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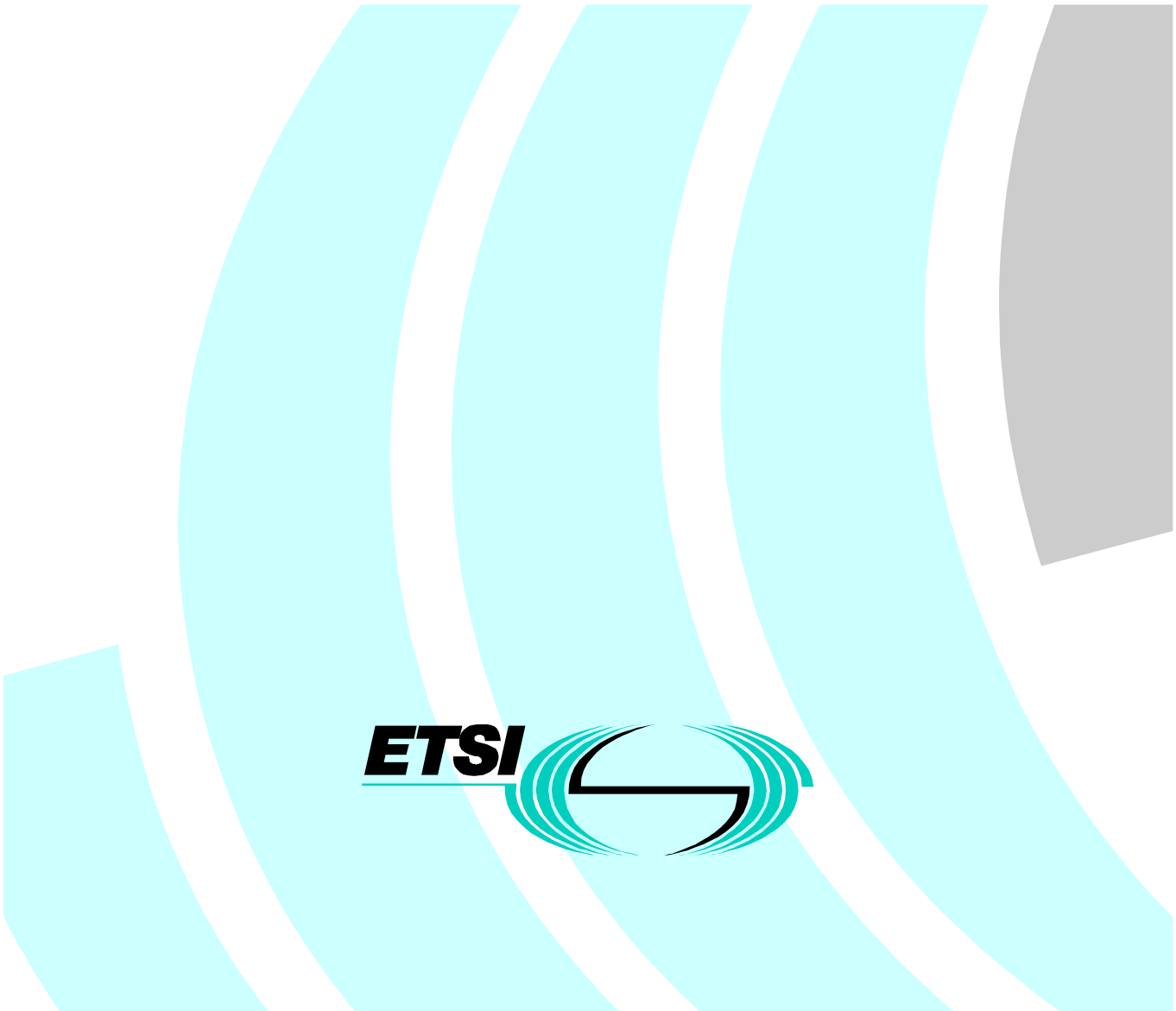
European Standard (Telecommunications series)

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

The present document 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".

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).

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 the present document and is required to provide the information necessary to identify both the supplier and the implementation.

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, subsequent revisions do apply.
- 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] 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".

[4] ITU-T Recommendation Q.1400 (3/93): "Architecture framework for the development of signalling and OA&M protocols using OSI concepts".

3 Definitions

For the purposes of the present document, 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 the present document, 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
ERR	protocol data unit ERRor message
FFS	For Further Study
GT	Global Title
i	irrelevant
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
o	optional
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
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
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 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 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.

c: Conditional upon the immediately previous item at the next higher level.

i irrelevant - this capability is outside the scope of the given base standard and hence irrelevant and not subject to conformance testing. No answer is requested from the supplier.

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, 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 or i, directly or after evaluation of a conditional status I).

NOTE 1: For automatic test selection, a N/A after evaluation of a conditional status has to be interpreted as not supported (N or n).

NOTE 2: 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.

Table A.1: Service Class

Item	Service Class	Reference	Status	Support
1/1	Class 0	Q.714 §1.1.2.1	m(note)	
1/2	Class 1	Q.714 §1.1.2.2	o	
1/3	Class 2	Q.714 §1.1.2.3	o	
1/4	Class 3	Q.714 §1.1.2.4	i	
NOTE: A.4/9 is mandatory, consequently class 0 is mandatory				

Comments:

A.5.1.2 SCCP routeing capabilities

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

Table A.2: Routeing functionalities

Item	Routeing functionality	Reference	Status	Support
2/1	End node	Q.714 §2.3	o.21	
2/1.1	Outgoing routing to remote subsystem after Global Title translation in own node (input: GT+[SSN])	Q.714 §2.3	c:o.22	
2/1.2	Outgoing routing to relay node after Global Title translation in own node (input: GT+[SSN])	Q.714 §2.3	c:o.22	
2/1.3	Outgoing routing to relay node identified by user (input: DPC+GT+[SSN])	Q.714 §2.3	c:o.22	
2/1.4	Incoming routing with translation to local subsystem (received: GT+[SSN])	Q.714 §2.3	c:o.22	
2/1.5	Internal routing to local subsystem (input: own SPC +SSN+[GT])	Q.714 §2.3	c:o	
2/1.6	Internal routing with Global Title translation to local subsystem (input: GT+[SSN])	Q.714 §2.3	c:o	
2/2	Relay node	Q.714 §2.3	o.21	
2/2.1	Incoming routing with translation to remote subsystem (received: GT+[SSN])	Q.714 §2.3	c:o.23	
2/2.2	Incoming routing with translation to relay node (received: GT+[SSN])	Q.714 §2.3	c:o.23	
2/2.3	Hop counter protection	Q.714 §2.3	c:m	
2/2.4	Coupling of connection sections	Q.714 §2.3	c:c.24	
2/3	Translation with selection of backup if the GT translation leads to an unavailable SCCP subsystem in the primary node	Q.714 §2.3	o	
2/4	Translation with selection of backup if the GT translation leads to an unavailable point code or SCCP in the primary node	Q.714 §2.3	o	
2/5	Capabilities to generate a new GT	Q.714 §2.3	o	
2/6	Capabilities to generate a new SSN	Q.714 §2.3	o	
2/7	Outgoing routing to remote subsystem (input: DPC+SSN+[GT])	Q.714 §2.3	m	
2/8	Incoming routing to local subsystem (received: [DPC]+SSN+[GT])	Q.714 §2.3	m	

o.21: support of at least one of these options is mandatory
o.22: support of at least one of these options is mandatory
o.23: support of at least one of these options is mandatory
c.24: IF A.1/3 THEN o ELSE n/a -- Class 2 implemented
Comments:

A.5.1.3 Called/Calling party 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 party address parameter.

Table A.3: Called/Calling party address options

Item	Option	Reference	Status	Support	Values	
					Required	Supported
3/1	Translation Type	Q.713 §3.4	c.31 (note 1)		0	
3/2	Numbering Plan	Q.713 §3.4	c.31 (note 1)		1..7	
3/3	Nature of the address	Q.713 §3.4	c.31 (note 1)		4	
¾	global title indicators	Q.713 §3.4	m		0,4	
3/5	Point code indicator	Q.713 §3.4	m (note 1)		0/1	
3/6	SSN indicator	Q.713 §3.4	m (note 2)		1	
3/7	Routeing 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 applications, 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.						

c.31: IF A.2/1.2 OR A.2/1.3 OR A.2/1.4 OR A.2/2 THEN m ELSE o -- Routeing capabilities with global title translation.
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.4.

Table A.4: SCCP management procedures

Item	Procedure	Reference	Status	Support
4/1	Signalling point status management	Q.714 §5.2	m	
4/2	Subsystem status management	Q.714 §5.3	m (note)	
4/3	Local MTP availability	Q.714 §5.2.5	m	
4/4	Co-ordinated state change between replicas	Q.714 §5.3.5	c41	
4/5	Local broadcast of remote subsystem, SCCP or SPC status changes	Q.714 §5.3.6	m	
4/6	Remote broadcast in case of subsystem or SCCP status changes at local or adjacent SPCs.	Q.714 §5.3.7	o	
4/7	Remote SCCP unavailable	Q.714 §5.2, §5.3	m (note)	
4/8	Signalling Point restart	Q.714 §5.4	m	
NOTE: mandatory because the 'user part availability control' capability at the underlying layer is mandatory.				

c41: IF A.2/1 THEN o ELSE n/a -- end node role
Comments:

A.5.3 Major capabilities - connectionless SCCP

The supplier of the implementation shall state whether or not the (signalling) connectionless procedures and options 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.5.

Table A.5: Procedures and options for data transfer in connectionless mode

Item	Procedure or option	Reference	Status	Support
5/1	Data transfer - non sequenced (Class 0), no return option using UDT or non-segmented XUDT	Q.714 §4.1	m (note 3)	
5/2	Data transfer, sequenced (Class 1)	Q.714 §4.1	c51	
5/3	Segmentation/reassembly	Q.714 §4.1.1	c52	
5/4	Message return option	Q.714 §4.2	c53 (note 4)	
5/5	Message return procedure	Q.714 §4.2	m (note 5)	
5/6	Syntax error	Q.714 §4.3	m (note 1)	
5/7	sending of XUDT for non-segmented messages	Q.714 §4.3	c54 (note 2)	
5/8	reception of XUDT for non-segmented messages	Q.714 §4.3	m (note 2)	
5/9	Sending of XUDT for non-segmented messages manageable	Q.714 §4.3	c55	

NOTE 1: Mandatory in end node (complete check) and in relay node (as far as needed to reliable 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). The sending of XUDT messages has to be manageable.
NOTE 3: The 'return option' is not offered to the SCCP-user or the SCCP-user does not request for the return option. SCCP does not set the 'return message on error' special option for the connectionless protocol class in the UDT or non-segmented XUDT.
NOTE 4: SCCP offers the 'return option' as a capability to its users in addition to capability 5/1.
NOTE 5: This capability comprises the 'message return' procedure which evaluates the 'message return on error' special option subfield of the protocol class parameter contained in the received UDT or XUDT message.

c51: IF A.1/2 THEN m ELSE x -- Class 1 implemented
c52 IF A.1/2 THEN o ELSE x -- Class 1 implemented
c53 IF A.2/1 THEN o ELSE n/a -- End node role
c54 IF A.2/2 THEN m ELSE o -- Relay node role
c55: IF A.5/7 AND A.2/1 THEN m ELSE n/a -- Sending of XUDT implemented and end node role
Comments:

A.5.4 Major capabilities - connection-oriented SCCP

The supplier of the implementation shall state whether or not the (signalling) connection-oriented procedures and options 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.6 to A.12.

Table A.6: Procedures and options for Connection establishment

Item	Procedure or option	Reference	Status	Support
6/1	Explicit setup, Class 2 in end node	Q.714 §3.1	c61	
6/2	Embedded setup, Class 2 in end node	Q.714 §3.1	c62	
6/3	explicit setup, Class 2 in relay node with coupling	Q.714 §3.1.5	c63	
6/4	Embedded setup, Class 2 in relay node with coupling	Q.714 §3.1.5	c64 (note)	
6/5	Explicit setup, refusal procedure	Q.714 §3.2	c65	
6/6	Embedded setup, refusal procedure	Q.714 §3.2	c66	
6/7	Responding address in CREF on user refusal	Q.711.§2.1.1.2.2	c61	
6/8	Responding address in CREF on SCCP refusal	Q.711.§2.1.1.2.2	c67	
6/9	Responding address in CC	Q.711.§2.1.1.2.2	c67	
6/7	Class 3 window negotiation	Q.714 §3.1.3	i	
6/8	Class 3 protocol class negotiation	Q.714§3.1.3.1 and 3.1.5.1	c68	
NOTE: SCCP-user available in the relay node.				

c61: IF A.1/3 AND A.2/1 THEN m ELSE n/a -- SUT = end node for connection-oriented
c62: IF A.1/3 AND A.2/1 THEN o ELSE n/a -- SUT = end node for connection-oriented
c63: IF A.1/3 AND A.2/2 AND A.2/2.4 THEN m ELSE n/a -- SUT = relay node for connection-oriented -- with coupling of connection sections
c64: IF A.1/3 AND A.2/2 AND A.2/2.4 THEN o ELSE n/a -- SUT = relay node for connection-oriented -- with coupling of connection sections
c65: IF A.6/1 OR A.6/3 THEN m ELSE n/a -- explicit setup in end node or relay node
c66: IF A.6/2 OR A.6/4 THEN m ELSE n/a -- embedded setup supported
c67 IF A.1/3 THEN o ELSE n/a -- class 2 supported
c68 IF A.6/1 OR A.6/2 OR A.6/3 OR A.6/4 THEN m ELSE n/a -- connection setup supported
Comments:

Table A.7: Procedures for connection release

Item	Procedure	Reference	Status	Support
7/1	Release procedure in end nodes	Q.714 §3.3.3/5	c71	
7/2	Release procedure in relay nodes with coupling	Q.714 §3.3.4	c72	

c71: IF A.1/3 AND A.2/1 THEN m ELSE x -- Class 2 in end nodes
c72: IF A.1/3 AND A.2/2.4 THEN m ELSE x -- Class 2 in relay node with coupling
Comments:

Table A.8: Procedure for inactivity control

Item	Procedure	Reference	Status	Support
8/1	Inactivity control for class 2	Q.714 §3.4	c81	
8/2	Inactivity control for Class 3	Q.714 §3.4	i	

c81: IF A.1/3 THEN m ELSE n/a -- Class 2 provided
Comments:

Table A.9: Procedures and options for data transfer in connection oriented mode

Item	Procedure or option	Reference	Status	Support
9/1	Data transfer Class 2 in end node	Q.714 §3.5.1	c91	
9/2	Data transfer in relay node with coupling	Q.714 §3.5.1	c92	
9/3	Data transfer Class 3 with flow control	Q.714 §3.5.2	i	
9/4	Data transfer, segmenting/reassembly	Q.714 §3.5.3	c91	
9/5	Expedited data transfer	Q.714 §3.6	i	
9/6	Data acknowledgement	Q.714 §3.6.3	i	
9/7	Data transfer in CR message	Q.711.§2.1.1.2.2	c93	
9/8	Data transfer in CC message	Q.711.§2.1.1.2.2	c93	
9/9	Data transfer in CREF message	Q.711.§2.1.1.2.2	c93	
9/10	Data transfer in RLSD message	Q.711.§2.1.1.2.4	c93	
NOTE 1: 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 [4], sect.12. NOTE 2: The transfer of data in CR/CC/CREF/RLSD messages is a user option.				

c91: IF A.1/3 AND A.2/1 THEN m ELSE n/a -- Class 2 in end nodes
c92: IF A.1/3 AND A.2/2.4 THEN m ELSE n/a -- Class 2 in relay node with coupling
c93: IF A.1/3 THEN o ELSE n/a -- Class 2
Comments:

Table A.10: Procedure for reset

Item	Procedure	Reference	Status	Support
10/1	Reset	Q.714 §3.7	i	

Comments:

Table A.11: Procedure for restart

Item	Procedure	Reference	Status	Support
11/1	Restart	Q.714 §3.8	c111	

c111: IF A.1/3 THEN m ELSE n/a -- Class 2
Comments:

Table A.12: Procedure for abnormalities

Item	Procedure	Reference	Status	Support
12/1	Abnormalities	Q.714 §3.10, annex B	c121	

c121: 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 table A.13.

Table A.13: Timers - SCCP

Item	Timer	Reference	Status	Support	Values	
					Allowed	Supported
13/1	T(conn est)	Q.714 §C.4	c131		1 mn to 2 min	
13/2	T(ias)	Q.714 §C.4	c131		1 mn to 10 min (note)	
13/3	T(iar)	Q.714 §C.4	c131		3 mn to 21 min (note)	
13/4	T(rel)	Q.714 §C.4	c131		10 s to 20 s	
13/5	T(guard)	Q.714 §C.4	c131		8 mn to 25 min (note)	
13/6	T(reset)	Q.714 §C.4	i		10 s to 20 s	
13/7	T(reassembly)	Q.714 §C.4	c132		10 s to 20 s	
13/8	T(coord)	Q.714 §C.4	c134		1 mn to 2 min	
13/9	T(interval)	Q.714 §C.4	c131		up to 1 min	
13/10	T(repeat rel)	Q.714 §C.4	c131		up to 20 s	
13/11	T(ignore SST)	Q.714 §C.4	c134		selected by management	
13/12	T(stat info)	Q.714 §C.4	c133		starting from 5 to 10 s to max. 10 mn 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.						

c131: IF A.1/3 THEN m ELSE n/a -- Class 2
c132: IF A.5/3 THEN m ELSE n/a -- connectionless segmenting/reassembly
c133: IF A.4/2 THEN m ELSE n/a -- SCCP subsystem management
c134: IF A.4/4 THEN m ELSE n/a -- co-ordinated state change procedure
Comments:

A.5.6 Messages

The supplier of the implementation shall state whether or not the messages specified in ITU-T Recommendations Q.711 to Q.714 as modified by ETS 300 009-1 [1] are supported, in table A.14. Support of a message implies full support of all message parameters, unless specifically covered by A.5.7.

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

Table A.14: Messages

Item	Message	Reference	Sending		Receiving	
			Status	Support	Status	Support
14/1	CC	Q.712 §1.1	c141		c141	
14/2	CR	Q.712 §1.2	c141		c141	
14/3	CREF	Q.712 §1.3	c141		c141	
14/4	AK	Q.712 §1.4	i		i	
14/5	DT1	Q.712 §1.5	c142		c142	
14/6	DT2	Q.712 §1.6	i		i	
14/7	ED	Q.712 §1.7	i		i	
14/8	EA	Q.712 §1.8	i		i	
14/9	IT	Q.712 §1.9	c143		c143	
14/10	ERR	Q.712 §1.10	c143		c143	
14/11	RLSD	Q.712 §1.11	c141		c141	
14/12	RLC	Q.712 §1.12	c141		c141	
14/13	RSC	Q.712 §1.13	i		i	
14/14	RSR	Q.712 §1.14	i		i	
14/15	SSA	Q.712 §1.15	m		m	
14/16	SOG	Q.712 §1.16	c144		c144	
14/17	SOR	Q.712 §1.17	c144		c144	
14/18	SSP	Q.712 §1.18	c145		m	
14/19	SST	Q.712 §1.19	m		m	
14/20	UDT	Q.712 §1.20	m		m	
14/21	UDTS	Q.712 §1.21	m		c146	
14/22	XUDT	Q.712 §1.22	c147		m	
14/23	XUDTS	Q.712 §1.23	m		c148	

c141: IF A.1/3 AND (A.2/1 OR A.2/2.4) THEN m ELSE x -- Class 2 and (end node or relay point with coupling)
c142: IF A.9/1 OR A.9/2 THEN m ELSE n/a -- data transfer provided
c143: IF A.1/3 THEN m ELSE n/a -- class 2
c144: IF A.4/4 THEN m ELSE n/a -- co-ordinated status change implemented
c145: IF A.2/1 THEN m ELSE o -- end node
c146: IF A.5/4 THEN m ELSE x -- message return option supported
c147: IF A.5/7 OR A.5/3 THEN m ELSE n/a -- sending of XUDT for non-segmented messages or
-- segmenting/reassembly supported
c148: IF A.5/4 AND (A.5/7 OR A.5/3) THEN m ELSE n/a -- XUDT messages sent with return option
Comments:

A.5.7 Message parameters

Unless specifically covered by a table listing message parameters and giving details regarding their status all parameters of a message are required to be fully supported.

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.15 to A.22.

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

NOTE: The status of the message parameters is subject to the implementation of the corresponding message (see table 14). When an unknown, unsupported or unrecognized 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.

Table A.15: Connection Request (CR)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
15/1	Message Type Code	Q.713 §2.1	m		m	
15/2	Source Local Reference Number	Q.712 §2.9	m		m	
15/3	Called Party Address	Q.712 §2.3	m		m	
15/4	Calling Party Address	Q.712 §2.3	o		o	
15/5	Protocol class	Q.712 §2.10	m		m	
15/6	Credit	Q.712 §2.4	i		i (note2)	
15/7	User Data	Q.712 §2.5	c151 (note 1)		c151	
15/8	Hop Counter	Q.712 §2.19	c152		c152	
15/9	End of Optional Parameters	Q.712 §2.8	c153		c154	
NOTE 1: dependent on user data being provided by the application in the originated node. NOTE 2: the base specifications only specify that an unrecognized parameter in a received message.has to be ignored. They do not specify any treatment for not supported parameters in a received message.						

c151: IF A.9/7 THEN m ELSE n/a -- user data in CR is supported
c152: IF A.2/2.3 THEN m ELSE n/a -- hop counter protection provided
c153: IF A.15/4 OR A.15/7 OR A.15/8 THEN m ELSE n/a -- mandatory when optional parameters are -- present
c154: IF A.15/4 OR A.15/6 OR A.15/7 OR A.15/8 THEN m ELSE n/a -- mandatory when optional parameters are -- present

Comments:

Table A.16: Connection Confirm (CC)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
16/1	Message Type Code	Q.713 §2.1	m		m	
16/2	Destination Local Reference Number	Q.712 §2.9	m		m	
16/3	Source Local Reference Number	Q.712 §2.9	m		m	
16/4	Called Party Address	Q.712 §2.3	c161		c161	
16/5	Protocol class	Q.712 §2.10	m		m	
16/6	Credit	Q.712 §2.4	i		i	
16/7	User Data	Q.712 §2.5	c162		c162	
16/8	End of Optional Parameters	Q.712 §2.8	c163		c163	

c161: IF A.6/9 THEN m ELSE n/a -- responding address in CC message
c162: IF A.9/8 THEN m ELSE n/a -- user data in CC is supported
c163: IF A.16/4 OR A.16/7 THEN m ELSE n/a -- mandatory when optional parameters are present

Comments:

Table A.17: Connection Refused (CREF)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
17/1	Message Type Code	Q.713 §2.1	m		m	
17/2	Destination Local Reference Number	Q.712 §2.9	m		m	
17/3	Called Party Address	Q.712 §2.3	c171		c171	
17/4	User Data	Q.712 §2.5	c172		c172	
17/5	Refusal Cause	Q.712 §2.12	m		m	
17/6	End Of Optional Parameters	Q.712 §8	c173		c173	

c171: IF A.6/7 THEN m ELSE n/a -- responding address in CREF message
c172: IF A.9/9 THEN m ELSE n/a -- user data in CREF is supported
c173: IF A.17/3 OR A.17/4 THEN m ELSE n/a -- mandatory when optional parameters are present

Comments:

Table A.18: Released (RLSD)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
18/1	Message Type Code	Q.713 §2.1	m		m	
18/2	Destination Local Reference Number	Q.712 §2.9	m		m	
18/3	Source Local Reference Number	Q.712 §2.9	m		m	
18/4	Release Cause	Q.712 §2.13	m		m	
18/5	User Data	Q.712 §2.5	c181		c181	
18/6	End of Optional Parameters	Q.712 §2.8	c182		c182	

c181: IF A.9/10 THEN m ELSE n/a -- data transport in RLSD is supported
c182: IF A.18/5 THEN m ELSE n/a -- mandatory when optional parameters are present
Comments:

Table A.19: Protocol Data Unit Error (ERR)

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	Error Cause	Q.712 §2.7	m		m	

Comments:

Table A.20: Inactivity Test (IT)

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	Source Local Reference Number	Q.712 §2.9	m		m	
20/4	Protocol class	Q.712 §2.10	m		m	
20/5	Sequencing/Segmenting	Q.712 §2.17	i (note)		i (note)	
20/6	Credit	Q.712 §2.4	i (note)		i (note)	
NOTE: These parameter fields are mandatory for protocol class 3 only.						

Comments:

Table A.21: Extended UnitData (XUDT)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
21/1	Message Type Code	Q.713 §2.1	m		m	
21/2	Protocol class	Q.712 §2.10	m		m	
21/3	Hop counter	Q.712 §2.19	m		m	
21/4	Called Party Address	Q.712 §2.3	m		m	
21/5	Calling Party Address	Q.712 §2.3	m		m	
21/6	UserData	Q.712 §2.5	m		m	
21/7	Segmentation (note)	Q.712 §2.20	c211		c211	
21/8	End Of Optional Parameters	Q.712 §2.8	c212		c212	
NOTE: Should not be present in case of a single-segment XUDT message.						

c211: IF A.5/3 THEN m ELSE n/a -- segmenting/reassembly supported
c212: IF A.21/7 THEN m ELSE n/a -- mandatory when optional parameters are present
Comments:

Table A.22: Extended UnitData Service (XUDTS)

Item	Parameter	Reference	Sending		Receiving	
			Status	Support	Status	Support
22/1	Message Type Code	Q.713 §2.1	m		m	
22/2	Return Cause	Q.712 §2.15	m		m	
22/3	Hop counter	Q.712 §2.19	m		m	
22/4	Called Party Address	Q.712 §2.3	m		m	
22/5	Calling Party Address	Q.712 §2.3	m		m	
22/6	UserData	Q.712 §2.5	m		m	
22/7	Segmentation (note)	Q.712 §2.20	c221		c221	
22/8	End Of Optional Parameters	Q.712 §2.8	c222		c222	
NOTE: Should not be present in case of a single-segment XUDTS message.						

c221: IF A.5/3 THEN m ELSE n/a -- segmenting/reassembly supported
c222: IF A.22/7 THEN m ELSE n/a -- mandatory when optional parameters are present
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.23. 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.23: Underlying layers protocols

Item	Procedure	Reference	PICS references
23/1	MTP		

Comments:

History

Document history				
V1.2.1	June 1998	Public Enquiry	PE 9843:	1998-06-03 to 1998-10-30