

**V interfaces at the digital Local Exchange (LE);
V5.1 interface for the support of Access Network (AN);
Part 2: Protocol Implementation Conformance Statement
(PICS) proforma specification**



Reference

REN/SPS-09050-2 (300i0ipc.PDF)

Keywords

V interface, V5 interface, LE, AN, PICS

ETSI

Postal address

F-06921 Sophia Antipolis Cedex - FRANCE

Office address

650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16
Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Internet

secretariat@etsi.fr
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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Signalling Protocols and Switching (SPS), and is now submitted for the ETSI standards One-step Approval Procedure.

The present document is part 2 of a multi-part standard covering the V5.1 interface specification as described below:

- Part 1: "V5.1 interface specification";
- Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";**
- Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification for the network layer (AN side)";
- Part 4: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network layer (AN side)";
- Part 5: "Test Suite Structure and Test Purposes (TSS&TP) specification for the network layer (LE side)";
- Part 6: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network layer (LE side)";
- Part 7: "Test Suite Structure and Test Purposes (TSS&TP) specification for the data link layer";
- Part 8: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the data link layer";
- Part 9: "Test specification for the physical layer".

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).

NOTE: It is however possible to use the present document to indicate the basic requirements for an Access Network (AN) or a Local Exchange (LE) required by a network operator. Specific requirements need to be added, e.g. the Public Switched Telephone Network (PSTN) port characteristics and conditions.

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

1 Scope

This second part of EN 300 324 defines the Protocol Implementation Conformance Statement (PICS) proforma for the implementation flexibility allowed for a V5.1 interface defined in EN 300 324-1 [1]. It allows either the Network Operator to formulate the requirements for V5.1 interface implemented in an Access Network (AN) or Local Exchange (LE), or to decide whether an implementation meets these requirements. It details in tabular form the implementation options, i.e. the optional functions additional to those which are mandatory to implement.

The present document is in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [3].

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 300 324-1 (V1.2): "Signalling Protocols and Switching (SPS); V interfaces at the digital Local Exchange (LE); V5.1 interface for the support of Access Network (AN); Part 1: V5.1 interface specification".
- [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 the present document, the following definitions apply:

Protocol Implementation Conformance Statement (PICS): a statement made by the supplier of an Open System Interconnection (OSI) implementation or system, stating which capabilities have been implemented for a given OSI protocol (see ISO/IEC 9646-1 [2]).

PICS proforma: a 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 [2]).

Static conformance review: a review of the extent to which the static conformance requirements are met by the Implementation Under Test (IUT), accomplished by comparing the PICS with the static conformance requirements expressed in the relevant standard(s) (see ISO/IEC 9646-1 [2]).

4 Abbreviations

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

| | |
|------|--|
| AN | Access Network |
| AND | Boolean "and" |
| C | Conditional requirements (to be observed if the relevant conditions apply) |
| DTMF | Dual Tone Multiple Frequency |
| ID | Identification |
| IUT | Implementation Under Test |
| LE | Local Exchange |
| M | Mandatory requirements (to be observed in all cases) |
| N/A | Not supported, not applicable or the conditions for status are not met |
| No | not supported |
| NOT | Boolean "not" |
| NT1 | Network Termination 1 |
| 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 |
| PICS | Protocol Implementation Conformance Statement |
| PSTN | Public Switched Telephone Network |
| SCS | System Conformance Statement |
| SUT | System Under Test |
| TS | Time Slot |
| Yes | Supported |

5 Conformance

The supplier of a protocol implementation which is claimed to conform to EN 300 324-1 [1] is required to complete a copy of the PICS proforma provided in the present document and is required to provide the information necessary to identify both the supplier and the implementation.

6 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 clause so that it can be used for its intended purposes and may further publish the completed PICS.

6.1 Identification of the implementation

6.1.1 Implementation Under Test (IUT) identification

IUT name:

.....

.....

IUT version:

.....

6.1.2 System Under Test (SUT) identification

SUT name:

.....

.....

Hardware configuration:

.....

.....

.....

Operating system:

.....

6.1.3 Product supplier

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

Additional information:

.....

.....

.....

6.1.4 Client

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

Additional information:

.....

.....

.....

6.1.5 PICS contact person

Name:

.....

Telephone number:

.....

Facsimile number:

.....

Additional information:

.....

.....

.....

6.2 PICS/System Conformance Statement (SCS)

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

.....

.....

.....

.....

6.3 Identification of the protocol

This PICS proforma applies to the following standard:

EN 300 324-1 (V1.2): "Signalling Protocols and Switching (SPS); V interfaces at the digital Local Exchange (LE); V5.1 interface for the support of Access Network (AN); Part 1: V5.1 interface specification".

6.4 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.

In the tabulations which follow, all references are to EN 300 324-1 [1].

6.5 Local exchange

6.5.1 Main features

Table 1

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|--|--|-------------------------------------|----------|-----------|---------------|
| M1 | ISDN ports? | | O.1 | 6.1.2 | []Yes [] No |
| M2 | PSTN ports? | | O.1 | 6.1.1 | []Yes [] No |
| M3 | semipermanent leased lines? | | O | 6.3 | []Yes [] No |
| M4 | communication channel time slot allocation? | | M | 8.4 | []Yes [] No |
| M41 | communication path for control functions on TS 16? | | M | 8.4 | []Yes [] No |
| M411 | communication channel on TS16? | | M | 8.4 | []Yes [] No |
| M412 | communication channel on TS15? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M413 | communication channel on TS31? | M1 and MX.1 NOT (M1 and MX.1) | M N/A | 8.4 | []Yes [] No |
| M421 | communication path for P-type data on TS 16? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M422 | communication path for P-type data on TS 15? | M1 and M412 NOT (M1 and M412) | M N/A | 8.4 | []Yes [] No |
| M423 | communication path for P-type data on TS 31? | M413 NOT M413 | M N/A | 8.4 | []Yes [] No |
| M431 | communication path for F-type data on TS 16? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M432 | communication path for F-type data on TS 15? | M1 and M412 NOT (M1 and M412) | M N/A | 8.4 | []Yes [] No |
| M433 | communication path for F-type data on TS 31? | M413 NOT M413 | M N/A | 8.4 | []Yes [] No |
| M441 | communication path for D-channel signalling on TS 16? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M442 | communication path for D-channel signalling on TS 15? | M1 and M412 NOT (M1 and M412) | M N/A | 8.4 | []Yes [] No |
| M443 | communication path for D-channel signalling on TS 31? | M413 NOT M413 | M N/A | 8.4 | []Yes [] No |
| M451 | communication path for PSTN signalling on TS 16? | M2 NOT M2 | M N/A | 8.4 | []Yes [] No |
| M452 | communication path for PSTN signalling on TS 15? | M2 and M412 NOT (M2 and M412) | M N/A | 8.4 | []Yes [] No |
| M453 | communication path for PSTN signalling on TS 31? | M2 and M413 NOT (M2 and M413) | M N/A | 8.4 | []Yes [] No |
| M51 | allocation of bearer channels to user ports by provisioning? | | M | 7.2.2 | []Yes [] No |
| M52 | allocation of EFaddr to ISDN user ports by provisioning? | M1 NOT M1 | M N/A | 7.2.2 | []Yes [] No |
| M53 | allocation of L3addr to PSTN user ports by provisioning? | M2 NOT M2 | M N/A | 7.2.2 | []Yes [] No |
| M6 | envelop function? | | M | 9 | []Yes [] No |
| Predicated imaginary features | | | | | |
| MX.1 | If required by the network operator | | O | | |
| MX.2 | If required by the national PSTN protocol | | O | | |
| O.1 = Support of at least one of these items is required | | | | | |

6.5.2 Protocol

6.5.2.1 Layer 1

Table 2

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|---|--|--------------------------|----------|-----------|---------------|
| P1.1 | layer 1 balanced? | MX.1 NOT MX.1 | M N/A | 4 | []Yes [] No |
| P1.2 | layer 1 coaxial? | MX.1 NOT MX.1 | M N/A | 4 | []Yes [] No |
| P1.3 | interface control procedures? | | M | 14.3 | []Yes [] No |
| P1.4 | detection of loss of signals; 1 ms below 20 dB? | | O.1 | 14.3.2 | []Yes [] No |
| P1.5 | detection of loss of signals; 10 consecutive ZEROs? | | O.1 | 14.3.2 | []Yes [] No |
| O.1 = Support of at least one of these items is required. | | | | | |

6.5.2.2 Layer 2

Table 3

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|--------------------------|----------|-----------|---------------|
| P2.11 | frame structure for peer to peer communication? | | M | 9.1 | []Yes [] No |
| P2.12 | format of fields for data link envelop? | | M | 9.2 | []Yes [] No |
| P2.13 | envelop address value for control protocol? | | M | 10.3.2.3 | []Yes [] No |
| P2.14 | envelop address value for PSTN protocol? | M2 NOT M2 | M N/A | 10.3.2.3 | []Yes [] No |
| P2.15 | envelop address values for ISDN ports? | M1 NOT M1 | M N/A | 9.2.2.2 | []Yes [] No |
| P2.2 | data link sublayer of LAPV5 for control protocol? | | M | 10 | []Yes [] No |
| P2.3 | data link sublayer of LAPV5 for PSTN protocol? | M2 NOT M2 | M N/A | 10 | []Yes [] No |

6.5.2.3 Layer 3

6.5.2.3.1 PSTN functions

Table 4

| Index | Protocol capability Does the implementation support ... | Predicate | Status | Reference | Support |
|-------|--|--------------|----------|-----------|---------------|
| P3.11 | DTMF senders/receivers? | M2 NOT M2 | M N/A | 13.1.2 | []Yes [] No |
| P3.12 | tone generators? | M2 NOT M2 | M N/A | 13.1.2 | []Yes [] No |
| P3.13 | announcement? | M2 NOT M2 | M N/A | 13.1.2 | []Yes [] No |

6.5.2.3.2 PSTN protocol

Table 5

| Index | Protocol capability Does the implementation support ... | Predicate | Status | Reference | Support |
|-------|--|--------------|----------|-------------|---------------|
| P3.2 | PSTN protocol entity? | M2 NOT M2 | M N/A | 13.2 | []Yes [] No |
| P3.3 | PSTN call control entity? | M2 NOT M2 | M N/A | 13.5 - 13.7 | []Yes [] No |

6.5.2.3.3 Control protocol

Table 6

| Index | Protocol capability Does the implementation support ... | Predicate | Status | Reference | Support |
|-------|--|-----------|--------|-----------|---------------|
| P4.0 | Control protocol entity? | | M | 14.4.4 | []Yes [] No |

6.5.2.3.4 Port control protocol

Table 7

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|----------------------------------|----------|-----------|---------------|
| P4.11 | ISDN user port status indication and control? | M1 NOT M1 | M N/A | 14.1 | []Yes [] No |
| P4.12 | performance monitoring? | M1 AND MX.1 NOT (M1 AND MX.1) | M N/A | 14.1.4 | []Yes [] No |
| P4.2 | PSTN user port status indication and control? | M2 NOT M2 | M N/A | 14.2 | []Yes [] No |

6.5.2.3.5 Common control

Table 8

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|-----------------------|----------|-----------|---------------|
| P5.1 | variant and interface ID control? | | M | 14.5 | []Yes [] No |
| P5.2 | verify re-provisioning? | MX.1 NOT MX.1 | M N/A | 14.5 | []Yes [] No |
| P5.3 | re-provisioning synchronization? | MX.1 NOT MX.1 | M N/A | 14.5 | []Yes [] No |

6.5.3 Protocol data units

6.5.3.1 PSTN protocol

6.5.3.1.1 Messages

Table 9

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|-------------------------------------|----------|-----------|---------------|
| U1.1 | ESTABLISH? | M2 NOT M2 | M N/A | 13.3 | []Yes [] No |
| U1.2 | ESTABLISH ACK? | M2 NOT M2 | M N/A | 13.3 | []Yes [] No |
| U1.3 | SIGNAL? | M2 NOT M2 | M N/A | 13.3 | []Yes [] No |
| U1.4 | SIGNAL ACK? | M2 NOT M2 | M N/A | 13.3 | []Yes [] No |
| U1.5 | STATUS? | M2 NOT M2 | M N/A | 13.3 | []Yes [] No |
| U1.6 | STATUS ENQUIRY? | M2 NOT M2 | M N/A | 13.3 | []Yes [] No |
| U1.7 | DISCONNECT? | M2 NOT M2 | M N/A | 13.3 | []Yes [] No |
| U1.8 | DISCONNECT COMPLETE? | M2 NOT M2 | M N/A | 13.3 | []Yes [] No |
| U1.9 | PROTOCOL PARAMETER? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.3 | []Yes [] No |

6.5.3.1.2 Information elements, general

Table 10

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|-------------------------------------|----------|-----------|----------------|
| U1.10 | protocol discriminator? | M2 NOT M2 | M N/A | 13.4.2 | [] Yes [] No |
| U1.11 | layer 3 address? | M2 NOT M2 | M N/A | 13.4.3 | [] Yes [] No |
| U1.12 | pulse notification? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.6.1 | [] Yes [] No |
| U1.13 | line information? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.6.2 | [] Yes [] No |
| U1.14 | state? | M2 NOT M2 | M N/A | 13.4.6.3 | [] Yes [] No |
| U1.15 | autonomous signalling sequence? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.6.4 | [] Yes [] No |
| U1.16 | sequence response? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.6.5 | [] Yes [] No |
| U1.17 | sequence-number? | M2 NOT M2 | M N/A | 13.4.7.1 | [] Yes [] No |
| U1.18 | cadenced-ringing? | M2 NOT M2 | M N/A | 13.4.7.2 | [] Yes [] No |
| U1.19 | pulsed-signal? | M2 NOT M2 | M N/A | 13.4.7.3 | [] Yes [] No |
| U1.20 | steady-signal? | M2 NOT M2 | M N/A | 13.4.7.4 | [] Yes [] No |
| U1.21 | digit-signal? | M2 NOT M2 | M N/A | 13.4.7.5 | [] Yes [] No |
| U1.22 | recognition-time? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.6 | [] Yes [] No |
| U1.23 | enable-autonomous-acknowledge? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.7 | [] Yes [] No |
| U1.24 | disable-autonomous-acknowledge? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.8 | [] Yes [] No |
| U1.25 | cause? | M2 NOT M2 | M N/A | 13.4.7.9 | [] Yes [] No |
| U1.26 | resource-unavailable? | M2 NOT M2 | M N/A | 13.4.7.10 | [] Yes [] No |
| U1.27 | enable-metering? | M2 and MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.11 | [] Yes [] No |
| U1.28 | metering-report? | M2 and MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.12 | [] Yes [] No |
| U1.29 | Attenuation? | M2 and MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.13 | [] Yes [] No |

6.5.3.1.3 Information elements, pulse type

Table 11

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------------|--|-------------------------------------|----------|-----------|---------------|
| U1.30 | pulse type: Pulsed normal polarity? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.31 | pulse type: Pulsed reversed polarity? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.32 | pulse type: Pulsed battery on c-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.33 | pulse type: Pulsed on hook? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.34 | pulse type: Pulsed reduced battery ? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.35 | pulse type: Pulsed no battery? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.36 | pulse type: Initial ring? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.37 | pulse type: Meter pulse? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.38 | pulse type: 50 Hz pulse? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.39 | pulse type: Register recall? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.40 | pulse type: Pulsed off hook? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.41 | pulse type: Pulsed b-wire connected to earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.42 | pulse type: Earth loop pulse? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.43 | pulse type: Pulsed b-wire connected to battery? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.44 | pulse type: Pulsed a-wire connected to earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.45 | pulse type: Pulsed a-wire connected to battery? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.46 | pulse type: Pulsed c-wire connected to earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.47 | pulse type: Pulsed c-wire disconnected? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| (continued) | | | | | |

Table 11 (concluded)

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|----------------------------------|----------|-----------|---------------|
| U1.48 | pulse type: Pulsed normal battery? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.49 | pulse type: Pulsed a-wire disconnected? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.50 | pulse type: Pulsed b-wire disconnected? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |

6.5.3.1.4 Information elements, steady signals

Table 12

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------------|--|----------------------------------|----------|-----------|---------------|
| U1.51 | steady signal: Normal polarity? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.52 | steady signal: Reversed polarity? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.53 | steady signal: Battery on c-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.54 | steady signal: No battery on c-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.55 | steady signal: Off hook? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.56 | steady signal: On hook? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.57 | steady signal: Battery on a-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.58 | steady signal: A-wire on earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.59 | steady signal: No battery on a-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.60 | steady signal: No battery on b-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.61 | steady signal: Reduced battery? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.62 | steady signal: No battery? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.63 | steady signal: Alternate reduced power/no power? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| (continued) | | | | | |

Table 12 (concluded)

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|-------------------------------------|----------|-----------|---------------|
| U1.64 | steady signal: Normal battery? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.65 | steady signal: Stop ringing? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.66 | steady signal: Start pilot frequency? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.67 | steady signal: Stop pilot frequency? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.68 | steady signal: Low impedance on b-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.69 | steady signal: B-wire connected to earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.70 | steady signal: B-wire disconnected from earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.71 | steady signal: Normal battery on b-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.72 | steady signal: Low loop impedance? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.73 | steady signal: High loop impedance? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.74 | steady signal: Anomalous loop impedance? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.75 | steady signal: A-wire disconnected from earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.76 | steady signal: C-wire on earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.77 | steady signal: C-wire disconnected from earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.96 | steady signal: Signal: Ramp to Reversed Polarity? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.97 | steady signal: Signal: Ramp to Normal Polarity? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |

6.5.3.1.5 Information elements, cause types

Table 13

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|--------------------------|----------|-----------|---------------|
| U1.78 | cause type: Response to status enquiry? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.79 | cause type: Protocol discriminator error? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.80 | cause type: L3 address error? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.81 | cause type: Message type unrecognized? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.82 | cause type: Out of sequence information element? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.83 | cause type: Repeated optional information element? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.84 | cause type: Mandatory information element missing? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.85 | cause type: Unrecognized information element? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.86 | cause type: Mandatory information element content error? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.87 | cause type: Optional information element content error? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.88 | cause type: Message not compatible with state? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.89 | cause type: Repeated mandatory information element? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.90 | cause type: Too many information elements? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |

6.5.3.1.6 Information elements, information element fields

Table 14

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|----------------------------------|----------|-----------|---------------|
| U1.91 | suppression indicator? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.92 | acknowledge request indicator? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.93 | suppression indicator? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.7 | []Yes [] No |
| U1.94 | acknowledge request indicator? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.7 | []Yes [] No |
| U1.95 | digit acknowledge request indicator? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.5 | []Yes [] No |

6.5.3.2 Control protocol

6.5.3.2.1 Messages

Table 15

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|--------------------------|--------|-----------|----------------|
| U2.1 | common control and port control messages? | | M | 14.4.1 | [] Yes [] No |

6.5.3.2.2 Information elements, general

Table 16

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|--------------------------|--------|-----------|----------------|
| U2.5 | protocol discriminator? | | M | 14.4.2.2 | [] Yes [] No |
| U2.6 | layer 3 addresses? | | M | 14.4.2.3 | [] Yes [] No |

6.5.3.2.3 Information elements, port control

Table 17

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|-------------------------------------|----------|------------|----------------|
| U3.1 | FE101 activate access? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U3.2 | FE102 activation initiated by user? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U3.3 | FE103 DS activated? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U3.4 | FE104 access activated? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U3.5 | FE105 deactivate access? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U3.6 | FE106 access deactivated? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U4.1 | FE201/202 unblock? | | M | 14.4.2.5.4 | [] Yes [] No |
| U4.2 | FE203/204 block? | | M | 14.4.2.5.4 | [] Yes [] No |
| U4.3 | FE205 block request? | | M | 14.4.2.5.4 | [] Yes [] No |
| U5.1 | FE206 performance grading? | M1 AND MX.1 NOT (M1 AND MX.1) | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U5.2 | FE207 D-channel block? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U5.3 | FE208 D-channel unblock? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |

6.5.3.2.4 Information elements, common control

Table 18

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|---------------------------------------|----------|------------|---------------|
| U6.1 | verify re-provisioning? | P5.2 NOT P5.2 | M N/A | 14.4.2.5.5 | []Yes [] No |
| U6.2 | ready for re-provisioning? | P5.2 OR P5.3 NOT (P5.2 OR P5.3) | M N/A | 14.4.2.5.5 | []Yes [] No |
| U6.3 | not ready for re-provisioning? | P5.2 OR P5.3 NOT (P5.2 OR P5.3) | M N/A | 14.4.2.5.5 | []Yes [] No |
| U6.4 | switch-over to new variant? | P5.3 NOT P5.3 | M N/A | 14.4.2.5.5 | []Yes [] No |
| U6.5 | re-provisioning started? | P5.3 NOT P5.3 | M N/A | 14.4.2.5.5 | []Yes [] No |
| U6.6 | cannot re-provision? | P5.3 NOT P5.3 | M N/A | 14.4.2.5.5 | []Yes [] No |
| U6.7 | request variant and interface ID? | | M | 14.4.2.5.5 | []Yes [] No |
| U6.8 | variant and interface ID? | | M | 14.4.2.5.5 | []Yes [] No |
| U6.9 | blocking started? | P5.3 NOT P5.3 | M N/A | 14.4.2.5.5 | []Yes [] No |
| U6.10 | restart? | | M | 14.4.2.5.5 | []Yes [] No |
| U6.11 | restart acknowledge? | | M | 14.4.2.5.5 | []Yes [] No |

6.6 Access network

6.6.1 Main features

Table 19

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|-------------------------------------|----------|-----------|---------------|
| M1 | ISDN ports? | | O.1 | 6.1.2 | []Yes [] No |
| M2 | PSTN ports? | | O.1 | 6.1.1 | []Yes [] No |
| M3 | semipermanent leased lines? | | O | 6.3 | []Yes [] No |
| M4 | communication channel time slot allocation? | | M | 8.4 | []Yes [] No |
| M41 | communication path for control functions on TS 16? | | M | 8.4 | []Yes [] No |
| M411 | communication channel on TS16? | | M | 8.4 | []Yes [] No |
| M412 | communication channel on TS15? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M413 | communication channel on TS31? | M1 and MX.1 NOT (M1 and MX.1) | M N/A | 8.4 | []Yes [] No |
| M421 | communication path for P-type data on TS 16? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M422 | communication path for P-type data on TS 15? | M1 and M412 NOT (M1 and M412) | M N/A | 8.4 | []Yes [] No |
| M423 | communication path for P-type data on TS 31? | M413 NOT M413 | M N/A | 8.4 | []Yes [] No |
| M431 | communication path for F-type data on TS 16? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M432 | communication path for F-type data on TS 15? | M1 and M412 NOT (M1 and M412) | M N/A | 8.4 | []Yes [] No |
| M433 | communication path for F-type data on TS 31? | M413 NOT M413 | M N/A | 8.4 | []Yes [] No |
| M441 | communication path for D-channel signalling on TS 16? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| | | | | | |

(continued)

Table 19 (concluded)

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|--|---|--|---------------|-----------|--------------------------------|
| M442 | communication path for D-channel signalling on TS 15? | M1 and M412 NOT (M1 and M412) | M N/A | 8.4 | []Yes [] No |
| M443 | communication path for D-channel signalling on TS 31? | M413 NOT M413 | M N/A | 8.4 | []Yes [] No |
| M451 | communication path for PSTN signalling on TS 16? | M2 NOT M2 | M N/A | 8.4 | []Yes [] No |
| M452 | communication path for PSTN signalling on TS 15? | M2 and M412 NOT (M2 and M412) | M N/A | 8.4 | []Yes [] No |
| M453 | communication path for PSTN signalling on TS 31? | M2 and M413 NOT (M2 and M413) | M N/A | 8.4 | []Yes [] No |
| M421 | communication path for P-type data on TS 16? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M422 | communication path for P-type data on TS 15? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M423 | communication path for P-type data on TS 31? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M431 | communication path for F-type data on TS 16? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M432 | communication path for F-type data on TS 15? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M433 | communication path for F-type data on TS 31? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M441 | communication path for D-channel signalling on TS 16? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M442 | communication path for D-channel signalling on TS 15? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M443 | communication path for D-channel signalling on TS 31? | M1 NOT M1 | M N/A | 8.4 | []Yes [] No |
| M451 | communication path for PSTN signalling on TS 16? | M2 NOT M2 | M N/A | 8.4 | []Yes [] No |
| M452 | communication path for PSTN signalling on TS 15? | M2 NOT M2 | M N/A | 8.4 | []Yes [] No |
| M453 | communication path for PSTN signalling on TS 31? | M1 AND M2 NOT (M1 AND M2) | M N/A | 8.4 | []Yes [] No |
| M51 | allocation of bearer channels to user ports by provisioning? | MX.4 NOT MX.4 | M O | 7.2.2 | []Yes [] No []Yes [] No |
| M52 | allocation of EFaddr to ISDN user ports by provisioning? | M1 AND MX.4 M1 AND NOT MX.4 NOT M1 | M O N/A | 7.2.2 | []Yes [] No []Yes [] No |
| M53 | allocation of L3addr to PSTN user ports by provisioning? | M2 AND MX.4 M2 AND NOT MX.4 NOT M2 | M O N/A | 7.2.2 | []Yes [] No []Yes [] No |
| M6 | envelop function? | | M | 9 | []Yes [] No |
| M7 | permanent line capability? | | O | 6.2, 14.1 | []Yes [] No |
| Predicated imaginary features to main features | | | | | |
| MX.1 | If required by the network operator | | O | | |
| MX.2 | If required by the national PSTN protocol | | O | | |
| MX.3 | If required by the network operator for AN with separate NT1 | | O | | |
| MX.4 | If not equipment for which exception has been accepted, see EN 300 324-1 [1], subclause 7.2.2, item 1) | | O | | |
| O.1 = Support of at least one of these items is required | | | | | |

6.6.2 Protocol

6.6.2.1 Layer 1

Table 20

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|---|--|--------------------------|----------|-----------|---------------|
| P1.1 | layer 1 balanced? | MX.1 NOT MX.1 | M N/A | 4 | []Yes [] No |
| P1.2 | layer 1 coaxial? | MX.1 NOT MX.1 | M N/A | 4 | []Yes [] No |
| P1.3 | interface control procedures? | | M | 14.3 | []Yes [] No |
| P1.4 | detection of loss of signals; 1 ms below 20 dB? | | O.1 | 14.3.2 | []Yes [] No |
| P1.5 | detection of loss of signals; 10 consecutive ZEROs? | | O.1 | 14.3.2 | []Yes [] No |
| O.1 = Support of at least one of these items is required. | | | | | |

6.6.2.2 Layer 2

Table 21

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|--------------------------|----------|-----------|---------------|
| P2.11 | frame structure for peer to peer communication? | | M | 9.1 | []Yes [] No |
| P2.12 | format of fields for data link envelop? | | M | 9.2 | []Yes [] No |
| P2.13 | envelop address value for control protocol? | | M | 10.3.2.3 | []Yes [] No |
| P2.14 | envelop address value for PSTN protocol? | M2 NOT M2 | M N/A | 10.3.2.3 | []Yes [] No |
| P2.15 | envelop address values for ISDN ports? | M1 NOT M1 | M N/A | 9.2.2.2 | []Yes [] No |
| P2.2 | data link sublayer of LAPV5 for control protocol? | | M | 10 | []Yes [] No |
| P2.3 | data link sublayer of LAPV5 for PSTN protocol? | M2 NOT M2 | M N/A | 10 | []Yes [] No |
| P2.4 | frame relay function in the AN | M1 NOT M1 | M N/A | 11 | []Yes [] No |

6.6.2.3 Layer 3

6.6.2.3.1 PSTN protocol

Table 22

| Index | Protocol capability Does the implementation support ... | Predicate | Status | Reference | Support |
|-------|--|----------------------------------|----------|-------------------------|---------------|
| P3.17 | Control of time critical sequences by AN? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.1.2 | []Yes [] No |
| P3.2 | PSTN protocol entity? | M2 NOT M2 | M N/A | 13.2 | []Yes [] No |
| P3.3 | PSTN call control entity? | M2 NOT M2 | M N/A | 13.5 - 13.7 | []Yes [] No |
| P3.4 | meter pulse scheduling in the AN? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.11, 13.4.7.12 | []Yes [] No |

6.6.2.3.2 Control protocol

Table 23

| Index | Protocol capability Does the implementation support ... | Predicate | Status | Reference | Support |
|-------|--|-----------|--------|-----------|---------------|
| P4.0 | Control protocol entity? | | M | 14.4.4 | []Yes [] No |

6.6.2.3.3 Port control protocol

Table 24

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|----------------------------------|----------|-----------|---------------|
| | ISDN user port status indication and control? | M1 NOT M1 | M N/A | 14.1 | []Yes [] No |
| P4.12 | performance monitoring? | M1 AND MX.3 NOT (M1 AND MX.3) | M N/A | 14.1.4 | []Yes [] No |
| P4.2 | PSTN user port status indication and control? | M2 NOT M2 | M N/A | 14.2 | []Yes [] No |

6.6.2.3.4 Common control

Table 25

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|--------------------------|----------|-----------|---------------|
| P5.1 | variant and interface ID control? | | M | 14.5 | []Yes [] No |
| P5.2 | verify re-provisioning? | MX.1 NOT MX.1 | M N/A | 14.5 | []Yes [] No |
| P5.3 | re-provisioning synchronization? | MX.1 NOT MX.1 | M N/A | 14.5 | []Yes [] No |

6.6.3 Protocol data units

6.6.3.1 PSTN protocol

6.6.3.1.1 Messages

Table 26

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|-------------------------------------|----------|-----------|----------------|
| U1.1 | ESTABLISH? | M2 NOT M2 | M N/A | 13.3 | [] Yes [] No |
| U1.2 | ESTABLISH ACK? | M2 NOT M2 | M N/A | 13.3 | [] Yes [] No |
| U1.3 | SIGNAL? | M2 NOT M2 | M N/A | 13.3 | [] Yes [] No |
| U1.4 | SIGNAL ACK? | M2 NOT M2 | M N/A | 13.3 | [] Yes [] No |
| U1.5 | STATUS? | M2 NOT M2 | M N/A | 13.3 | [] Yes [] No |
| U1.6 | STATUS ENQUIRY? | M2 NOT M2 | M N/A | 13.3 | [] Yes [] No |
| U1.7 | DISCONNECT? | M2 NOT M2 | M N/A | 13.3 | [] Yes [] No |
| U1.8 | DISCONNECT COMPLETE? | M2 NOT M2 | M N/A | 13.3 | [] Yes [] No |
| U1.9 | PROTOCOL PARAMETER? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.3 | [] Yes [] No |

6.6.3.1.2 Information elements, general

Table 27

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|-------------------------------------|----------|-----------|----------------|
| U1.10 | protocol discriminator? | M2 NOT M2 | M N/A | 13.4.2 | [] Yes [] No |
| U1.11 | layer 3 address? | M2 NOT M2 | M N/A | 13.4.3 | [] Yes [] No |
| U1.12 | pulse notification? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.6.1 | [] Yes [] No |
| U1.13 | line information? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.6.2 | [] Yes [] No |
| U1.14 | state? | M2 NOT M2 | M N/A | 13.4.6.3 | [] Yes [] No |
| U1.15 | autonomous signalling sequence? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.6.4 | [] Yes [] No |
| U1.16 | sequence response? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.6.5 | [] Yes [] No |
| U1.17 | sequence-number? | M2 NOT M2 | M N/A | 13.4.7.1 | [] Yes [] No |
| U1.18 | cadenced-ringing? | M2 NOT M2 | M N/A | 13.4.7.2 | [] Yes [] No |
| U1.19 | pulsed-signal? | M2 NOT M2 | M N/A | 13.4.7.3 | [] Yes [] No |
| U1.20 | steady-signal? | M2 NOT M2 | M N/A | 13.4.7.4 | [] Yes [] No |
| U1.21 | digit-signal | M2 NOT M2 | M N/A | 13.4.7.5 | [] Yes [] No |
| U1.22 | recognition-time | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.6 | [] Yes [] No |
| U1.23 | enable-autonomous-acknowledge | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.7 | [] Yes [] No |
| U1.24 | disable-autonomous-acknowledge | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.8 | [] Yes [] No |
| U1.25 | cause | M2 NOT M2 | M N/A | 13.4.7.9 | [] Yes [] No |
| U1.26 | resource-unavailable | M2 NOT M2 | M N/A | 13.4.7.10 | [] Yes [] No |
| U1.27 | enable-metering | M2 and MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.11 | [] Yes [] No |
| U1.28 | metering-report? | M2 and MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.12 | [] Yes [] No |
| U1.29 | Attenuation | M2 and MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.13 | [] Yes [] No |

6.6.3.1.3 Information elements, pulse type

Table 28

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------------|--|-------------------------------------|----------|-----------|---------------|
| U1.30 | pulse type: Pulsed normal polarity? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.31 | pulse type: Pulsed reversed polarity? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.32 | pulse type: Pulsed battery on c-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.33 | pulse type: Pulsed on hook? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.34 | pulse type: Pulsed reduced battery ? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.35 | pulse type: Pulsed no battery? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.36 | pulse type: Initial ring? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.37 | pulse type: Meter pulse? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.38 | pulse type: 50 Hz pulse? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.39 | pulse type: Register recall? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.40 | pulse type: Pulsed off hook? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.41 | pulse type: Pulsed b-wire connected to earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.42 | pulse type: Earth loop pulse? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.43 | pulse type: Pulsed b-wire connected to battery? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.44 | pulse type: Pulsed a-wire connected to earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.45 | pulse type: Pulsed a-wire connected to battery? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.46 | pulse type: Pulsed c-wire connected to earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.47 | pulse type: Pulsed c-wire disconnected? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| (continued) | | | | | |

Table 28 (concluded)

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|-------------------------------------|----------|-----------|---------------|
| U1.48 | pulse type: Pulsed normal battery? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.49 | pulse type: Pulsed a-wire disconnected? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.50 | pulse type: Pulsed b-wire disconnected? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |

6.6.3.1.4 Information elements, steady signals

Table 29

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------------|--|-------------------------------------|----------|-----------|---------------|
| U1.51 | steady signal: Normal polarity? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.52 | steady signal: Reversed polarity? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.53 | steady signal: Battery on c-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.54 | steady signal: No battery on c-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.55 | steady signal: Off hook? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.56 | steady signal: On hook? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.57 | steady signal: Battery on a-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.58 | steady signal: A-wire on earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.59 | steady signal: No battery on a-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| (continued) | | | | | |

Table 29 (concluded)

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|-------------------------------------|----------|-----------|---------------|
| U1.60 | steady signal: No battery on b-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.61 | steady signal: Reduced battery? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.62 | steady signal: No battery? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.63 | steady signal: Alternate reduced power/no power? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.64 | steady signal: Normal battery? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.65 | steady signal: Stop ringing? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.66 | steady signal: Start pilot frequency? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.67 | steady signal: Stop pilot frequency? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.68 | steady signal: Low impedance on b-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.69 | steady signal: B-wire connected to earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.70 | steady signal: B-wire disconnected from earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.71 | steady signal: Normal battery on b-wire? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.72 | steady signal: Low loop impedance? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.73 | steady signal: High loop impedance? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.74 | steady signal: Anomalous loop impedance? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.75 | steady signal: A-wire disconnected from earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.76 | steady signal: C-wire on earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.77 | steady signal: C-wire disconnected from earth? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.97 | steady signal: Signal: Ramp to Reversed Polarity? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |
| U1.98 | steady signal: Signal: Ramp to Normal Polarity? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.4 | []Yes [] No |

6.6.3.1.5 Information elements, cause types

Table 30

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|--------------------------|----------|-----------|---------------|
| U1.78 | cause type: Response to status enquiry? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.79 | cause type: Protocol discriminator error? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.80 | cause type: L3 address error? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.81 | cause type: Message type unrecognized? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.82 | cause type: Out of sequence information element? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.83 | cause type: Repeated optional information element? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.84 | cause type: Mandatory information element missing? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.85 | cause type: Unrecognized information element? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.86 | cause type: Mandatory information element content error? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.87 | cause type: Optional information element content error? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.88 | cause type: Message not compatible with state? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.89 | cause type: Repeated mandatory information element? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |
| U1.90 | cause type: Too many information elements? | M2 NOT M2 | M N/A | 13.4.7.9 | []Yes [] No |

6.6.3.1.6 Information elements, information element fields

Table 31

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|----------------------------------|----------|-----------|---------------|
| U1.91 | suppression indicator? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.92 | acknowledge request indicator? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.3 | []Yes [] No |
| U1.93 | suppression indicator? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.7 | []Yes [] No |
| U1.94 | acknowledge request indicator? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.7 | []Yes [] No |
| U1.95 | digit acknowledge request indicator? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.5 | []Yes [] No |
| U1.96 | repetition indicator? | M2 AND MX.2 NOT (M2 AND MX.2) | M N/A | 13.4.7.11 | []Yes [] No |

6.6.3.2 Control protocol

6.6.3.2.1 Messages

Table 32

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|--------------------------|--------|-----------|----------------|
| U2.1 | common control and port control messages? | | M | 14.4.1 | [] Yes [] No |

6.6.3.2.2 Information elements, general

Table 33

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|--------------------------|--------|-----------|----------------|
| U2.5 | protocol discriminator? | | M | 14.4.2.2 | [] Yes [] No |
| U2.6 | layer 3 addresses? | | M | 14.4.2.3 | [] Yes [] No |

6.6.3.2.3 Information elements, port control

Table 34

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|-------------------------------------|----------|------------|----------------|
| U3.1 | FE101 activate access? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U3.2 | FE102 activation initiated by user? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U3.3 | FE103 DS activated? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U3.4 | FE104 access activated? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U3.5 | FE105 deactivate access? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U3.6 | FE106 access deactivated? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U4.1 | FE201/202 unblock? | | M | 14.4.2.5.4 | [] Yes [] No |
| U4.2 | FE203/204 block? | | M | 14.4.2.5.4 | [] Yes [] No |
| U4.3 | FE205 block request? | | M | 14.4.2.5.4 | [] Yes [] No |
| U5.1 | FE206 performance grading? | M1 AND MX.3 NOT (M1 AND MX.3) | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U5.2 | FE207 D-channel block? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |
| U5.3 | FE208 D-channel unblock? | M1 NOT M1 | M N/A | 14.4.2.5.4 | [] Yes [] No |

6.6.3.2.4 Information elements, common control

Table 35

| Index | Protocol capability Does the implementation support ... | Conditions for status | Status | Reference | Support |
|-------|--|---------------------------------------|----------|------------|----------------|
| U6.1 | verify re-provisioning? | P5.2 NOT P5.2 | M N/A | 14.4.2.5.5 | [] Yes [] No |
| U6.2 | ready for re-provisioning? | P5.2 OR P5.3 NOT (P5.2 OR P5.3) | M N/A | 14.4.2.5.5 | [] Yes [] No |
| U6.3 | not ready for re-provisioning? | P5.2 OR P5.3 NOT (P5.2 OR P5.3) | M N/A | 14.4.2.5.5 | [] Yes [] No |
| U6.4 | switch-over to new variant? | P5.3 NOT P5.3 | M N/A | 14.4.2.5.5 | [] Yes [] No |
| U6.5 | re-provisioning started? | P5.3 NOT P5.3 | M N/A | 14.4.2.5.5 | [] Yes [] No |
| U6.6 | cannot re-provision? | P5.3 NOT P5.3 | M N/A | 14.4.2.5.5 | [] Yes [] No |
| U6.7 | request variant and interface ID? | | M | 14.4.2.5.5 | [] Yes [] No |
| U6.8 | variant and interface ID? | | M | 14.4.2.5.5 | [] Yes [] No |
| U6.9 | blocking started? | P5.3 NOT P5.3 | M N/A | 14.4.2.5.5 | [] Yes [] No |
| U6.10 | restart? | | M | 14.4.2.5.5 | [] Yes [] No |
| U6.11 | restart acknowledge? | | M | 14.4.2.5.5 | [] Yes [] No |

Annex A (informative): Instructions for completing the PICS proforma

A.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 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 SCS as defined in ISO/IEC 9646-1 [2] is a document supplied by the client or product supplier that summarizes which OSI International Standards, ITU-T (CCITT) Recommendations, ENs 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.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.

A.3 Main features

Each question in this subclause refers to a major function of the protocol which requires clarification in the PICS. Answering "Yes" to a particular question states that the implementation supports all the mandatory procedures for that function defined in the referenced subclauses of the respective standard(s). Answering "No" to a particular question in this subclause states that the implementation does not support that function of the protocol. Some of these items are optional and in some cases the option is dependant on the implementation of other items. In these cases, if the invoking capability is supported, the ability to support the item is mandatory. These conditions are made clear in the text of each item.

A.4 Protocol

Indicating support for an item in this subclause states that the implementation has the capability to support the protocol provisions that may exist.

A.5 Protocol data units

Indicating support for an item in this subclause states that the implementation has the capability to support the protocol provisions that may exist.

History

| Document history | | |
|------------------|---------------|--|
| Edition 1 | February 1994 | Publication as ETS 300 324-2 |
| V1.2.2 | January 1999 | One-step Approval Procedure OAP 9920: 1999-01-15 to 1999-05-14 |
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