

Draft **ETSI EN 300 356-31** V3.0.3 (1999-11)

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*European Standard (Telecommunications series)*

**Integrated Services Digital Network (ISDN);  
Signalling System No.7;  
ISDN User Part (ISUP) version 3 for the international interface;  
Part 31: Protocol Implementation  
Conformance Statement (PICS)  
proforma specification for basic services**

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**Reference**

REN/SPS-01037-1 (3avr1i20.PDF)

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**Keywords**

Basic, ISDN, ISUP, SS7, PICS

**ETSI**

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## Foreword

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

The present document is part 31 of a multi-part EN covering the Integrated Services Digital Network (ISDN); Signalling System No.7 ISDN User Part (ISUP) version 3 for the international interface, as identified below:

- Part 1: "Basic services";
- Part 2: "ISDN supplementary services";
- Part 3: "Calling Line Identification Presentation (CLIP) supplementary service";
- Part 4: "Calling Line Identification Restriction (CLIR) supplementary service";
- Part 5: "Connected Line Identification Presentation (COLP) supplementary service";
- Part 6: "Connected Line Identification Restriction (COLR) supplementary service";
- Part 7: "Terminal Portability (TP) supplementary service";
- Part 8: "User-to-User Signalling (UUS) supplementary service";
- Part 9: "Closed User Group (CUG) supplementary service";
- Part 10: "Subaddressing (SUB) supplementary service";
- Part 11: "Malicious Call Identification (MCID) supplementary service";
- Part 12: "Conference Call, add-on (CONF) supplementary service";
- Part 14: "Explicit Call Transfer (ECT) supplementary service";
- Part 15: "Diversion supplementary services";
- Part 16: "Call Hold (HOLD) supplementary service";
- Part 17: "Call Waiting (CW) supplementary service";
- Part 18: "Completion of Calls to Busy Subscriber (CCBS) supplementary service";
- Part 19: "Three party (3PTY) supplementary service";
- Part 20: "Completion of Calls on No Reply (CCNR) supplementary service";
- Part 31: "Protocol Implementation Conformance Statement (PICS) proforma specification for basic services";**

- Part 32: "Test Suite Structure and Test Purposes (TSS&TP) specification for basic services";
- Part 33: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for basic services";
- Part 34: "Protocol Implementation Conformance Statement (PICS) proforma specification for supplementary services";
- Part 35: "Test Suite Structure and Test Purposes (TSS&TP) specification for supplementary services";
- Part 36: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for supplementary services".

NOTE: Part 13 and 21 to 30 have not been issued.

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

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# 1 Scope

The present document contains the validation (conformance) test specification for ISUP v3 basic call control and signalling procedures defined in EN 300 356-1 [8]. The present document applies only to exchanges having implemented the ISUP v3 protocol specification. It is applicable for validation testing of all types of exchanges as defined in the ISUP v3 protocol specification. Note that the compatibility tests are covered by ITU-T Recommendation Q.784.1 [6].

The main text part of the present document presents the requirements regarding the chosen test method, conventions used within the Protocol Implementation Conformance Statements (PICS) for ISUP v3 basic call control procedures.

Part 32 of the document series EN 300 356 presents the Test Suite Structure and the Test Purposes (TSS&TP) for ISUP v3 basic call control procedures and part 33 [9] presents the actual ATS, which is delivered in electronic form only, and the Protocol Conformance Test Report (PCTR).

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# 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] CCITT Recommendation Q.767: "Application of the ISDN user part of CCITT signalling system No. 7 for international ISDN interconnections".
- [2] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [3] ISO/IEC 9646-3: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".
- [4] ISO/IEC 9646-3/DAM 1: "Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation; Amendment 1: TTCN extensions".
- [5] ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".
- [6] ITU-T Recommendation Q.784.1: "ISUP basic call test specification: Validation and compatibility for ISUP'92 and Q.767 protocols".
- [7] ITU-T Recommendation E.164: "The international public telecommunication numbering plan".
- [8] EN 300 356-1 (V3.2): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP); ISDN User Part (ISUP) version 4 for the international interface; Part 1: Basic services [ITU-T Recommendations Q.761 to Q.764 modified]".
- [9] EN 300 356-33 (V3.1): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP); Basic Call and Supplementary Services. Part 33: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for basic services".

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## 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 [8];
- terms defined in ISO/IEC 9646-1 [2], ISO/IEC 9646-3 [3] and in ISO/IEC 9646-7 [5].

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 [2], 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 [2], subclause 3.3.5)

**Abstract Test Suite (ATS):** test suite composed of abstract test cases (see ISO/IEC 9646-1 [2], 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 [2], subclause 3.3.43)

**ISDN number:** number conforming to the numbering and structure specified in ITU-T Recommendation E.164 [7]

**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 [2], 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 [2], 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 [2], 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 [2], 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 [2], subclause 3.3.103)

**User:** access protocol entity at the User side of the user-network interface where a T reference point or coincident S and T reference point applies

## 3.2 Abbreviations

The ISUP message acronyms can be found in table 2 of ITU-T Recommendation Q.762 as endorsed by EN 300 356-1 [8].

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

ATC	Abstract Test Case
ATM	Abstract Test Method
ATS	Abstract Test Suite
CIC	Circuit Identification Code
CntrlE	Controlling Exchange
DLE	Destination Local Exchange
ICS	Implementation Conformance Statement
IncIE	Incoming International Exchange
IntermE	Intermediate Exchange
IWorkE	Interworking Exchange
ISDN	Integrated Services Digital Network
ISUP	ISDN User Part
IUT	Implementation Under Test
ITE	International Transit Exchange
OLE	Originating Local Exchange
OutIE	Outgoing International Exchange
MOT	Means Of Testing
MTP	Message Transfer Part
PCM	Pulse Code Modulation
PCTR	Protocol Conformance Test Report
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
SCS	System Conformance Statement
SP	Signalling Point
SUT	System Under Test
TP	Test Purpose
TypeA	Type A exchange
TypeB	Type B exchange
TSS	Test Suite Structure
TSS and TP	Test Suite Structure and Test Purposes
TTCN	Tree and Tabular Combined Notation
UNI	User-network interface
UT	Upper Tester

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## 4 Conformance to the PICS proforma specification

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 is claimed to conform to ISDN User Part (ISUP) reference specification [8];
- 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.



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## Annex A (normative): PICS proforma

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.
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### 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) '92 reference specification [8] 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 [5].

##### **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 '97 specification [8], except where explicitly stated otherwise.

### Status column

The following notations, defined in ISO/IEC 9646-7 [5], 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 '97 specification [8].

### 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 [5], 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: 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.

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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 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 300 356-1 (V3.2): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP); ISDN User Part (ISUP) version 4 for the international interface; Part 1: Basic services [ITU-T Recommendations Q.761 to Q.764 modified]".

## 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.

All references are to ITU-T Recommendation Q.764 [8], unless explicitly stated otherwise.

### A.4.2 Roles

Table A.1: Roles

Item	Is the implementation an ...	Reference	Status	Support
1	OLE - Originating local exchange	2.1.1.1	o.1	
2	NTE - National transit exchange	2.1.1.2	o.1	
3	OutIE - Outgoing international exchange	2.1.1.3	o.1	
4	InclE - Incoming international exchange	2.1.1.4	o.1	
5	ITE - International transit exchange	2.1.1.5	o.1	
6	DLE - Destination local exchange	2.1.1.6	o.1	
o.1: It is mandatory to support at least one of these items				

### A.4.3 Capabilities

The following matrix is an abbreviation guide for roles:

OLE	NTE	OutIE	ITE	InclE	DLE
TypeA	TypeB	TypeA	TypeB	TypeA	TypeA
Local	Transit	Gateway	Transit	Gateway	Local
	IntermE	IntermE	IntermE	IntermE	
CntrlE	CntrlE	CntrlE			
	IWorkE	IWorkE	IworkE	IWorkE	

Table A.2: Connection types

Item	Is the exchange able to ...	Reference	Status	Support
1	support the connection type "Speech"?	2.1.1.1 2.1.2.1	o.2	
2	support the connection type "3,1 kHz audio"?	2.1.1.1 2.1.2.1	o.2	
3	support the connection type "64 kbit/s unrestricted"?	2.1.1.1 2.1.2.1	o.2	
4	support the connection type "64 kbit/s unrestricted preferred"?	2.1.1.1 2.1.2.1	o	
5	support of multirate connection types?	2.1.1.1 2.1.2.1	o	
6	support the connection type "2 x 64 kbit/s unrestricted"?	2.1.1.1 2.1.2.1	o	
7	support the connection type "384 kbit/s unrestricted"?	2.1.1.1 2.1.2.1	o	
8	support the connection type "1 536 kbit/s unrestricted"?	2.1.1.1 2.1.2.1	o	
9	support the connection type "1 920 kbit/s unrestricted"?	2.1.1.1 2.1.2.1	o	
10	support the connection type "NX64 kbit/s unrestricted"?	2.1.13	o	
o.2: It is mandatory to support at least one of these items.				

Table A.3: Forward address signalling

Item	Is the exchange [role] able to ...	Reference	Status	Support
1	[OLE] use the en bloc operation in the forward address signalling (sending)?	2.1.1.1	o.3	
2	[OLE] use the overlap operation in the forward address signalling (sending)?	2.1.2.1	o.3	
3	[IntermE] use the en bloc operation in the forward address signalling (receiving)?	2.1.1.2-5	m	
4	[IntermE] use the overlap operation in the forward address signalling (receiving)?	2.1.2.2-5	m	
5	[IntermE] use the en bloc operation in the forward address signalling (sending)?	2.1.1.2-5	o.4	
6	[IntermE] use the overlap operation in the forward address signalling (sending)?	2.1.2.2-5	o.4	
7	[DLE] use the en bloc operation in the forward address signalling (receiving)?	2.1.1.6	m	
8	[DLE] use the overlap operation in the forward address signalling (receiving)?	2.1.2.6	m	
o.3: It is mandatory to support at least one of these items.				
o.4: It is mandatory to support at least one of these items.				

Table A.4: OLE capabilities

Item	Is the exchange able to ...	Reference	Status	Support
1	send the end-of-pulsing signal (ST)?	2.1.1.1 b) 2.1.2.1 b)	o	
2	through-connect the transmission path also in the forward direction immediately after sending <b>IAM</b> for "Speech" or "3,1 kHz audio" calls?	2.1.1.1 d) 2.1.2.1 d)	o	
3	through-connect in the backward direction immediately after <b>IAM</b> in case of overlap signalling?	2.1.2.1 d) i)	o.5	
4	through-connect in the backward direction when <b>Called party number</b> complete (digit analysis, timer T10, receive of <b>ACM</b> ) in case of overlap signalling?	2.1.2.1 d) ii)	o.5	
5	handle (generate and route according to) the <b>Transit network selection</b> received from the access?	2.1.11	o	
o.5: It is mandatory to support at least one of these items.				

Table A.5: NTE CAPABILITIES

Item	Is the exchange able to ...	Reference	Status	Support
1	route calls using only the connection type in the <b>Transmission medium requirement</b> ?	2.1.1.2 a) 2.1.2.2 a)	o.6	
2	route calls using not only the connection type in the <b>Transmission medium requirement</b> ?	2.1.1.2 a) 2.1.2.2 a)	o.6	
3	route calls by examining the Bearer capability in the <b>User service information</b> and/or the High layer capability in the <b>User teleservice information</b> ?	2.1.1.2 a) 2.1.2.2 a)	c51	
4	support awaiting answer timer <b>T9</b> if it is a controlling exchange (CntrlE)?	2.1.4.2	o	
o.6: It is mandatory to support at least one of these items. c51: IF A.5/2 THEN o ELSE n/a.				

Table A.6: OutIE CAPABILITIES

Item	Is the exchange able to ...	Reference	Status	Support
1	route calls using only the connection type in the <b>Transmission medium requirement</b> ?	2.1.1.3 a) 2.1.2.3 a)	o.7	
2	route calls using not only the connection type in the <b>Transmission medium requirement</b> ?	2.1.1.3 a) 2.1.2.3 a)	o.7	
3	route calls by examining the Bearer capability in the <b>User service information</b> and/or the High layer capability in the <b>User teleservice information</b> ?	2.1.1.3 a) 2.1.2.3 a)	c61	
4	amend or omit the most significant digits in the called party number (country code)?	2.1.1.3 b)	o	
5	send the end-of-pulsing signal (ST)?	2.1.1.3 b) 2.1.2.3 b)	o	
6	support $\mu$ -law to A-law conversion?	2.1.1.3 b) 2.1.2.3 b)	n/a	
o.7: It is mandatory to support at least one of these items. c61: IF A.6/2 THEN o ELSE n/a.				

Table A.7: ITE CAPABILITIES

Item	Is the exchange able to ...	Reference	Status	Support
1	amend or omit the most significant digits in the called party number (country code)?	2.1.1.4 b)	o	

Table A.8: IncIE CAPABILITIES

Item	Is the exchange able to ...	Reference	Status	Support
1	support A-law to $\mu$ -law conversion?	2.1.1.5 b) 2.1.2.5 b)	n/a	

Table A.9: DLE CAPABILITIES

Item	Is the exchange able to ...	Reference	Status	Support
1	send a network initiated <b>Suspend</b> on receipt of an on-hook condition?	2.4.1	o	
2	send a network initiated <b>Resume</b> on receipt of an off-hook condition?	2.4.2	c91	
c91: IF A.9/1 THEN m ELSE n/a.				

**Table A.10: Interme CAPABILITIES**

Item	Is the exchange able to ...	Reference	Status	Support
1	route according to the Transit network selection?	2.1.11	o	
2	generate Call history information if it is missing?	2.6.1.5	c101	
c101: IF A.13/11 THEN o ELSE n/a.				

**Table A.11: IWORKE CAPABILITIES**

Item	Is the exchange able to ...	Reference	Status	Support
1	send a network initiated <b>Suspend</b> on receipt of a clear back signal?	2.4.1	o	
2	send a network initiated <b>Resume</b> on receipt of a re-answer indication?	2.4.2	c111	
c111: IF A.11/1 THEN m ELSE n/a.				

**Table A.12: GATEWAY CAPABILITIES**

Item	Is the exchange able to ...	Reference	Status	Support
1	perform policing of information for re-segmentation?	2.1.12 d)	o	
2	re-segment without discarding unrecognized parameters that have to be passed on according to the compatibility procedure?	2.1.12 h)	o	

Table A.12a: Role independent capabilities

Item	Is the exchange able to ...	Reference	Status	Support
1	support calls to testing and measuring devices (sending)?	2.1.1.8 2.1.2.8	o	
2	support calls to testing and measuring devices (receiving)?	2.1.1.8 2.1.2.8	o	
3	support the Continuity check procedures?	2.1.8	o	
4	use <b>Continuity-check request</b> message to test for proper CIC-alignment?	2.1.8 Annex G.3 b)	o	
5	do continuity checking for multirate connection type calls?	2.1.8	o	
6	support <b>FOT</b> ?	2.1.10	o	
7	support the Simple segmentation procedure?	2.1.12	o	
8	support in-band tones and announcements?	2.2.4	m	
9	support <b>Cause</b> in the <b>ACM</b> and <b>CPG</b> ?	2.2.4	m	
10	support signalling procedures for connection type allowing fallback?	2.5	o	
11	support the propagation delay determination procedure?	2.6	c121	
12	support the simple (Q.767) echo control procedure?	Q.767/D.2.8	o.8	
13	support the dynamic echo control procedure?	2.7	o.8	
14	handle circuits on more than one PCM-system in one <b>CGB/CGBA</b> and <b>CGU/CGUA</b> ?	2.8	o	
15	support method 1 as preventive action of dual seizure?	2.9.1.3	o.9	
16	support method 2 as preventive action of dual seizure?	2.9.1.3	o.9	
17	support a proprietary method as preventive action of dual seizure?	2.9.1.3	o.9	
18	handle circuits on more than one PCM-system in one <b>GRS/GRA</b> ?	2.9.3	o	
19	support the compatibility procedure?	2.9.5	m	
20	discard an unknown parameter without Parameter compatibility information?	2.9.5.3.2 i) b) 2.9.5.3.2 ii) b)	o.10	
21	pass on an unknown parameter without Parameter compatibility information?	2.9.5.3.2 i) b) 2.9.5.3.2 ii) b)	o.10	
22	support of ISDN User Part signalling congestion control?	2.10	o	
23	support of automatic congestion control?	2.11	o	
24	support the ISDN User Part availability control?	2.13	o	
25	support interaction with <b>MTP Pause</b> and <b>Resume</b> ?	2.14	m	
26	support of temporary alternative routing (TAR)	2.16	o	
27	support of hop counter procedure	2.17	o	
28	support of call collect request procedure	2.18	o	
o.8: It is mandatory to support at least one of these items.				
o.9: It is mandatory to support at least one of these items.				
o.10: It is mandatory to support at least one of these items.				



## A.4.4 Timers

Table A.13: TIMERS

Item	Use of ...	Reference	Status	Support	Values in seconds	
					allowed	supported
1	T1	Table A.1/Q.764	m		15 - 60	
2	T2	Table A.1/Q.764	m		180	
3	T3	Table A.1/Q.764	o		120	
4	T4	Table A.1/Q.764	o		300 - 900	
5	T5	Table A.1/Q.764	m		300 - 900	
6	T6	Table A.1/Q.764; 4.3.2/Q.118	m		60 - 120	
7	T7	Table A.1/Q.764	m		20 - 30	
8	T8	Table A.1/Q.764	m		10 - 15	
9	T9	Table A.1/Q.764; 4.3.1/Q.118	m		90 - 120	
10	T10	Table A.1/Q.764	m		4 - 6	
11	T11	Table A.1/Q.764	m		15 - 20	
12	T12	Table A.1/Q.764	m		15 - 60	
13	T13	Table A.1/Q.764	m		300 - 900	
14	T14	Table A.1/Q.764	m		15 - 60	
15	T15	Table A.1/Q.764	m		300 - 900	
16	T16	Table A.1/Q.764	m		15 - 60	
17	T17	Table A.1/Q.764	m		300 - 900	
18	T18	Table A.1/Q.764	m		15 - 60	
19	T19	Table A.1/Q.764	m		300 - 900	
20	T20	Table A.1/Q.764	m		15 - 60	
21	T21	Table A.1/Q.764	m		300 - 900	
22	T22	Table A.1/Q.764	m		15 - 60	
23	T23	Table A.1/Q.764	m		300 - 900	
24	T24	Table A.1/Q.764	m		0 - 2	
25	T25	Table A.1/Q.764	m		1 - 10	
26	T26	Table A.1/Q.764	m		60 - 180	
27	T27	Table A.1/Q.764	m		240	
28	T28	Table A.1/Q.764	o		10	
29	T29	Table A.1/Q.764	o		0,3 - 0,6	
30	T30	Table A.1/Q.764	o		5 - 10	
31	T31	Table A.1/Q.764	o		> 360	
32	T32	Table A.1/Q.764	o		3 - 5	
33	T33	Table A.1/Q.764	o		12 - 15	
34	T34	Table A.1/Q.764	c131		2 - 4	
35	T35	Table A.1/Q.764	m		15 - 20	
36	T36	Table A.1/Q.764	m		10 - 15	
37	T37	Table A.1/Q.764	c132		2 - 4	
38	T38	Table A.1/Q.764; 4.3.2/Q.118	m		60 - 120	
39	T39	Table A.1/Q.764; 7.9/Q.731.7	o		4 - 15	
c131: IF A.13/7 THEN m ELSE o.						
c132: IF A.13/13 THEN m ELSE o.						

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## Bibliography

The following material, though not specifically referenced in the body of the present document (or not publicly available), gives supporting information.

- ITU-T Recommendation Q.850: "Usage of cause and location in the Digital Subscriber Signalling System No. 1 and the Signalling System No. 7 ISDN User Part".
- ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract test suite specification".
- ISO/IEC 9646-5: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 5: Requirements on test laboratories and clients for the conformance assessment process".

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## History

<b>Document history</b>		
Edition 1	December 1997	Publication of ETS 300 356-31
V3.0.3	December 1999	Public Enquiry PE 200014: 1999-12-08 to 2000-04-07