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Integrated Services Digital Network (ISDN); Signalling System No.7; Signalling Connection Control Part (SCCP) (connectionless and connection-oriented class 2) to support international interconnection; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Signalling Protocols and Switching (SPS) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS is part 2 of a multi-part standard covering the Signalling System No.7 Signalling Connection Control Part (SCCP) to support international interconnection as described below:

Part 1: "Protocol specification [ITU-T Recommendations Q.711 to Q.714 and Q.716 (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".

Transposition dates	
Date of adoption of this ETS:	6 September 1996
Date of latest announcement of this ETS (doa):	31 December 1996
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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 OSI protocol. Such a statement is called a Protocol Implementation Conformance Statement (PICS).

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1 Scope

This second part of ETS 300 009 provides the Protocol Implementation Conformance Statement (PICS) proforma for Signalling Connection Control Part (SCCP) signalling protocol of Signalling System No.7 for use between and, optionally, in public networks as specified in ETS 300 009-1 [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 300 009-1 [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 300 009-1 (1996): "Integrated Services Digital Network (ISDN); Signalling System No.7; Signalling Connection Control Part (SCCP) (connectionless and connection-oriented class 2) to support international interconnection; Part 1: Protocol specification [ITU-T Recommendations Q.711 to Q.714 and Q.716 (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 300 009-1 [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:

AK	Data Acknowledgement message
c	Conditional
CC	Connection Confirm message
CR	Connection Request message
CREF	Connection Refused message
DPC	Destination Point Code
DT1	Data Form 1 message
DT2	Data Form 2 message
EA	Expedited Data Acknowledgement message
ED	Expedited Data message

EOP	End of Optional Parameter
ERR	Protocol Data Unit Error message
GT	Global Title
ICS	Implementation Conformance Statement
ISDN	Integrated Services Digital Network
IT	Inactivity Test message
IUT	Implementation Under Test
m	Mandatory
MTP	Message Transfer Part
n/a	Not Applicable
NSDU	Network Service Data Unit
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>
OPC	Originating Point Code
OSI	Open System Interconnection
PICS	Protocol Implementation Conformance Statement
RLC	Release Complete message
RLSD	Released message
RSC	Reset Confirm message
RSR	Reset Request message
SCCP	Signalling Connection Control Part
SCS	System Conformance Statement
SOG	Subsystem Out Of Service Grant message
SOR	Subsystem Out Of Service Request message
SPC	Signalling Point Code
SS	SubSystem
SSA	Subsystem Allowed message
SSN	SubSystem Number
SSP	Subsystem Prohibited message
SST	Subsystem Status Test message
SUT	System Under Test
UDT	UnitData message
UDTS	UnitData Service message
UPU	User Part Unavailable
x	Excluded
XUDT	Extended UnitData message
XUDTS	Extended UnitData Service message

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 300 009-1 [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 300 009-1

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 300 009-1 [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.711 to Q.714 as modified by ETS 300 009-1 [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 300 009-1 [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.

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

A.1.3 Instructions for completing the PICS

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 300 009-1 (1996): "Integrated Services Digital Network (ISDN); Signalling System No.7; Signalling Connection Control Part (SCCP) (connectionless and connection-oriented class 2) to support international interconnection; Part 1: Protocol specification [ITU-T Recommendations Q.711 to Q.714 and Q.716 (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 the SCCP protocol specified in ITU-T Recommendations Q.711 to Q.714 as modified by ETS 300 009-1 [1]. The proforma are presented in the form of tables.

NOTE: The compatibility capabilities with CCITT Blue Book (1988) and CCITT Red Book (1984) Recommendations are for further study (ffs).

A.5.1 General requirements

A.5.1.1 Implemented class

The supplier of the implementation shall state whether or not the following service classes are supported.

NOTE: Since all classes are optional, every capability described in the following subclauses is subject to the implementation of the corresponding protocol class.

Table A.1: Service Class

Item	Procedure	Reference	Status	Support
1/1	Class 0	Q.714 §1.1.2.1	o.11+c11	
1/2	Class 1	Q.714 §1.1.2.2	c12	
1/3	Class 2	Q.714 §1.1.2.3	o.11	
1/4	Class 3	Q.714 §1.1.2.4	c13	

o.11: support of at least one of these options is mandatory

c11: IF A.6/2 OR A.6/10 THEN m ELSE o -- the subsystem management and/or SCCP restart facilities are -- implemented
c12: IF A.1/1 THEN o ELSE x -- Class 1 requires Class 0 as prerequisite
c13: IF A.1/3 THEN o ELSE x -- Class 3 requires Class 2 as fallback position

Comments:

A.5.1.2 SCCP routing capabilities

The supplier of the implementation shall state whether or not the following routing functionalities are supported.

Table A.2: Routing functionalities

Item	Procedure	Reference	Status	Support
2/1	Outgoing routing to remote subsystem (input: DPC+SSN+[GT])	Q.714 §2.3	o.12	
2/2	Outgoing routing to relay node after Global Title translation in own node (input: GT+[SSN])	Q.714 §2.3	o.12	
2/3	Outgoing routing to relay node identified by user (input: DPC+GT+[SSN])	Q.714 §2.3	o.12	
2/4	Incoming routing to local subsystem (received: DPC+SSN+[GT])	Q.714 §2.3	o.13	
2/5	Incoming routing with translation to local subsystem (received: GT+[SSN] ==> own SPC+SSN')	Q.714 §2.3	o.13	
2/6	Incoming routing with translation to remote subsystem (received: GT+[SSN] ==> DPC+SSN'+[GT'])	Q.714 §2.3	o.13	
2/7	Incoming routing with translation to relay node (received: GT+[SSN] ==> DPC+GT'+[SSN'])	Q.714 §2.3	o.13	
2/8	Internal routing to local subsystem (input: own SPC +SSN+[GT])	Q.714 §2.3	o	
2/9	Internal routing with Global Title translation to local subsystem (input: GT+[SSN] ==> own SPC + SSN'+[GT'])	Q.714 §2.3	o	
2/10	Hop counter protection	Q.714 §2.3	o	
2/11	Translation with selection of backup if the GT translation leads to an unavailable SCCP subsystem	Q.714 §2.3	o	
2/12	Translation with selection of backup if the GT translation leads to an unavailable point code or SCCP	Q.714 §2.3	o	
2/13	Capabilities to generate a new GT'	Q.714 §2.3	o	

o.12: support of at least one of these options is mandatory
o.13: support of at least one of these options is mandatory

Comments:

A.5.1.3 Called/Calling address parameter

As these parameters include a lot of options, it is necessary that the supplier of the IUT enter which options are set in his Called/Calling address parameter.

Table A.3: Called/Calling address options

Item	Parameters	Reference	Status	Support	Values	
					Allowed	Supported
3/1	Translation Type	Q.713 §3.4	o (note 1)		0..255	
3/2	Numbering Plan	Q.713 §3.4	o (note 1)		0..15	
3/3	Nature of the address	Q.713 §3.4	o (note 1)		0..127	
3/4	global title indicators (0..4), receive	Q.713 §3.4	m (note 1)		0..4	
3/5	global title indicators (0..4), send	Q.713 §3.4	m (note 1)		0..4	
3/6	SPC included	Q.713 §3.4	o (note 1)		0/1	
3/7	SSN included	Q.713 §3.4	m (note 2)		0/1	
3/8	Routing Indicator	Q.713 §3.4	m (note 1)		Route-on-SSN, Route-on-GT	
NOTE 1: Which values have to be supported depends on the applications served by the SCCP implementation. For international application, annex E of ITU-T Recommendation Q.714 as modified by ETS 300 009-1 [1] applies. NOTE 2: According to ETS 300 009-1 [1], the SSN shall always be included in an address on sending a message.						

Comments:

A.5.1.4 MTP interface

The supplier of the implementation shall state which capabilities are provided for the interfacing to the underlying MTP.

Table A.4: MTP interface

Item	Procedure	Reference	Status	Support
4/1	Is the interface to MTP for the reporting of MTP-PAUSE, MTP-RESUME, MTP-STATUS referring to congestion, end of MTP restart provided?	Q.711 §3.2.1 to §3.2.5	m (note)	
4/2	Is the interface to MTP for the reporting of MTP-STATUS referring to user part unavailability provided?	Q.711 §3.2.4	o (note)	
NOTE: The answers should correspond to the respective items in the PICS reference(s) stated in table A.41.				

Comments:

A.5.1.5 Roles

The supplier of the implementation shall state which roles are played by the SUT in the network.

Table A.5: Roles in the network

Item	Procedure	Reference	Status	Support
5/1	end node	Q.714 §2.3	o.14	
5/2	relay nodes for connectionless	Q.714 §2.3	o.14	
5/3	relay node without coupling for connection-oriented	Q.714 §2.3	o.14	
5/4	relay nodes with coupling for connection-oriented	Q.714 §2.3	o.14	
5/5	gateway between MTP networks	Q.714 §2.3	o.14	

o.14: support of at least one of these options is mandatory

Comments:

A.5.2 Major capabilities - SCCP management

The supplier of the implementation shall state whether or not the (signalling) SCCP management procedures specified in ITU-T Recommendations Q.711 to Q.714 as modified by ETS 300 009-1 [1] are supported, in table A.6.

Table A.6: SCCP management

Item	Procedure	Reference	Status	Support
6/1	Signalling point status management for solitary nodes	Q.714 §5.2	m	
6/2	Subsystem status management for solitary subsystems	Q.714 §5.3	c62	
6/3	Local broadcast of N_STATE/N_PCSTATE	Q.714 §5.2.4	c63	
6/4	Local MTP availability	Q.714 §5.2.5	m	
6/5	Signalling point status management for replicated nodes (dominant mode)	Q.714 §5.2	c64	
6/6	Subsystem status management for replicated subsystems(dominant mode)	Q.714 §5.3	c65	
6/7	Co-ordinated state change between replicas	Q.714 §5.3.5	c66	
6/8	Local broadcast of remote subsystem, SCCP or SPC status changes	Q.714 §5.3.6	c67	
6/9	Remote broadcast of subsystem or SCCP status changes at local or adjacent SPCs.	Q.714 §5.3.7	c68	
6/10	SCCP restart (reaction on UPU procedure of MTP)	Q.714 §5.2, §5.3	c61	
6/11	Signalling Point restart	Q.714 §5.4	o	

c61: IF A.4/2 THEN m ELSE n/a -- interface to MTP for MTP-STATUS reporting UPU
c62: IF A.2/1 THEN m ELSE o -- routing towards an end node is needed
c63: IF A.5/1 THEN m ELSE n/a -- local end user exists
c64: IF A.2/12 THEN m ELSE n/a -- routing to duplicated nodes is required and subsystem -- management provided
c65: IF A.2/11 AND A.6/2 THEN m ELSE n/a -- routing to duplicated subsystems is required
c66: IF A.6/2 THEN o ELSE x -- subsystem management provided
c67: IF A.5/1 AND A.6/2 THEN o ELSE x -- local end users available and subsystem management is -- provided
c68: IF A.6/2 THEN o ELSE x -- subsystem management provided

Comments:

A.5.3 Major capabilities - connectionless SCCP

The supplier of the implementation shall state whether or not the (signalling) connectionless procedures for the SCCP specified in ITU-T Recommendations Q.711 to Q.714 as modified by ETS 300 009-1 [1] are supported, in table A.7.

Table A.7: Data transfer

Item	Procedure	Reference	Status	Support
7/1	Data transfer - non sequenced (Class 0), no return option using UDT or non-segmented XUDT	Q.714 §4.1	c71	
7/2	Data transfer, sequenced (Class 1)	Q.714 §4.1	c72	
7/3	Segmentation/reassembly	Q.714 §4.1.1	c73	
7/4	Message return	Q.714 §4.2	c73	
7/5	Syntax error	Q.714 §4.3	c74 (note 1)	
7/6	sending of XUDT for non-segmented messages	Q.714 §4.3	c73 (note 2)	
7/7	reception of XUDT for non-segmented messages	Q.714 §4.3	c74 (note 2)	
NOTE 1: Mandatory in end node (complete check) and in relay node (as far as needed to reliably route the message).				
NOTE 2: To allow the transition from the use of UDT to XUDT also for messages that do not need segmenting, reception of XUDT messages should be prepared (see ETS 300 009-1 [1], clause ZA.2).				

c71: IF A.1/1 THEN m ELSE x -- Class 0 implemented
c72: IF A.1/2 THEN m ELSE x -- Class 1 implemented
c73: IF A.1/1 OR A.1/2 THEN o ELSE x -- Class 0 or 1 implemented
c74: IF A.1/1 OR A.1/2 THEN m ELSE x -- Class 0 or 1 implemented

Comments:

A.5.4 Major capabilities - connection-oriented SCCP

The supplier of the implementation shall state whether or not the (signalling) connection-oriented procedures for the SCCP as specified in ITU-T Recommendations Q.711 to Q.714 as modified by ETS 300 009-1 [1] are supported, in tables A.8 to A.15.

Table A.8: Connection establishment

Item	Procedure	Reference	Status	Support
8/1	Explicit setup, Class 2 in end node	Q.714 §3.1	c81	
8/2	Embedded setup, Class 2 in end node	Q.714 §3.1	c85	
8/3	Explicit setup, Class 2 in relay node without coupling	Q.714 §3.1.5	c84	
8/4	explicit setup, Class 2 in relay node with coupling	Q.714 §3.1.5	c82	
8/5	Embedded setup, Class 2 in relay node with coupling	Q.714 §3.1.5	c86	
8/6	Explicit setup, refusal procedure	Q.714 §3.2	c83	
8/7	Embedded setup, refusal procedure	Q.714 §3.2	c87	
8/8	Data transfer in CR/CC/CREF messages	Q.714 §3.1	c88	
8/9	Responding address in CC or in CREF on user refusal	Q.714 §3.2	c89	
8/10	Class 3 window negotiation	Q.714 §3.1.3	ffs	
NOTE: In a relay point without coupling, SCCP is not involved in the setup of a connection using the embedded method. Therefore there is no entry foreseen in this table.				

c81: IF A.1/3 AND A.5/1 THEN m ELSE x -- SUT = end node for connection-oriented
c82: IF A.1/3 AND A.5/4 THEN m ELSE x -- SUT = relay node with coupling
c83: IF A.8/1 OR A.8/3 OR A.8/4 THEN m ELSE x -- explicit setup in end node or relay node
c84: IF A.1/3 AND A.5/3 THEN o ELSE x -- SUT = relay node without coupling
NOTE: This capability is left ffs in ITU-T Recommendation Q.714.

c85: IF A.1/3 THEN o ELSE x -- Class 2
c86: IF A.1/3 THEN o ELSE x -- Class 2
c87: IF A.8/2 OR A.8/5 THEN m ELSE x -- embedded setup supported
c88: IF A.8/1 OR A.8/3 OR A.8/4 THEN o ELSE x -- explicit setup provided
c89: IF A.8/1 OR A.8/3 OR A.8/4 THEN o ELSE x -- explicit setup provided

Comments:

Table A.9: Connection release

Item	Procedure	Reference	Status	Support
9/1	Release procedure in end nodes	Q.714 §3.3.3/5	c91	
9/2	Release procedure in relay nodes with coupling	Q.714 §3.3.4	c92	
9/3	Data transfer in RLSD messages	Q.714 §3.3	c93	

c91: IF A.8/1 OR A.8/2 THEN m ELSE x -- Class 2 in end nodes
c92: IF A.8/4 OR A.8/5 THEN m ELSE x -- Class 2 in relay node with coupling
c93: IF A.1/3 THEN o ELSE x -- Class 2

Comments:

Table A.10: Inactivity control

Item	Procedure	Reference	Status	Support
10/1	Inactivity control with LR check	Q.714 §3.4	m	
10/2	Inactivity control with flow control checks for Class 3	Q.714 §3.4	ffs	

Comments:

Table A.11: Data transfer

Item	Procedure	Reference	Status	Support
11/1	Data transfer Class 2 in end node	Q.714 §3.5.1	c111	
11/2	Data transfer in relay node with coupling	Q.714 §3.5.1	c112	
11/3	Data transfer Class 3 with flow control	Q.714 §3.5.2	ffs	
11/4	Data transfer, segmenting/reassembly	Q.714 §3.5.3	c113	
11/5	Expedited data transfer	Q.714 §3.6	ffs	
11/6	Data acknowledgement	Q.714 §3.6.3	ffs	
NOTE: In a relay point, the segmenting/reassembly functions are not invoked. The M bit is just passed transparently according to the compatibility rules of ITU-T Recommendation Q.1400.				

c111: IF A.8/1 OR A.8/2 THEN m ELSE x -- Class 2 in end nodes
c112: IF A.8/4 OR A.8/5 THEN m ELSE x -- Class 2 in relay node with coupling
c113: IF A.11/1 THEN o ELSE n/a -- Class 2 in end node

Comments:

Table A.12: Data transfer; segmenting/reassembly

Item	Parameters	Reference	Status	Support	Values	
					Allowed	Supported
12/1	Number of Segments supported	Q.714 §3.5.3	c125		16..255	
12/2	Total NSDU length supported	Q.714 §3.5.3	c125		4 KB..64 KB	

c125: IF A.11/4 THEN m ELSE n/a -- segmenting/reassembly is supported

Comments:

Table A.13: Reset

Item	Procedure	Reference	Status	Support
13/1	Reset	Q.714 §3.7	ffs	

Comments:

Table A.14: Restart

Item	Procedure	Reference	Status	Support
14/1	Restart	Q.714 §3.8	c141	

c141: IF A.1/3 THEN m ELSE n/a -- Class 2

Comments:

Table A.15: Abnormalities

Item	Procedure	Reference	Status	Support
15/1	Abnormalities	Q.714 §3.10	c151	

c151: IF A.1/3 THEN m ELSE n/a -- Class 2

Comments:

A.5.5 Timers used in SCCP

The supplier of the implementation shall state whether or not the following timers, used by the SCCP protocol, as specified in ITU-T Recommendations Q.711 to Q.714 as modified by ETS 300 009-1 [1] are supported and their value or range(s), in tables A.16.

Table A.16: Timers - SCCP

Item	Timer	Reference	Status	Support	Values	
					Allowed	Supported
16/1	T(conn est)	Q.714 §C.4	c161		1 to 2 min	
16/2	T(ias)	Q.714 §C.4	c161		1 to 10 min (note)	
16/3	T(iar)	Q.714 §C.4	c161		3 to 21 min (note)	
16/4	T(rel)	Q.714 §C.4	c161		10 to 20 s	
16/5	T(guard)	Q.714 §C.4	c165		8 to 25 min (note)	
16/6	T(reset)	Q.714 §C.4	ffs		10 to 20 s	
16/7	T(reassembly)	Q.714 §C.4	c162		10 to 20 s	
16/8	T(coord)	Q.714 §C.4	c164		1 to 2 min	
16/9	T(interval)	Q.714 §C.4	c161		up to 1 min	
16/10	T(repeat rel)	Q.714 §C.4	c161		up to 20 s	
16/11	T(ignore SST)	Q.714 §C.4	c164		selected by management	
16/12	T(stat info)	Q.714 §C.4	c163		starting from 5 to 10 s to max. 10 to 20 min	
NOTE: Provisional values. These values cover both the provisional ranges specified in ITU-T Recommendation Q.714 as modified by ETS 300 009-1 [1], and the finally agreed ranges to be published in the next edition of ITU-T Recommendations.						

c161: IF A.1/3 THEN m ELSE n/a -- Class 2
c162: IF A.7/3 THEN m ELSE n/a -- connectionless segmenting/reassembly
c163: IF A.6/2 THEN m ELSE n/a -- SCCP subsystem management
c164: IF A.6/7 THEN m ELSE n/a -- co-ordinated state change procedure
c165: IF A.1/3 THEN m ELSE n/a -- Class 2

Comments:

A.5.6 Messages

The supplier of the implementation shall state whether or not the following messages specified in ITU-T Recommendations Q.711 to Q.714 as modified by ETS 300 009-1 [1] are supported, in table A.17.

The supplier shall indicate for each message the status of support for sending and receiving.

Table A.17: Messages

Item	Message	Reference	Sending		Receiving	
			Status	Support	Status	Support
17/1	CC	Q.712 §1.1	c171		c171	
17/2	CR	Q.712 §1.2	c177		c177	
17/3	CREF	Q.712 §1.3	c171		c171	
17/4	AK	Q.712 §1.4	ffs		ffs	
17/5	DT1	Q.712 §1.5	c178		c178	
17/6	DT2	Q.712 §1.6	ffs		ffs	
17/7	ED	Q.712 §1.7	ffs		ffs	
17/8	EA	Q.712 §1.8	ffs		ffs	
17/9	IT	Q.712 §1.9	c179		c179	
17/10	ERR	Q.712 §1.10	c17B		c17B	
17/11	RLSD	Q.712 §1.11	c17A		c17A	
17/12	RLC	Q.712 §1.12	c17A		c17A	
17/13	RSC	Q.712 §1.13	ffs		ffs	
17/14	RSR	Q.712 §1.14	ffs		ffs	
17/15	SSA	Q.712 §1.15	c172		c172	
17/16	SOG	Q.712 §1.16	c175		c175	
17/17	SOR	Q.712 §1.17	c175		c175	
17/18	SSP	Q.712 §1.18	c172		c172	
17/19	SST	Q.712 §1.19	c172		c172	
17/20	UDT	Q.712 §1.20	c173		c173	
17/21	UDTS	Q.712 §1.21	c174		c174	
17/22	XUDT	Q.712 §1.22	c17C		c176	
17/23	XUDTS	Q.712 §1.23	c17D		c17E	

c171: IF A.8/1 OR A.8/2 OR A.8/4 OR A.8/5 THEN m ELSE x -- Class 2 and (end node or relay point with coupling)
c172: IF A.6/2 OR A.6/10 THEN m ELSE n/a -- subsystem management or SCCP restart
c173: IF A.1/1 OR A.1/2 THEN m ELSE x -- Class 0 or 1
c174: IF A.7/4 THEN m ELSE x -- return option supported
c175: IF A.6/7 THEN m ELSE n/a -- co-ordinated status change implemented
c176: IF A.7/3 OR A.7/7 THEN m ELSE n/a -- connectionless segmenting/reassembly
-- implemented or reception of XUDT for
-- non-segmented message supported
c177: IF A.8/1 OR A.8/3 OR A.8/4 THEN m ELSE n/a -- explicit connection setup provided
c178: IF A.11/1 OR A.11/2 THEN m ELSE n/a -- data transfer provided
c179: IF A.10/1 THEN m ELSE n/a -- inactivity test
c17A: IF A.9/1 OR A.9/2 THEN m ELSE n/a -- release procedure
c17B: IF A.15/1 THEN m ELSE n/a -- abnormalities treated
c17C: IF A.7/6 OR A.7/3 THEN m ELSE n/a -- sending of XUDT for non-segmented messages or
-- segmenting/reassembly supported
c17D: IF A.7/4 AND (A.7/6 OR A.7/3) THEN m ELSE n/a -- XUDT messages sent with return option
c17E: IF A.7/4 AND (A.7/7 OR A.7/3) THEN m ELSE n/a -- XUDT messages received with return option

Comments:

A.5.7 Message parameters

The supplier of the implementation shall state whether or not each message parameter of the messages specified in ITU-T Recommendations Q.711 to Q.714 as modified by ETS 300 009-1 [1] are supported, in tables A.18 to A.40.

The supplier shall indicate the status of support for sending and receiving for each parameter in each message.

NOTE 1: The status of the message parameters is subject to the implementation of the corresponding message (see table 17). When an unknown optional parameter or value is received, the compatibility rules specified in subclause 1.1.4 of ITU-T Recommendation Q.714 as modified by ETS 300 009-1 [1] apply.

NOTE 2: The support status of the message parameters does not completely reflect the status given in ITU-T Recommendation Q.713 as modified by ETS 300 009-1 [1] where mandatory parameters are also mandatorily supported. The support of optional parameters may be conditioned by the support of optional capabilities in tables A.1 to A.15.

Table A.18: Connection Request (CR)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
18/1	Message Type Code	Q.713 §2.1	m		m	
18/2	Source Local Reference Number	Q.712 §2.9	m		m	
18/3	Called Party Address	Q.712 §2.3	m		m	
18/4	Calling Party Address	Q.712 §2.3	o		o	
18/5	Protocol class	Q.712 §2.10	m		m	
18/6	Credit	Q.712 §2.4	ffs		ffs	
18/7	User Data	Q.712 §2.5	c181		c181	
18/8	Hop Counter	Q.712 §2.19	c182		c182	
18/9	End of Optional Parameters	Q.712 §2.8	c183		c183	

c181: IF A.8/8 THEN m ELSE n/a -- user data in CC/CR/CREF is supported
c182: IF A.2/10 THEN m ELSE n/a -- hop counter protection provided
c183: IF A.18/4 OR A.18/7 OR A.18/8 THEN m ELSE n/a -- mandatory when optional parameters are present

Comments:

Table A.19: Connection Confirm (CC)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
19/1	Message Type Code	Q.713 §2.1	m		m	
19/2	Destination Local Reference Number	Q.712 §2.9	m		m	
19/3	Source Local Reference Number	Q.712 §2.9	m		m	
19/4	Called Party Address	Q.712 §2.3	c191		c191	
19/5	Protocol class	Q.712 §2.10	m		m	
19/6	Credit	Q.712 §2.4	ffs		ffs	
19/7	User Data	Q.712 §2.5	c192		c192	
19/8	End of Optional Parameters	Q.712 §2.8	c193		c193	

c191: IF A.8/9 THEN m ELSE n/a -- responding address in CREF or CC message
c192: IF A.8/8 THEN m ELSE n/a -- user data in CC/CR/CREF is supported
c193: IF A.19/4 OR A.19/7 THEN m ELSE n/a -- mandatory when optional parameters are present

Comments:

Table A.20: Connection Refused (CREF)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
20/1	Message Type Code	Q.713 §2.1	m		m	
20/2	Destination Local Reference Number	Q.712 §2.9	m		m	
20/3	Called Party Address	Q.712 §2.3	c201		c201	
20/4	User Data	Q.712 §2.5	c202		c202	
20/5	Refusal Cause	Q.712 §2.12	m		m	
20/6	End Of Optional Parameters	Q.712 §8	c203		c203	

c201: IF A.8/9 THEN m ELSE n/a -- responding address in CREF or CC message
c202: IF A.8/8 THEN m ELSE n/a -- user data in CC/CR/CREF is supported
c203: IF A.20/3 OR A.20/4 THEN m ELSE n/a -- mandatory when optional parameters are present

Comments:

Table A.21: Released (RLSD)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
21/1	Message Type Code	Q.713 §2.1	m		m	
21/2	Destination Local Reference Number	Q.712 §2.9	m		m	
21/3	Source Local Reference Number	Q.712 §2.9	m		m	
21/4	Release Cause	Q.712 §2.13	m		m	
21/5	User Data	Q.712 §2.5	c211		c211	
21/6	End of Optional Parameters	Q.712 §2.8	c212		c212	

c211: IF A.9/3 THEN m ELSE n/a -- data transport in RLSD is supported
c212: IF A.21/5 THEN m ELSE n/a -- mandatory when optional parameters are present

Comments:

Table A.22: Release Complete (RLC)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
22/1	Message Type Code	Q.713 §2.1	m		m	
22/2	Destination Local Reference Number	Q.712 §2.9	m		m	
22/3	Source Local Reference Number	Q.712 §2.9	m		m	

Comments:

Table A.23: Data Form 1 (DT1)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
23/1	Message Type Code	Q.713 §2.1	m		m	
23/2	Destination Local Reference Number	Q.712 §2.9	m		m	
23/3	Segmenting/Reassembling	Q.712 §2.16	m		m	
23/4	User Data	Q.712 §2.5	m		m	

Comments:

Table A.24: Data Form 2 (DT2)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
24/1	Message Type Code	Q.713 §2.1	m		m	
24/2	Destination Local Reference Number	Q.712 §2.9	m		m	
24/3	Sequencing/Segmenting	Q.712 §2.17	m		m	
24/4	User Data	Q.712 §2.5	m		m	

Comments:

Table A.25: Data Acknowledgement (AK)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
25/1	Message Type Code	Q.713 §2.1	m		m	
25/2	Destination Local Reference Number	Q.712 §2.9	m		m	
25/3	Receive Sequence Number	Q.712 §2.11	m		m	
25/4	Credit	Q.712 §2.4	m		m	

Comments:

Table A.26: Expedited Data (ED)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
26/1	Message Type Code	Q.713 §2.1	m		m	
26/2	Destination Local Reference Number	Q.712 §2.9	m		m	
26/3	User Data	Q.712 §2.5	m		m	

Comments:

Table A.27: Expedited Data Acknowledge (EA)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
27/1	Message Type Code	Q.713 §2.1	m		m	
27/2	Destination Local Reference Number	Q.712 §2.9	m		m	

Comments:

Table A.28: Reset Request (RSR)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
28/1	Message Type Code	Q.713 §2.1	m		m	
28/2	Destination Local Reference Number	Q.712 §2.9	m		m	
28/3	Source Local Reference Number	Q.712 §2.9	m		m	
28/4	Reset Cause	Q.712 §2.14	m		m	

Comments:

Table A.29: Reset Confirm (RSC)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
29/1	Message Type Code	Q.713 §2.1	m		m	
29/2	Destination Local Reference Number	Q.712 §2.9	m		m	
29/3	Source Local Reference Number	Q.712 §2.9	m		m	

Comments:

Table A.30: Protocol Data Unit Error (ERR)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
30/1	Message Type Code	Q.713 §2.1	m		m	
30/2	Destination Local Reference Number	Q.712 §2.9	m		m	
30/3	Error Cause	Q.712 §2.7	m		m	
30/4	End of Optional Parameter	Q.712 §2.8	x (note)		m	
NOTE: There are no optional parameters defined anymore for the ERR message, so an implementation according to ETS 300 009-1 [1] will never include the EOP. For compatibility reasons, it is nevertheless required that the presence of optional parameters (e.g. the former "diagnostic" parameter) is accepted.						

Comments:

Table A.31: Inactivity Test (IT)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
31/1	Message Type Code	Q.713 §2.1	m		m	
31/2	Destination Local Reference Number	Q.712 §2.9	m		m	
31/3	Source Local Reference Number	Q.712 §2.9	m		m	
31/4	Protocol class	Q.712 §2.10	m		m	
31/5	Sequencing/Segmenting	Q.712 §2.17	m (note)		m (note)	
31/6	Credit	Q.712 §2.4	m (note)		m (note)	
NOTE: Information in these parameter fields are ignored if the protocol class parameter indicates Class 2.						

Comments:

Table A.32: UnitData (UDT)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
32/1	Message Type Code	Q.713 §2.1	m		m	
32/2	Protocol class	Q.712 §2.10	m		m	
32/3	Called Party Address	Q.712 §2.3	m		m	
32/4	Calling Party Address	Q.712 §2.3	m		m	
32/5	User Data	Q.712 §2.5	m		m	

Comments:

Table A.33: UnitData Service (UDTS)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
33/1	Message Type Code	Q.713 §2.1	m		m	
33/2	Return Cause	Q.712 §2.15	m		m	
33/3	Called Party Address	Q.712 §2.3	m		m	
33/4	Calling Party Address	Q.712 §2.3	m		m	
33/5	User Data	Q.712 §2.5	m		m	

Comments:

Table A.34: Extended UnitData (XUDT)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
34/1	Message Type Code	Q.713 §2.1	m		m	
34/2	Protocol class	Q.712 §2.10	m		m	
34/3	Hop counter	Q.712 §2.19	m		m	
34/4	Called Party Address	Q.712 §2.3	m		m	
34/5	Calling Party Address	Q.712 §2.3	m		m	
34/6	UserData	Q.712 §2.5	m		m	
34/7	Segmentation (note)	Q.712 §2.20	c341		c341	
34/8	End Of Optional Parameters	Q.712 §2.8	c342		c342	
NOTE: Should not be present in case of a single-segment XUDT message.						

c341: IF A.7/3 THEN m ELSE n/a -- segmenting/reassembly supported
c342: IF A.34/7 THEN m ELSE n/a -- mandatory when optional parameters are present

Comments:

Table A.35: Extended UnitData Service (XUDTS)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
35/1	Message Type Code	Q.713 §2.1	m		m	
35/2	Return Cause	Q.712 §2.15	m		m	
35/3	Hop counter	Q.712 §2.19	m		m	
35/4	Called Party Address	Q.712 §2.3	m		m	
35/5	Calling Party Address	Q.712 §2.3	m		m	
35/6	UserData	Q.712 §2.5	m		m	
35/7	Segmentation (note)	Q.712 §2.20	c351		c351	
35/8	End Of Optional Parameters	Q.712 §2.8	c352		c352	
NOTE: Should not be present in case of a single-segment XUDTS message.						

c351: IF A.7/3 THEN m ELSE n/a -- segmenting/reassembly supported
c352: IF A.35/7 THEN m ELSE n/a -- mandatory when optional parameters are present

Comments:

Table A.36: Subsystem Allowed (SSA)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
36/1	SCCP Management Format Identifier	Q.713 §5.1.1	m		m	
36/2	Affected Subsystem Number	Q.712 §2.2	m		m	
36/3	Affected Point Code	Q.712 §2.1	m		m	
36/4	Subsystem Multiplicity Indicator	Q.712 §2.18 (ffs)	m		m	
NOTE: Items 36/1 to 36/4 are part of the UserData parameter of a UDT message (see table A.32) or XUDT message (see table A.34).						

Comments:

Table A.37: Subsystem Prohibited (SSP)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
37/1	SCCP Management Format Identifier	Q.713 §5.1.1	m		m	
37/2	Affected Subsystem Number	Q.712 §2.2	m		m	
37/3	Affected Point Code	Q.712 §2.1	m		m	
37/4	Subsystem Multiplicity Indicator	Q.712 §2.18 (ffs)	m		m	
NOTE: Items 37/1 to 37/4 are part of the UserData parameter of a UDT message (see table A.32) or XUDT message (see table A.34).						

Comments:

Table A.38: Subsystem Status Test (SST)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
38/1	SCCP Management Format Identifier	Q.713 §5.1.1	m		m	
38/2	Affected Subsystem Number	Q.712 §2.2	m		m	
38/3	Affected Point Code	Q.712 §2.1	m		m	
38/4	Subsystem Multiplicity Indicator	Q.712 §2.18 (ffs)	m		m	
NOTE: Items 38/1 to 38/4 are part of the UserData parameter of a UDT message (see table A.32) or XUDT message (see table A.34).						

Comments:

Table A.39: Subsystem Out Of Service Request (SOR)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
39/1	SCCP Management Format Identifier	Q.713 §5.1.1	m		m	
39/2	Affected Subsystem Number	Q.712 §2.2	m		m	
39/3	Affected Point Code	Q.712 §2.1	m		m	
39/4	Subsystem Multiplicity Indicator	Q.712 §2.18 (ffs)	m		m	
NOTE: Items 39/1 to 39/4 are part of the UserData parameter of a UDT message (see table A.32) or XUDT message (see table A.34).						

Comments:

Table A.40: Subsystem Out Of Service Grant (SOG)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
40/1	SCCP Management Format Identifier	Q.713 §5.1.1	m		m	
40/2	Affected Subsystem Number	Q.712 §2.2	m		m	
40/3	Affected Point Code	Q.712 §2.1	m		m	
40/4	Subsystem Multiplicity Indicator	Q.712 §2.18 (ffs)	m		m	
NOTE: Items 40/1 to 40/4 are part of the UserData parameter of a UDT message (see table A.32) or XUDT message (see table A.34).						

Comments:

A.5.8 Multi-layer dependencies

The supplier of the implementation shall provide information relevant to the support for other layer standards in table A.41. Where appropriate, the supplier shall provide an external reference to the completed PICS for that layer standard. The purpose of this clause is to identify the implementation support for specific requirements on the underlying layers, not made mandatory by the underlying layer protocol specifications.

Table A.41: Underlying layers protocols

Item	Procedure	Reference	PICS references
41/1	MTP Level 2		
41/2	MTP Level 3		

Comments:

History

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