test Suite
CCBS	Completion of Calls to Busy Subscriber
CCF	Call Control Function
CD	Call Deflection
CDIV	Call DIVersion
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
COLP	Connected Line Identification Presentation
COLR	Connected Line Identification Restriction
CS1	IN Capability Set No 1
DLE	Destination Local Exchange
ECT	Explicit Call Transfer
ICS	Implementation Conformance Statement
INAP	Intelligent Network Application Protocol
ISDN	Integrated Services Digital Network
I-SSP	Initiating Signalling Switching Point
ISUP	ISDN User Part
IUT	Implementation Under Test
LT	Lower Tester
MCID	Malicious Call Identification
MOT	Means Of Testing
MTC	Main Test Component
MTP	Message Transfer Part
OLE	Originating Local Exchange
P&C	Prompt and CollectUserInformation Operation
PCO	Point of Control and Observation
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PTC	Parallel Test Component
SCCP	Signalling Connection Control Part
SP	Signalling Point
SSF	Service Switching Function
SUT	System Under Test
TCP	Test Coordination Procedures
TP	Test Purpose (context dependent)
TSS and TP	Test Suite Structure and Test Purposes
TSS	Test Suite Structure
TTCN	Tree and Tabular Combined Notation

The ISUP message acronyms can be found in table 2 of ITU-T Recommendation Q.762 as endorsed by [2].
The following abbreviations apply for ISUP parameters and parameter values.

AdSg	Address Signals
CgPN	Calling Party Number
GenNot	Generic Notification
TMR	Transmission Medium Requirement
USI	User Service Indicator

4 Conformance to the PICS proforma specification

A PICS proforma that conforms to this PICS proforma specification shall be technically equivalent to the document.

Annex A in the present document, and shall preserve the numbering and ordering of the items.

A PICS that conforms to this PICS proforma specification shall:

a) describe an implementation which is claimed to conform to ISDN User Part (ISUP) v3 reference specification [1] and [2];

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

A.1 Instructions for completing the PICS proforma

The supplier of the implementation shall complete the PICS proforma in each of the spaces provided. If necessary, the supplier may provide additional comments separately.

More detailed instructions are given at the beginning of the different subclauses of 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 ISDN User Part (ISUP) '97 reference specification [1] and [2] may provide information about the implementation in a standardized manner.

The PICS proforma is subdivided into subclauses for the following categories of information:

- instructions for completing the PICS proforma;
- identification of the implementation;
- identification of the reference protocol specification;
- PICS proforma tables (containing the global statement of conformance).

A.1.2 Abbreviations and conventions

The PICS proforma contained in this annex is composed of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7.

Item column

It contains a number that identifies the item in the table.

Item description column

It describes each respective item (e.g. parameters, timers, etc.).

Reference column

It gives reference to the ISUP v3 specification for the supplementary services [1] and [2], except where explicitly stated otherwise.

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.

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 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" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying a unique conditional status expression that is defined immediately following the table. For nested conditional expressions, the syntax "IF ... THEN (IF ... THEN ... ELSE...) ELSE ..." shall be used to avoid ambiguities. If an ELSE clause is omitted, "ELSE n/a" shall be implied.

NOTE: Support of a capability means that the capability is implemented in conformance to the ISUP v3 specification [1] and [2].

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 or - no answer required (allowed only if the status is N/A, directly or after evaluation of a conditional status).

Values allowed column

This column contains the values or the ranges of values allowed.

Values supported column

The support 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. It is defined as the table identifier, followed by a slash character "/", followed by the item number in the table. If there is more than one support column in a table, the columns shall be discriminated by letters (a, b, etc.) respectively.

Example 1: 1/4 is the reference to the answer of item 4 in table A.1.

Example 2: 2/3b is the reference to the second answer (i.e. in the second support column) of item 3 in table A.2.

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

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:	
Additional information:	

A.2.5 Client

Name:	
Address:	
Telephone number:	
Facsimile number:	
Additional information:	

A.2.6 ICS contact person

Name:	
Telephone number:	
Facsimile number:	
Additional information:	

A.3 Identification of the reference specification

This PICS proforma applies to the following standard: EN 301 070-1.

Note that as prerequisite it is necessary to support the basic services described in [10]. A separate PICS proforma has been specified for ISUP'92 basic services [10].

A.4 PICS proforma tables

A.4.1 Global statement of conformance

	(Yes/No)
Are all mandatory capabilities implemented?	

NOTE: Answering "No" to this question indicates non-conformance to the reference protocol specification. Non-supported mandatory capabilities are to be identified in the PICS, with an explanation of why the implementation is non-conforming.

A.4.2 Capabilities

Table A.1: INAP Operation Capabilities

Item	Is the exchange able to ...	Reference	Status	Support
1	support the assist method in an I-SSP			
2	support the assist method in an A-SSP			
3	through-connect the transmission path in both directions in case of forward address signalling	subclause 9.9.1.1.1 of ITU-T Recommendation Q.1600 as endorsed by [1]		
4	include the "Through-connection instruction" in the ACM	subclause 9.5.1.1.2 of ITU-T Recommendation Q.1600 as endorsed by [1]		
5	send an EventReportBCSM operation to the SCP after the specified number of digits were collected by the exchange, if a RequestReportBCSMEvent operation accompanied by a CollectInformation operation to arm DP2 was sent by the SCP	subclause 9.2 of ITU-T Recommendation Q.1600 as endorsed by [1]	o.1	
6	send an CollectedInformation operation to the SCP after the specified number of digits were collected by the exchange, if a RequestReportBCSMEvent operation accompanied by a CollectInformation operation to arm DP2 was sent by the SCP	subclause 9.2 of ITU-T Recommendation Q.1600 as endorsed by [1]	o.1	
7	send an early ACM	subclause 9.1.1.1.1 of ITU-T Recommendation Q.1600 as endorsed by [1]		
8	send an early ANM	subclause 9.4.3.1 b) of ITU-T Recommendation Q.1600 as endorsed by [1]		
9	FALLBACK (see ISUP Basic Call PICS A.13/10)			
10	send the correlationID and scfID parameters in the IAM on the used signalling system? (the network operator has to decide about the actual mapping)	subclause 9.5.3 of ITU-T Recommendation Q.1600 as endorsed by [1]		
11	extracted the value of the correlationID in the AssistRequestInstructions procedure from the digits received from the initiating SSF or be all the digits?	subclause 3.3.8.1.1 of ITU-T Recommendation Q.1218 as endorsed by [1]	@	
o.1:	It is mandatory to support at least one of these items.			
@:	National option.			

Table A.2: INAP TIMERS

Item	Use of ...	Reference	Status	Support	Values in seconds	
					allowed	supported
1	T_{SUS}	table 13 of ITU-T Recommendation Q.1600 as endorsed by [1]	m			
2	$T_{NoReply}$	table 13 of ITU-T Recommendation Q.1600 as endorsed by [1]	m			
3	T_{UID}	table 13 of ITU-T Recommendation Q.1600 as endorsed by [1]	m		1800	

History

Document history			
V1.1.2	November 1999	Public Enquiry	PE 200009: 1999-11-03 to 2000-03-03