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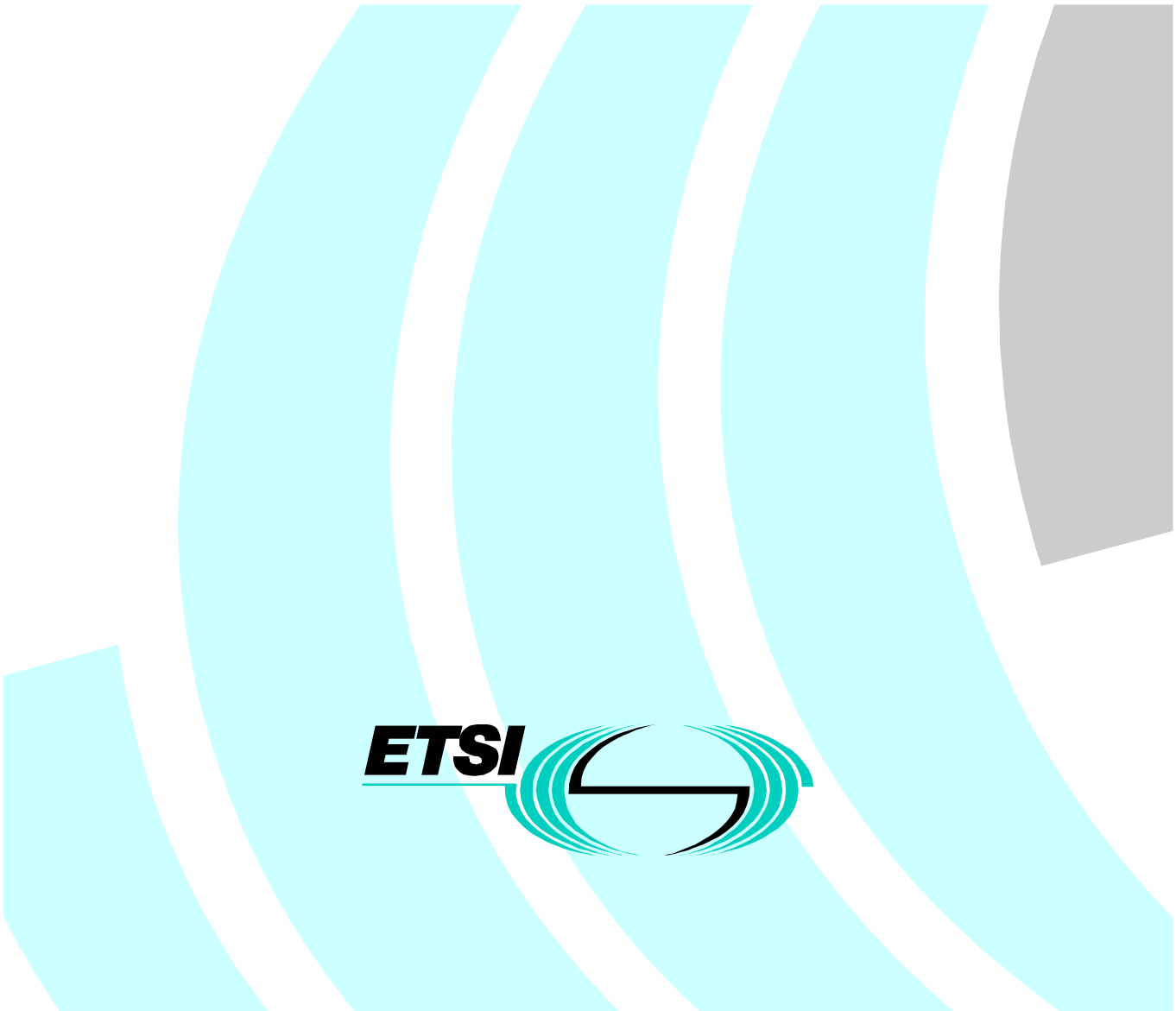
European Standard (Telecommunications series)

Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Teleaction service; Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification



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Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

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

The present document is part 2 of a multi-part standard covering the Digital Subscriber Signalling System No. one (DSS1) protocol specification for the Integrated Services Digital Network (ISDN) teleaction bearer service, as described below:

Part 1: "Protocol specification";

Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification".

In accordance with CCITT Recommendation I.130 [4], the following three level structure is used to describe the bearer services as provided by European public telecommunications operators under the pan-European ISDN:

- Stage 1: is an overall service description, from the user's standpoint;
- Stage 2: identifies the functional capabilities and information flows needed to support the service described in stage 1; and
- Stage 3: defines the signalling system protocols and switching functions needed to implement the service described in stage 1.

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a given Open Systems Interconnection (OSI) protocol. Such a statement is called a Protocol Implementation Conformance Statement (PICS).

National transposition dates	
Date of adoption of this EN:	12 March 1999
Date of latest announcement of this EN (doa):	30 June 1999
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 December 1999
Date of withdrawal of any conflicting National Standard (dow):	31 December 1999

1 Scope

This second part of EN 301 145 is applicable to the stage three of the Teleaction bearer service for the pan-European Integrated Services Digital Network (ISDN) as provided by European public telecommunications operators at the T reference point or coincident S and T reference point (as defined in ITU-T Recommendation I.411 [5]) by means of the Digital Subscriber Signalling System No. one (DSS1) protocol. Stage three identifies the protocol procedures and switching functions needed to support a telecommunications service (see CCITT Recommendation I.130 [4]).

The present document provides the Protocol Implementation Conformance Statement (PICS) proforma for the ISDN DSS1 teleaction bearer service protocol as specified in EN 301 145-1 [1] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [7].

The supplier of a protocol implementation which is claimed to conform to EN 301 145-1 [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, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1] EN 301 145-1 (V1.1): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Teleaction bearer service; Part 1: Protocol specification".

[2] ETS 300 402-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Data link layer; Part 1: General aspects [ITU-T Recommendation Q.920 (1993), modified]".

[3] ETS 300 402-2: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Data link layer; Part 2: General protocol specification [ITU-T Recommendation Q.921 (1993), modified]".

[4] CCITT Recommendation I.130 (1988): "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".

[5] CCITT Recommendation I.411 (1993): "ISDN user-network interfaces - Reference configurations".

[6] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

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

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following definitions apply, in addition to those given in EN 301 145-1 [1].

Protocol Implementation Conformance Statement (PICS): statement made by the supplier of an Open Systems Interconnection (OSI) implementation or system, stating which capabilities have been implemented for a given OSI protocol (see ISO/IEC 9646-1 [6]).

PICS proforma: document, in the form of a questionnaire, designed by the protocol specifier or conformance test suite specifier, which, when completed for an OSI implementation or system, becomes the PICS (see ISO/IEC 9646-1 [6]).

static conformance review: review of the extent to which the static conformance requirements are met by the IUT, accomplished by comparing the PICS with the static conformance requirements expressed in the relevant standard(s) (see ISO/IEC 9646-1 [6]).

3.2 Abbreviations

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

AND	Boolean "and"
C	Conditional requirement (to be observed if the relevant conditions apply)
CRF	Connection Related Function
DLCI	Data Link Connection Identifier
DSS1	Digital Subscriber Signalling System No. one
EUT	Equipment Under Test
FH	Frame Handler
IER	Information Elements Received
IET	Information Elements Transmitted
ISDN	Integrated Services Digital Network
IUT	Implementation Under Test
LAPD	Link Access Procedure on the D-channel
M	Mandatory requirement (to be observed in all cases)
MC	Major Capabilities
MR	Message Received
MT	Message Transmitted
N/A	Not applicable, not supported or the conditions for status are not met
No	not supported
NOT	Boolean "not"
NT2	Network Termination 2
O	Option (may be selected to suit the implementation, provided that any requirements applicable to the option are observed)
O.n	Options, but support required for either at least one or only one of the options in the group labelled with the same numeral "n"
OR	Boolean "or"
OSI	Open Systems Interconnection
P	Parameters
PDU	Protocol Data Unit
PH	Packet Handler
PICS	Protocol Implementation Conformance Statement
PTN	Private Telecommunications Network
R	Roles

RL	Requirements List
SC	Subsidiary Capabilities
SCS	System Conformance Statement
SPT	Service Provider Terminal
SUT	System Under Test
TA	Terminal Adapter
TE1	Terminal Equipment type 1
TMF	Teleaction Management Function
Yes	supported

4 Conformance

A PICS proforma which 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 which conforms to this PICS proforma specification shall:

a) describe an implementation which claims to conform to EN 301 145-1 [1];

b) be a conforming ICS 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

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 Instructions for completing the PICS proforma

A.1.1 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.

The System Conformance Statement (SCS) as defined in ISO/IEC 9646-1 [6] is a document supplied by the client or product supplier that summarizes which OSI International Standards, ITU-T (CCITT) Recommendations, ETSs or other standards are implemented and to which conformance is claimed. The PICS/SCS subclause should describe the relationship of the PICS to the SCS.

A.1.2 Global statement of conformance

If the answer to the statement in this subclause is "Yes", all subsequent subclauses should be completed to facilitate selection of test cases for optional functions.

If the answer to the statement in this subclause is "No", all subsequent subclauses should be completed, and all non-supported mandatory capabilities should be identified and explained. Explanations may be entered in the comments field at the bottom of each table or on attached sheets of paper.

A.1.3 Explanation of PICS proforma subclauses

The PICS proforma contains a Roles clause and thereafter is presented in three parts (for EUT, SPT and TMF) with the following subclauses, as required:

- major capabilities;
- subsidiary capabilities;
- protocol data unit support;
- protocol data unit parameters;
- timers;
- call states.

The EUT clause shall only be completed for EUT implementations (including private network implementations), the SPT clause shall only be completed for SPT implementations (including private network implementations) while the TMF clause shall only be completed for TMF implementations (including private network implementations). The Roles subclause shall be completed for all implementations.

The relationship between this PICS proforma and other related PICS proforma (e.g. the basic call PICS proforma) is expressed in the Requirements List (RL) contained in annex B. This provides the additional restrictions placed on the related proforma (different conditions, different status, etc.).

A.1.4 Symbols, abbreviations and terms

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 [7].

The reference column contained in the tables gives reference to the appropriate part(s) of EN 301 145-1 [1] describing the particular item. Note, however, that a reference merely indicates the place where the core of a description of an item can be found. Any additional information contained in EN 301 145-1 [1] has to be taken into account when making a statement about the conformance of that particular item.

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

M	mandatory;
O	optional;
N/A	not applicable;
O.<integer>	for mutually exclusive or selectable options from a set.

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

Y for supported/implemented;

N for not supported/not implemented.

A.2 Identification of the implementation

A.2.1 Implementation Under Test (IUT) identification

IUT name:

.....

.....

IUT version:

.....

A.2.2 System Under Test (SUT) identification

SUT name:

.....

.....

Hardware configuration:

.....

.....

.....

Operating system:

.....

.....

A.2.3 Product supplier

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

Additional information:

.....

.....

.....

A.2.4 Client

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

Additional information:

.....

.....

.....

A.2.5 PICS contact person

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

Additional information:

.....

.....

.....

A.3 PICS/System Conformance Statement (SCS)

Provide the relationship of the PICS with the SCS for the system:

.....

.....

.....

.....

A.4 Identification of the protocol

This PICS proforma applies to the following standard:

EN 301 145-1 (V1.1): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Teleaction bearer service; Part 1: Protocol specification".

A.5 Global statement of conformance

The implementation described in this PICS meets 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 in the comments field at the bottom of each table or on attached pages.

In the tabulations which follow, all references are to subclauses of EN 301 145-1 [1] unless another numbered reference is explicitly indicated.

A.6 Roles

Table A.1: Type of implementation

Item	Major role: Does the implementation...	Conditions for status	Status	Reference	Support
	Type of implementation				
R 1	not used?				
R 2.1	not used?				
R 2.2	not used?				
R 3.1	support requirements at S/T reference point?		O.1		[ ] Yes [ ] No
R 3.2	support requirements at T reference point?		O.1		[ ] Yes [ ] No
R 4.1	perform as an EUT?		O.2	9.1.1.1, 9.2	[ ] Yes [ ] No [ ] N/A
R 4.2	perform as an SPT?		O.2	9.1.1.2, 9.2	[ ] Yes [ ] No [ ] N/A
R 4.3	perform as an TMF?		O.2	9, 13	[ ] Yes [ ] No [ ] N/A
O.1 O.2	Support of at least one of these options is required. Support of one and only one of these options is required.				
Comments:					

A.7 EUT

The tables provided in this clause need only to be completed for implementations, where item R 4.1 in table A.1 is supported.

A.7.1 Major capabilities

Table A.2: Major capabilities

Item	Major capability: Does the implementation support...	Conditions for status	Status	Reference	Support
	General capabilities				
MC e1	semipermanent B channel physical interface?		O.3	6.2	[ ] Yes [ ] No
MC e2	D channel physical interface?		O.3	6.2	[ ] Yes [ ] No
MC e3	semipermanent link activation?		O.4	4.1	[ ] Yes [ ] No
MC e4	on demand fixed TEI link activation?		O.4	4.2	[ ] Yes [ ] No
MC e5	polling procedures?		M	13.2.2	[ ] Yes [ ] No
MC e6	alarm reporting?		M	13.2.3	[ ] Yes [ ] No
MC e7	alarm clearing?		M	13.2.4	[ ] Yes [ ] No
O.3: Support of at least one of these options is required. O.4: Support of at least one of these options is required.					
Comments:					

A.7.2 Subsidiary capabilities

Table A.3: Subsidiary capabilities

Item	Subsidiary capability: Does the implementation support...	Conditions for status	Status	Reference	Support
SC e1	ignoring of undefined information elements received?		M	9.3	[ ] Yes [ ] No
SC e2	discarding of unrecognized messages?		M	9.3	[ ] Yes [ ] No
Comments:					

A.7.3 Protocol data units

A.7.3.1 Messages Received (MR)

Table A.4: Messages received by the EUT

Item	Message Does the implementation support receipt of...	Conditions for status	Status	Reference	Support
MRe1	LOOP REQUEST?		M	7.1.2.1	[ ] Yes [ ] No
MRe2	LOOP RESPONSE?		N/A	7.1.2.2	[ ] N/A
MRe3	REPORT?		M	7.1.2.3	[ ] Yes [ ] No
Comments:					

A.7.3.2 Messages transmitted (MT)

Table A.5: Messages Transmitted by the EUT

Item	Message Does the implementation support transmission of...	Conditions for status	Status	Reference (subclause)	Support
MTe1	LOOP REQUEST?		N/A	7.1.2.1	[ ] N/A
MTe2	LOOP RESPONSE?		M	7.1.2.2	[ ] Yes [ ] No
MTe3	REPORT?		M	7.1.2.3	[ ] Yes [ ] No
Comments:					

A.7.4 Protocol data unit parameters

A.7.4.1 Information Elements Received (IER)

Table A.6: Information elements in LOOP REQUEST received by the EUT

Item	Information element Does the implementation support receipt of...	Conditions for status	Status	Reference (subclause)	Support
Mre1-IE1	Message type information element?		M	7.1.3.1	[ ] Yes [ ] No
Mre1-IE2	Loop originator information element?		M	7.1.3.3	[ ] Yes [ ] No
Mre1-IE3	Loop destination information element?		M	7.1.3.4	[ ] Yes [ ] No
Mre1-IE4	Diagnostic information element?		O	7.1.3.5	[ ] Yes [ ] No
Mre1-IE5	Test data information element?		O	7.1.3.8	[ ] Yes [ ] No
Comments:					

Table A.7: Information elements in REPORT received by the EUT

Item	Information element Does the implementation support receipt of...	Conditions for status	Status	Reference (subclause)	Support
Mre2-IE1	Message type information element?		M	7.1.3.1	[ ] Yes [ ] No
Mre2-IE2	Diagnostic information element?		M	7.1.3.5	[ ] Yes [ ] No
Mre2-IE3	Report type information element?		M	7.1.3.6	[ ] Yes [ ] No
Mre2-IE4	Terminal data information element?		O	7.1.3.7	[ ] Yes [ ] No
Comments:					

A.7.4.2 Information Elements Transmitted (IET)

Table A.8: Information elements in LOOP RESPONSE transmitted by the EUT

Item	Information element Does the implementation support transmission of...	Conditions for status	Status	Reference (subclause)	Support
Mte1-IE1	Message type information element?		M	7.1.3.1	[ ] Yes [ ] No
Mte1-IE2	Loop originator information element?		M	7.1.3.3	[ ] Yes [ ] No
Mte1-IE3	Loop destination information element?		M	7.1.3.4	[ ] Yes [ ] No
Mte1-IE4	Diagnostic information element?		M	7.1.3.5	[ ] Yes [ ] No
Mte1-IE5	Test data information element?		O	7.1.3.8	[ ] Yes [ ] No
Comments:					

Table A.9: Information elements in REPORT transmitted by the EUT

Item	Information element Does the implementation support transmission of...	Conditions for status	Status	Reference (subclause)	Support
Mte2-IE1	Message type information element?		M	7.1.3.1	[ ] Yes [ ] No
Mte2-IE2	Diagnostic information element?		M	7.1.3.5	[ ] Yes [ ] No
Mte2-IE3	Report type information element?		M	7.1.3.6	[ ] Yes [ ] No
Mte2-IE4	Terminal data information element?		O	7.1.3.7	[ ] Yes [ ] No
Comments:					

A.7.5 Protocol data unit parameters coding

Table A.10: Loop originator information element

Item	Does the implementation support Loop originator information element parameters and values...	Conditions for status	Status	Values	Support
Pe 1	PH?		N/A	64	[ ] Yes [ ] No
Pe 2	TMF?		M	96	[ ] Yes [ ] No

Table A.11: Loop destination information element

Item	Does the implementation support Loop destination information element parameters and values...	Conditions for status	Status	Values	Support
Pe 1	TE1?	R 3.1 NOT R 3.1	O.5 N/A	1	[ ] Yes [ ] No [ ] N/A
Pe 2	TA?	R 3.1 NOT R 3.1	O.5 N/A	2	[ ] Yes [ ] No [ ] N/A
Pe 3	NT2?	R 3.2 NOT R 3.2	O.6	4	[ ] Yes [ ] No [ ] N/A
Pe 4	PTN?	R 3.2 NOT R 3.2	O.6 N/A	8	[ ] Yes [ ] No [ ] N/A
Pe 5	LAPD termination?		M	15	[ ] Yes [ ] No
Pe 6	FH CRF-S?		N/A	128	[ ] N/A
Pe 7	FH CRF-P?		N/A	129	[ ] N/A
O.5	Support of at least one of these options is required.				
O.6	Support of at least one of these options is required.				

Table A.12: Diagnostic information element

Item	Does the implementation support Diagnostic information element parameters and values...	Conditions for status	Status	Values	Support
Pe 1	Loop successful?		M	0	[ ] Yes [ ] No
Pe 2	DLCI not registered?		M	1	[ ] Yes [ ] No
Pe 3	Loop destination unreachable?		M	2	[ ] Yes [ ] No
Pe 4	Transmission path unavailable due to network element failure?		M	3	[ ] Yes [ ] No
Pe 5	Transmission path unavailable due to customer interface/premises failure?		M	4	[ ] Yes [ ] No
Pe 6	EUT not subscribed		N/A	5	[ ] N/A
Pe 7	Status information unavailable		N/A	6	[ ] N/A

Table A.13: Report type information element

Item	Does the implementation support Report type information element parameters and values...	Conditions for status	Status	Values	Support
Pe 1	Alarm event?		M	0	[ ] Yes [ ] No
Pe 2	Alarm cleared?		M	1	[ ] Yes [ ] No
Pe 3	Broadcast request?		N/A	2	[ ] N/A
Pe 4	Broadcast confirm?		N/A	3	[ ] N/A
Pe 5	Broadcast denied - functionality not implemented?		N/A	4	[ ] N/A
Pe 6	Broadcast denied - maximum number of requests exceeded		N/A	5	[ ] N/A
Pe 7	Broadcast denied - identical outstanding request		N/A	6	[ ] N/A
Pe 8	Status report request		N/A	7	[ ] N/A
Pe 9	Status report response		N/A	8	[ ] N/A

A.7.6 Timers

No items requiring response.

A.7.7 Call states

No items requiring response.

A.8 SPT

The tables provided in this clause only need to be completed for implementations, where item R 4.2 in table A.1 is supported.

A.8.1 Major capabilities

Table A.14: Major capabilities

Item	Major capability: Does the implementation support...	Conditions for status	Status	Reference (subclause)	Support
	General capabilities				
MC s1	semipermanent B channel physical interface?		O.7	6.2	[ ] Yes [ ] No
MC s2	D channel physical interface?		O.7	6.2	[ ] Yes [ ] No
MC s3	semipermanent link activation?		O.8	4.1	[ ] Yes [ ] No
MC s4	on demand fixed TEI link activation?		O.8	4.2	[ ] Yes [ ] No
MC s5	polling procedures?		M	13.2.2	[ ] Yes [ ] No
MC s6	alarm reporting?		M	13.2.3	[ ] Yes [ ] No
MC s7	alarm clearing?		M	13.2.4	[ ] Yes [ ] No
MC s8	broadcast functions?		O N/A	13.3	[ ] Yes [ ] No [ ] N/A
MC s9	Status request procedure		M	13.4	[ ] Yes [ ] No
O.7: O.8:	Support of at least one of these options is required. Support of at least one of these options is required.				
Comments:					

A.8.2 Subsidiary capabilities

Table A.15: Subsidiary capabilities

Item	Subsidiary capability: Does the implementation support...	Conditions for status	Status	Reference (subclause)	Support
SC s1	discarding of EUT originated REPORT messages which do not contain a valid DLCI?		O	9.3	[ ] Yes [ ] No
SC s2	ignoring of undefined information elements received?		M	9.3	[ ] Yes [ ] No
SC s3	discarding of unrecognized messages?		M	9.3	[ ] Yes [ ] No
SC s4	Multiple outstanding broadcast requests	MC 9 NOT MC 9	O N/A	13.3	[ ] Yes [ ] No [ ] N/A
Comments:					

A.8.3 Protocol Data Units (PDU)

A.8.3.1 MR by the SPT

Indicating support for an item in table A.16 states that the implementation has the ability to recognize the message listed in that item. Support for the receipt of a particular type of PDU means support for recognizing and acting upon all valid instances of that PDU type, including all valid PDU parameters, to the extent required by only EN 301 145-1 [1].

Table A.16: Messages received by the SPT

Item	Message Does the implementation support receipt of...	Conditions for status	Status	Reference	Support
MR s1	LOOP REQUEST?		M N/A	7.1.2.1	[ ] Yes [ ] No [ ] N/A
MR s2	LOOP RESPONSE?		N/A	7.1.2.2	[ ] N/A
MR s3	REPORT?		M	7.1.2.3	[ ] Yes [ ] No
Comments:					

A.8.3.2 MT by the SPT

Indicating support for an item in table A.17 states that the implementation has the ability to transmit the message listed in that item.

Table A.17: Messages transmitted by the SPT

Item	Message Does the implementation support transmission of...	Conditions for status	Status	Reference (subclause)	Support
MT s1	LOOP REQUEST?		N/A	7.1.2.1	[ ] N/A
MT s2	LOOP RESPONSE?		M	7.1.2.2	[ ] Yes [ ] No
MT s3	REPORT?		M	7.1.2.3	[ ] Yes [ ] No
Comments:					

A.8.4 Protocol data unit parameters

A.8.4.1 IER

Table A.18: Information elements in LOOP REQUEST received by the SPT

Item	Information element Does the implementation support receipt of...	Conditions for status	Status	Reference (subclause)	Support
MRs1-IE1	Message type information element?		M	7.1.3.1	[ ] Yes [ ] No
MRs1-IE2	Loop originator information element?		M	7.1.3.3	[ ] Yes [ ] No
MRs1-IE3	Loop destination information element?		M	7.1.3.4	[ ] Yes [ ] No
MRs1-IE4	Diagnostic information element?		O	7.1.3.5	[ ] Yes [ ] No
MRs1-IE5	Test data information element?		O	7.1.3.8	[ ] Yes [ ] No
Comments:					

Table A.19: Information elements in REPORT received by the SPT

Item	Information element Does the implementation support receipt of...	Conditions for status	Status	Reference (subclause)	Support
MRs2-IE1	Message type information element?		M	7.1.3.1	[ ] Yes [ ] No
MRs2-IE2	DLCI information element?	R3.1 NOT R3.1	O N/A	7.1.3.2	[ ] Yes [ ] No
MRs2-IE3	Diagnostic information element?		M	7.1.3.5	[ ] Yes [ ] No
MRs2-IE4	Report type information element?		M	7.1.3.6	[ ] Yes [ ] No [ ] N/A
MRs2-IE5	Terminal data information element?		O	7.1.3.7	[ ] Yes [ ] No
Comments:					

A.8.4.2 IET

Table A.20: Information elements in LOOP RESPONSE transmitted by the SPT

Item	Information element Does the implementation support transmission of...	Conditions for status	Status	Reference (subclause)	Support
MTs1-IE1	Message type information element?		M	7.1.3.1	[ ] Yes [ ] No
MTs1-IE2	Loop originator information element?		M	7.1.3.3	[ ] Yes [ ] No
MTs1-IE3	Loop destination information element?		M	7.1.3.4	[ ] Yes [ ] No
MTs1-IE4	Diagnostic information element?		M	7.1.3.5	[ ] Yes [ ] No
MTs1-IE5	Test data information element?		O	7.1.3.8	[ ] Yes [ ] No
Comments:					

Table A.21: Information elements in REPORT transmitted by the SPT

Item	Information element Does the implementation support transmission of...	Conditions for status	Status	Reference (subclause)	Support
MTs2-IE1	Message type information element?		M	7.1.3.1	[ ] Yes [ ] No
MTs2-IE2	Diagnostic information element?		M	7.1.3.5	[ ] Yes [ ] No
MTs2-IE3	Report type information element?		M	7.1.3.6	[ ] Yes [ ] No
MTs2-IE4	Terminal data information element?		O	7.1.3.7	[ ] Yes [ ] No
Comments:					

A.8.5 PDU parameters coding

Table A.22: Loop originator information element

Item	Does the implementation support Loop originator information element parameters and values...	Conditions for status	Status	Values	Support
Ps 1	PH?		N/A	64	[ ] Yes [ ] No
Ps 2	TMF?		M	96	[ ] Yes [ ] No

Table A.23: Loop destination information element

Item	Does the implementation support Loop destination information element parameters and values...	Conditions for status	Status	Values	Support
Ps 1	TE1?	R 3.1 NOT R3.1	O.9 N/A	1	[ ] Yes [ ] No [ ] N/A
Ps 2	TA?	R3.1 NOT R3.1	O.9 N/A	2	[ ] Yes [ ] No [ ] N/A
Ps 3	NT2?	R 3.2 NOT R 3.2	O.10 N/A	4	[ ] Yes [ ] No [ ] N/A
Ps 4	PTN?	R 3.2 NOT R 3.2	O.10 N/A	8	[ ] Yes [ ] No [ ] N/A
Ps 5	LAPD termination?		M	15	[ ] Yes [ ] No
Ps 6	FH CRF-S?		N/A	128	[ ] N/A
Ps 7	FH CRF-P?		N/A	129	[ ] N/A
O.9:	Support of at least one of these options is required.				
O.10:	Support of at least one of these options is required.				

Table A.24: Diagnostic information element

Item	Does the implementation support Diagnostic information element parameters and values...	Conditions for status	Status	Values	Support
Ps 1	Loop successful?		M	0	[ ] Yes [ ] No
Ps 2	DLCI not registered?		M	1	[ ] Yes [ ] No
Ps 3	Loop destination unreachable?		M	2	[ ] Yes [ ] No
Ps 4	Transmission path unavailable due to network element failure?		M	3	[ ] Yes [ ] No
Ps 5	Transmission path unavailable due to customer interface/premises failure?		M	4	[ ] Yes [ ] No
Ps 6	EUT not subscribed		M	5	[ ] Yes [ ] No
Ps 7	Status information unavailable		M	6	[ ] Yes [ ] No

Table A.25: Report type information element

Item	Does the implementation support Report type information element parameters and values...	Conditions for status	Status	Values	Support
Ps 1	Alarm event?		M	0	[ ] Yes [ ] No
Ps 2	Alarm cleared?		M	1	[ ] Yes [ ] No
Ps 3	Broadcast request?	MC8 NOT MC8	M N/A	2	[ ] Yes [ ] No [ ] N/A
Ps 4	Broadcast confirm?	MC8 NOT MC8	M N/A	3	[ ] Yes [ ] No [ ] N/A
Ps 5	Broadcast denied - functionality not implemented?	MC8 NOT MC8	M N/A	4	[ ] Yes [ ] No [ ] N/A
Ps 6	Broadcast denied – maximum number of requests exceeded	SC4 NOT SC4	M N/A	5	[ ] Yes [ ] No [ ] N/A
Ps 7	Broadcast denied - identical outstanding request	SC4 NOT SC4	M N/A	6	[ ] Yes [ ] No [ ] N/A
Ps 8	Status report request		M	7	[ ] Yes [ ] No
Ps	Status report response		M	8	[ ] Yes [ ] No

A.8.6 Timers

No items requiring response.

A.8.7 Call states

No items requiring response.

A.9 TMF

The tables provided in this clause need only to be completed for implementations, where item R 4.3 in table A.1 is supported.

A.9.1 Major capabilities

Table A.26: Major capabilities - TMF

Item	Major capability: Does the implementation support...	Conditions for status	Status	Reference	Support
	General capabilities				
MCt1	semipermanent B channel physical interace?		O.11	6.2	[ ] Yes [ ] No
MC t2	D channel physical interface?		O.11	6.2	[ ] Yes [ ] No
MC t3	semipermanent link activation?		O.12	4.1	[ ] Yes [ ] No
MC t4	on demand fixed TEI link activation?		O.12	4.2	[ ] Yes [ ] No
MC t5	polling procedures?		M	13.2.2	[ ] Yes [ ] No
MC t6	alarm reporting?		M	13.2.3	[ ] Yes [ ] No
MC t7	alarm clearing?		M	13.2.4	[ ] Yes [ ] No
MC t8	broadcast functions?		O	13.3	[ ] Yes [ ] No
MC t9	Status request procedures		M	13.4	[ ] Yes [ ] No
O.11	Support of at least one of these options is required.				
O.12	Support of at least one of these options is required.				
Comments:					

A.9.2 Subsidiary capabilities

Table A.27: Subsidiary capabilities - TMF

Item	Subsidiary capability: Does the implementation support...	Conditions for status	Status	Reference (subclause)	Support
SC t1	user plane protocol between SPT and EUT?		O	5.2	[ ] Yes [ ] No
SC t2	initiation of loopback procedure on activated datalinks?		O.13	13.2.1	[ ] Yes [ ] No
SC t3	initiation of loopback procedure on deactivated datalinks?		O.13	13.2.1	[ ] Yes [ ] No
SC t4	independent routing of loopback requests for deactivated links over different physical interfaces?	SC3 NOT SC3	O N/A	13.2.1	[ ] Yes [ ] No [ ] N/A
SC t5	delay of datalink disconnection after clearing of last call to SPT?	SC1 NOT SC1	O N/A	9.2.2	[ ] Yes [ ] No [ ] N/A
SC t6	ignoring of undefined information elements received?		M	9.3	[ ] Yes [ ] No
SC t7	discarding of unrecognized messages?		M	9.3	[ ] Yes [ ] No
SC t8	immediate transfer of REPORT messages to SPT?		O.14	13.2.3.1	[ ] Yes [ ] No
SC t9	delayed transfer of REPORT messages to SPT?		O.14	13.2.3.1	[ ] Yes [ ] No
SC t10	Multiple broadcast requests from SPT	MC 8 NOT MC 8	O N/A	13.3	[ ] Yes [ ] No [ ] N/A
O.13	Support of at least one of these options is required.				
O.14	Support of at least one of these options is required.				
Comments:					

A.9.3 Protocol Data Units

A.9.3.1 MR by the TMF

Indicating support for an item in table A.28 states that the implementation has the ability to recognize the message listed in that item. Support for the receipt of a particular type of PDU means support for recognizing and acting upon all valid instances of that PDU type, including all valid PDU parameters, to the extent required by EN 301 145-1 [1].

Table A.28: Messages received by the TMF

Item	Message Does the implementation support receipt of...	Conditions for status	Status	Reference (subclause)	Support
MR t1	LOOP REQUEST?		N/A	7.1.2.1	[ ] N/A
MR t2	LOOP RESPONSE?		M	7.1.2.2	[ ] Yes [ ] No
MR t3	REPORT?		M	7.1.2.3	[ ] Yes [ ] No
Comments:					

A.9.3.2 MT by the TMF

Indicating support for an item in table A.29 states that the implementation has the ability to transmit the message listed in that item.

Table A.29: Messages transmitted by the TMF

Item	Message Does the implementation support transmission of...	Conditions for status	Status	Reference (subclause)	Support
MT t1	LOOP REQUEST?		M	7.1.2.1	[ ] Yes [ ] No
MT t2	LOOP RESPONSE?		N/A	7.1.2.2	[ ] N/A
MT t3	REPORT?		M	7.1.2.3	[ ] Yes [ ] No
Comments:					

A.9.4 Protocol Data Unit parameters

A.9.4.1 IER

Table A.30: Information elements in LOOP RESPONSE received by the TMF

Item	Information element Does the implementation support receipt of...	Conditions for status	Status	Reference	Support
MRt1-IE1	Message type information element?		M	7.1.3.1	[ ] Yes [ ] No
MRt1-IE2	Loop originator information element?		M	7.1.3.3	[ ] Yes [ ] No
MRt1-IE3	Loop destination information element?		M	7.1.3.4	[ ] Yes [ ] No
MRt1-IE4	Diagnostic information element?		M	7.1.3.5	[ ] Yes [ ] No
MRt1-IE5	Test data information element?		O	7.1.3.8	[ ] Yes [ ] No
Comments:					

Table A.31: Information elements in REPORT received by the TMF

Item	Information element Does the implementation support receipt of...	Conditions for status	Status	Reference	Support
MRt2-IE1	Message type information element?		M	7.1.3.1	[ ] Yes [ ] No
MRt2-IE2	Diagnostic information element?		M	7.1.3.5	[ ] Yes [ ] No
MRt2-IE3	Report type information element?		M	7.1.3.6	[ ] Yes [ ] No
MRt2-IE4	Terminal data information element?		O	7.1.3.7	[ ] Yes [ ] No
Comments:					

A.9.4.2 IET

Table A.32: Information elements in LOOP REQUEST transmitted by the TMF

Item	Information element Does the implementation support transmission of...	Conditions for status	Status	Reference	Support
MTt1-IE1	Message type information element?		M	7.1.3.1	[ ] Yes [ ] No
MTt1-IE2	Loop originator information element?		M	7.1.3.3	[ ] Yes [ ] No
MTt1-IE3	Loop destination information element?		M	7.1.3.4	[ ] Yes [ ] No
MTt1-IE4	Diagnostic information element?		M	7.1.3.5	[ ] Yes [ ] No
MTt1-IE5	Test data information element?		O	7.1.3.8	[ ] Yes [ ] No
Comments:					

Table A.33: Information elements in REPORT transmitted by the TMF

Item	Information element Does the implementation support transmission of...	Conditions for status	Status	Reference	Support
MTt2-IE1	Message type information element?		M	7.1.3.1	[ ] Yes [ ] No
MTt2-IE2	DLCI information element?		O	7.1.3.2	[ ] Yes [ ] No
MTt2-IE3	Diagnostic information element?		M	7.1.3.5	[ ] Yes [ ] No
MTt2-IE4	Report type information element?		M	7.1.3.6	[ ] Yes [ ] No
MTt2-IE5	Terminal data information element?		O	7.1.3.7	[ ] Yes [ ] No
Comments:					

A.9.5 Protocol Data Unit parameters coding

Table A.34: Loop originator information element

Item	Does the implementation support Loop originator information element parameters and values...	Conditions for status	Status	Values	Support
Pt 1	PH?		N/A	64	N/A
Pt 2	TMF?		M	96	[ ] Yes [ ] No

Table A.35: Loop destination information element

Item	Does the implementation support Loop destination information element parameters and values...	Conditions for status	Status	Values	Support
Pt 1	TE1?		M	1	[ ] Yes [ ] No
Pt 2	TA?		M	2	[ ] Yes [ ] No
Pt 3	NT2?		M	4	[ ] Yes [ ] No
Pt 4	PTN?		M	8	[ ] Yes [ ] No
Pt 5	LAPD termination?		M	15	[ ] Yes [ ] No
Pt 6	FH CRF-S?		M	128	[ ] Yes [ ] No
Pt 7	FH CRF-P?		M	129	[ ] Yes [ ] No

Table A.36: Diagnostic information element

Item	Does the implementation support Diagnostic information element parameters and values...	Conditions for status	Status	Values	Support
Pt 1	Loop successful?		M	0	[ ] Yes [ ] No
Pt 2	DLCI not registered?		M	1	[ ] Yes [ ] No
Pt 3	Loop destination unreachable?		M	2	[ ] Yes [ ] No
Pt 4	Transmission path unavailable due to network element failure?		M	3	[ ] Yes [ ] No
Pt 5	Transmission path unavailable due to customer interface/premises failure?		M	4	[ ] Yes [ ] No
Pt 6	EUT not subscribed		M	5	[ ] Yes [ ] No
Pt 7	Status information unavailable		M	6	[ ] Yes [ ] No

Table A.37: Report type information element

Item	Does the implementation support Report type information element parameters and values...	Conditions for status	Status	Values	Support
Pt 1	Alarm event?		M	0	[ ] Yes [ ] No
Pt 2	Alarm cleared?		M	1	[ ] Yes [ ] No
Pt 3	Broadcast request?	MC8 NOT MC8	M N/A	2	[ ] Yes [ ] No [ ] N/A
Pt 4	Broadcast confirm?	MC8 NOT MC8	M N/A	3	[ ] Yes [ ] No [ ] N/A
Pt 5	Broadcast denied - functionality not implemented?	MC8 NOT MC8	M N/A	4	[ ] Yes [ ] No [ ] N/A
Pt 6	Broadcast denied - maximum number of requests exceeded	SC10 NOT SC10	M N/A	5	[ ] Yes [ ] No [ ] N/A
Pt 7	Broadcast denied - identical outstanding request	SC10 NOT SC10	M N/A	6	[ ] Yes [ ] No [ ] N/A
Pt 8	Status report request		M	7	[ ] Yes [ ] No
Pt 9	Status report response		M	8	[ ] Yes [ ] No

A.9.6 Timers

No items requiring response.

A.9.7 Call states

No items requiring response.

Annex B (normative): Requirements list

This annex repeats in the form of a requirements list some items of the basic call data link layer service PICS proforma required for support of EN 301 145-1 [1]. No support column is provided as the answers are to be entered in the relevant base PICS proforma.

In the tables which follow in this annex, the status of the base PICS proforma is indicated as "C" (conditional) or "O" (optional). The "C" status is used where the base PICS proforma contains a number of interdependent items which need not be repeated in the present document. "O" indicates that the item in the base PICS proforma is dependent on one or more other items, at least one of which has an optional status. The exact interdependency is fully specified in the base PICS proforma specification.

B.1 User

B.1.1 Requirements on items used in the basic call data link layer PICS

All references are to EN 301 145-1 [1] unless otherwise stated.

B.1.1.1 Major capabilities

Table B.1: Major capabilities - user

Item	Major capability: does the IUT support...	Status base	Teleaction service conditions for status	Teleaction service status	Reference
MCu 2.2	the unacknowledged information transfer service in a point-to-point data link (using a TEI value other than 127)?	O	MC 5 OR MC 6 OR MC 7 OR MC 8	M	14, [3] 5.2, 5.2.1
MCu 3.1.2	the non-automatic TEI assignment procedures?	C	MC3 OR MC4	M	5, [3] 5.3.2
MCu 5.1.1	the self initiated establishment of multiple frame operation?	O		O	5, 10.1, 10.2, [3] 5.5.1, 5.5.5, 5.5.6
MCu 5.2.1	the self initiated termination of multiple frame operation?	O		O	5, 10.1, 10.2, [3] 5.5.3, 5.5.5, 5.5.6

B.1.1.2 Address field variables

Table B.2: SAPI values supported - user

Item	Does the IUT support the ...	Status base	Teleaction service conditions for status	Teleaction service status	Reference
SAPu 2	SAPI value 12?	O		M	5, [2] 3.3.3

B.2 Network

B.2.1 Requirements on items used in the basic call data link layer PICS

All references are to EN 310 145-1 [1] unless otherwise stated.

B.2.1.1 Major capabilities

Table B.3: Major capabilities - network

Item	Major capability: does the IUT support...	Status base	Teleaction service conditions for status	Teleaction service status	Reference
MCn 2.2	the unacknowledged information transfer service in a point-to-point data link (using a TEI value other than 127)?	O	MCn 5,6,7,8	M	14, [3] 5.2, 5.2.1
MCn 5.1.1	the self initiated establishment of multiple frame operation?	O	MCn 3 OR MCn 4	O	10, [3] 5.5.1, 5.5.5, 5.5.6
MCn 5.2.1	the self initiated termination of multiple frame operation?	O	MCn 4 NOT MCn4	O N/A	10, [3] 5.5.3, 5.5.5, 5.5.6

B.2.1.2 Address field variables

Table B.4: SAPI values supported - network

Item	Does the IUT support the ...	Status base	Teleaction service conditions for status	Teleaction service status	Reference
SAPn 2	SAPI value 12?	O		M	5, [2] 3.3.3

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