**ETSI**

# AMENDMENT

## TBR 3

## A1

**December 1997**

**This amendment A1 modifies**
**the Technical Basis for Regulation TBR 3 (1995)**

# Integrated Services Digital Network (ISDN);
# Attachment requirements for terminal equipment to connect
# to an ISDN using ISDN basic access

## Urgent Technical Correction

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## Foreword

This amendment to Technical Basis for Regulation (TBR) has been produced by ETSI Project Digital Terminals and Access (DTA).

This amendment should be considered as an urgent technical correction.

This amendment has been produced at the request of the Approvals Committee for Terminal Equipment (ACTE) and:

- contains amendments to the requirements as determined by the special group of the ISDN Type Approval Advisory Ad-Hoc Group (ITAAAG) in order to align with the "essential requirements" according to Directive 91/263/EEC;

- contains corrections to reported shortcomings in the Tree and Tabular Combined Notation (TTCN) at Layers 1, 2, and 3;

- contains TTCN in ISO International Standard (IS) form in place of the Draft ISO International Standard (DIS) form;

- deselects tests declared by the special group of ITAAAG as being not essential according to Directive 91/263/EEC;

- contains a complete replacement of the TBR-RT (tables of annex A). The ETSI BTC2-TE5 joint meeting to discuss the results of the UAP decided to give preference to a complete replacement of the TBR-RT instead of an amendment of at least each second table which could lead to confusion to the user of the document.

| |
|---|
| NOTE: The references to the changed pages in the standard refer to an old presentation. See history box at the end of the standard itself.<br>The new presentation format, applied from 1 December 1995, may have different page numbering. The clause numbering has not changed. |

## Amendments

**Page 16, subclause 3.1**

Amend definition as indicated:

**designated terminal:** A terminal which is permitted to draw power from Power Source 1 (PS1) under both normal and restricted power conditions in the absence of any other power source.

**non-designated terminal:** A terminal which is only permitted to draw power from Power Source 1 (PS1) under normal power conditions in the absence of any other power source.

**Page 37, subclause 9.2.7**

Amend the line below the figure 9.7 as indicated:

The Longitudinal Conversion Loss: LCL = $20 \log_{10} |E_L/V_T|$ dB

The voltages $V_T$ and $E_L$ should be measured within the frequency range from 10 kHz up to 300 KHz 1 MHz using selective test voltage measuring equipment.

**Page 43, subclause 9.4.2.1.1**

Amend definition as indicated:

**Definition:** In this inactive (powered off) state, the TE is not transmitting and cannot detect the presence of any input signals. In the case of locally powered TEs which cannot detect the appearance/disappearance of PS1, this state is entered when local power is not present. For locally powered TEs that can detect PS1, state F1.0 is entered whenever loss of local power (required to support all TEI functions) is detected, and state F1.1 is entered when the absence of power from PS1 is detected and local power is available. No requirements are applicable for locally powered TEs for absence of PS1.

**Page 45, subclause 9.4.2.3.1**

Insert note and amend test as indicated:

**Requirement:** A TE which is powered from PS1 shall follow the procedures described in the finite state matrix table shown in table 9.7.

A TE which is locally powered and does not have a connection detector capable of detecting the presence of PS1 shall follow the procedures described in the finite state matrix table shown in table 9.8.

A TE which is locally powered and has a connection detector capable of detecting the presence of PS1 shall follow the procedures described in the finite state matrix table shown in table 9.9.

> NOTE: Where requirements are not subject for testing in all possible states, the corresponding behaviour is implicitly checked in the tests for other states.

**Test:** The test shall be conducted according to annex B, TTCN test cases AD1aF1_PS&_LP_-on, AD1bF10_LP-on, AD1cF11_LP-off, AD1dF11_PS-on, AD2F11_CHK_T3, AD3aF2_PS_-off, AD3bF2_LP-off, AD4F2_RX_-I0, AD5F2_RX_-I2, AD6F2_RX_-I4, AD7F2_RX_-IX, AD8F2_CHK_T3, CPF2PHAI, AD9aF3_PS_-off, AD9bF3_LP_-off, AD10F3_PH_-AR, AD11F3_RX_-I0, AD12F3_RX_-I2, AD13F3_RX_-I4, AD14F3_RX_-IX, AD15F3_CHK_T3, CPF3MPHIID, CPF3PHAI, AD16aF4_PS_-off, AD16bF4_LP_-off, AD17F4_RX_-I0, AD18F4_RX_-I2, AD19F4_RX-I4, AD21F4_CHK_T3, CPF4MPHIID, CPF4PHAI, CPF4PHDI_T3exp, CPF4Tlayer2, AD22aF5_PS_-off, AD22bF5_LP_-off, AD23F5_RX_-I0, AD24F5_RX_-I2, AD25F5_RX_-I4, AD26F5_RX_-IX, AD27F5_CHK_T3, CPF5MPHIID, CPF5PHAI, CPF5PHDI_I0T3, CPF5PHDI_T3expa, CPF5PHDI_T3expb, AD28aF6_PS_-off, AD28bF6_LP_-off, AD28cF6_PS-off, AD29F6_Lostfr, AD30F6_PH_-AR, AD31F6_RX_-I0, AD32F6_RX_-I2, AD33F6_RX_-I4, AD34F6_CHK_T3, CPF6PHAIa, CPF6PHAIb, CPF6PHDI_T3exp, CPF6PHDI_I0T3, CPF6PHDI_I0, CPF6PHARa, CPF6PHARb, AD35aF7_PS_-off, AD35bF7_LP_-off, AD35cF7_PS-off, AD36F7_Lostfr, AD37F7_RX_-I0, AD38F7_RX_-I2, AD39F7_RX_-I4, CPF7PHDI_I0, CPF7DIS_I2, CPF7DIS_IX,

AD40aF8_PS_-off, AD40bF8_LP_-off, AD41F8_PH_-AR, ~~AD42F8_RX_I0,~~ AD43F8_RX_-I2, AD44F8_RX_-I4, AD45F8_RX_-IX, AD46F8_CHK_T3, ~~CPF8MPHIIDa, CPF8MPHIIDb,~~ CPF8PHAIb, ~~CPF8PHAIc, CPF8PHDI_T3exp,~~ CPF8PHDI_I0T3, ~~CPF8PHDI_I0b,~~ and CPF8PHARa ~~and CPF8PHARb~~.

**Page 46, subclause 9.4.2.3.1, table 9.7**

Amend table as indicated:

**Table 9.7: Activation/deactivation Layer 1 finite state matrix table for
TEs powered from PS1**

| State Name | Inactive | Sensing | Deactivated | Awaiting signal | Identifying input | Synchro-nized | Activated | Lost Framing |
|---|---|---|---|---|---|---|---|---|
| State Number | F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| INFO Sent | INFO 0 | INFO 0 | INFO 0 | INFO 1 | INFO 0 | INFO 3 | INFO 3 | INFO 0 |
| Detection of PS1 (note 2) | F2 | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | |
| Disappearance of PS1 for at least 500 ms (note 2) | --- | F1 | ~~MPH-II(d)~~ F1 | ~~MPH-II(d)~~ PH-DI F1 | ~~MPH-II(d)~~ PH-DI F1 | ~~MPH-II(d)~~ PH-DI F1 | ~~MPH-II(d)~~ PH-DI F1 | ~~MPH-II(d)~~ PH-DI F1 |
| PH-ACTIVATE REQUEST | / | \| | ST. T3 F4 | \| | \| | --- | \| | --- |
| Expiry T3 | / | / | --- | PH-DI F3 | PH-DI F3 | Not applicable | / | PH-DI F3 |
| Receive INFO 0 (notes 4 and 5) | / | ~~MPH-II(c)~~ F3 | --- | --- | --- | PH-DI F3 | PH-DI F3 | PH-DI F3 |
| Receive any signal (note 1) | / | --- | --- | F5 | --- | / | / | --- |
| Receive INFO 2 | / | ~~MPH-II(c)~~ F6 | F6 | (note 3) | F6 | --- | F6 | F6 |
| Receive INFO 4 | / | ~~MPH-II(c)~~ PH-AI F7 | PH-AI S/ R T3 F7 | (note 3) | PH-AI S/R T3 F7 | PH-AI S/R T3 F7 | --- | PH-AI S/R T3 F7 |
| Lost Framing | / | / | / | / | / | F8 | F8 | --- |

| | | | |
|---|---|---|---|
| --- | No change, no action. | PH-AI | Primitive PH-ACTIVATE INDICATION. |
| \| | Impossible by the definition of the Layer 1 service. | PH-DI | Primitive PH-DEACTIVATE INDICATION. |
| / | Impossible situation. | ST. T3 | Start timer T3. |
| a, b; Fn | Issue primitives "a" and "b" and then go to state "Fn". | S/R T3 | Stop and reset timer T3. |
| ~~MPH-II(c)~~ | ~~Primitive MPH-INFORMATION INDICATION (connected).~~ | | |
| ~~MPH-II(d)~~ | ~~Primitive MPH-INFORMATION INDICATION (disconnected).~~ | | |

(continued)

**Table 9.7 (concluded): Activation/deactivation Layer 1 finite state matrix table for**
**TEs powered from PS1**

| | |
|---|---|
| NOTE 1: | This event reflects the case where a signal is received which is not INFO 2 or INFO 4. To ensure that a TE takes appropriate action when receiving a signal to which it cannot synchronize, operation of TEs should be verified where the received signal is any bit pattern (containing at least three ZEROs in each frame interval) to which TEs conforming to subclause 9.4.3 are not able to synchronize. In the TTCN test cases in annex B, clause B.4, this signal is called INFO X. |
| NOTE 2: | If more than one power feeding source can be used as declared in items 1 and 2 of annex A, table A.1, the reaction of the TE may be different from that described. It may be necessary then to analyse the behaviour of the TE, when tested according to annex B, clause B.4, and when powered as declared by the supplier (see annex E, table E.2). |
| NOTE 3: | Two responses are possible. Either: |
| |     a)    the TE shall enter state F5 within 5 ms. Where this option is implemented by the TE, the requirements associated with state F5 are applicable; or |
| |     b)    on receipt of INFO 2, the TE shall enter state F6 within 5 ms; and on receipt of INFO 4, the TE shall enter state F7 within 5 ms, stop and reset timer T3, and send PH-AI. Where this option is implemented by the TE, the requirements associated with state F5 are not applicable. |
| NOTE 4: | The timer T4 shall be started when leaving state F7 or F8 upon the reception of INFO 0. The corresponding PH-DI will be delivered to Layer 2 only, if Layer 1 does not re-enter an active state before expiry of this timer. The value of this timer is in the range of 500 ms to 1 000 ms. This prevents the loss of an on-going communication caused by spurious effects. |
| NOTE 5: | INFO 0 shall be detected when 48 or more contiguous binary ONEs have been received and the TE shall perform the actions specified in table 9.7. Conformance shall be tested with a sinusoidal signal having a voltage of 100 mV peak-to-peak (with a frequency in the range of 2 kHz to 1 000 kHz, preferably 100 kHz). TE being in state F6 or F7 shall react on receipt of this signal by transmitting INFO 0 within a period of time 250 µs to 25 ms. |

**Page 48, subclause 9.4.2.3.1, table 9.8**

Amend table as indicated:

**Table 9.8: Activation/deactivation Layer 1 finite state matrix table for locally powered
TEs ~~unable to detect PS1~~**

| State Name | Inactive | Sensing | Deactiv-ated | Awaiting signal | Identifying input | Synchro-nized | Activated | Lost Framing |
|---|---|---|---|---|---|---|---|---|
| State Number | F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 |
| INFO Sent | INFO 0 | INFO 0 | INFO 0 | INFO 1 | INFO 0 | INFO 3 | INFO 3 | INFO 0 |
| Loss of power | / | F1 | ~~MPH-II(d)~~ F1 | ~~MPH-II(d)~~ PH-DI F1 | ~~MPH-II(d)~~ PH-DI F1 | ~~MPH-II(d)~~ PH-DI F1 | ~~MPH-II(d)~~ PH-DI F1 | ~~MPH-II(d)~~ PH-DI F1 |
| Application of power (note 2) | F2 | --- | --- | --- | --- | --- | --- | --- |
| Detect PS1 | No requirements apply | | | | | | | |
| PH-ACTIVATE REQUEST | / | \| | ST. T3 F4 | \| | \| | --- | \| | --- |
| Expiry T3 | / | / | --- | PH-DI F3 | PH-DI F3 | <u>Not applicable</u> | / | PH-DI F3 |
| Receive INFO 0 (notes 4 and 5) | / | ~~MPH-II(c)~~ F3 | --- | --- | --- | PH-DI F3 | PH-DI F3 | PH-DI F3 |
| Receive any signal (note 1) | / | --- | --- | F5 | --- | / | / | --- |
| Receive INFO 2 | / | ~~MPH-II(c)~~ F6 | F6 | (note 3) | F6 | --- | F6 | F6 |
| Receive INFO 4 | / | ~~MPH-II(c)~~ PH-AI F7 | PH-AI S/R T3 F7 | (note 3) | PH-AI S/R T3 F7 | PH-AI S/R T3 F7 | --- | PH-AI S/R T3 F7 |
| Lost Framing | / | / | / | / | / | F8 | F8 | --- |

| | | | |
|---|---|---|---|
| --- | No change, no action. | PH-AI | Primitive PH-ACTIVATE INDICATION. |
| \| | Impossible by the definition of the Layer 1 service. | PH-DI | Primitive PH-DEACTIVATE INDICATION. |
| / | Impossible situation. | ST. T3 | Start timer T3. |
| a, b; Fn | Issue primitives "a" and "b" and then go to state "Fn". | | |
| ~~MPH-II(c)~~ | ~~Primitive MPH-INFORMATION INDICATION (connected).~~ | S/R T3 | Stop and reset timer T3. |
| ~~MPH-II(d)~~ | ~~Primitive MPH-INFORMATION INDICATION (disconnected).~~ | | |

(continued)

**Table 9.8 (concluded): Activation/deactivation Layer 1 finite state matrix table for locally powered TEs ~~unable to detect PS1~~**

| | |
|---|---|
| NOTE 1: | This event reflects the case in which a signal is received which is not INFO 2 or INFO 4. To ensure that a TE takes appropriate action when receiving a signal to which it cannot synchronize, operation of TEs should be verified where the received signal is any bit pattern (containing at least three ZEROs in each frame interval) to which TEs conforming to subclause 9.4.3 are not able to synchronize. In the TTCN test cases in annex B, clause B.4, this signal is called INFO X. |
| NOTE 2: | The term power could be the full operational power or backup power. Backup power is defined such that it is enough to hold the TEI values in memory and maintain the capability of receiving and transmitting Layer 2 frames associated with the TEI procedures. If more than one power feeding source can be used as declared in item~~s~~ 1 and 2~~O.1.2~~ of annex A, table A.1~~3.2~~, the reaction of the TE may be different from that described. It may be necessary then to analyse the behaviour of the TE, when tested according to annex B, clause B.4, and when powered as declared by the supplier (see annex E, table E.2). |
| NOTE 3: | Two responses are possible. Either:<br><br>a) the TE shall enter state F5 within 5 ms. Where this option is implemented by the TE, the requirements associated with state F5 are applicable; or<br><br>b) on receipt of INFO 2, the TE shall enter state F6 within 5 ms; and on receipt of INFO 4, the TE shall enter state F7 within 5 ms, stop and reset timer T3, and send PH-AI. Where this option is implemented by the TE, the requirements associated with state F5 are not applicable. |
| NOTE 4: | The timer T4 shall be started when leaving the states F7 or F8 upon reception of INFO 0. The corresponding PH-DI will be delivered to Layer 2 only, if Layer 1 does not re-enter state F7 before expiry of this timer. The value of this timer is in the range of 500 ms to 1 000 ms. This prevents the loss of on-going communication caused by spurious effects. |
| NOTE 5: | INFO 0 shall be detected when 48 or more contiguous binary ONEs have been received and the TE shall perform the actions specified in table 9.8. Conformance shall be tested with a sinusoidal signal having a voltage of 100 mV peak-to-peak (with a frequency in the range 2 kHz to 1 000 kHz, preferably 100 kHz). TE being in state F6 or F7 shall react on receipt of this signal by transmitting INFO 0 within a period of time 250 $\mu$s to 25 ms. |

**Page 51, subclause 9.4.2.3.1, table 9.9**

Delete table 9.9.

NOTE: Changes to table 9.8 have made table 9.9 superfluous, it is therefore deleted.

**Page 56, subclause 9.5.5.1.4**

Delete entire subclause.

**Page 61, clause 10**

Add the following text to the bottom of the first paragraph:

<u>**Requirement**: "Before the procedures of this clause are invoked, a physical layer connection shall be activated between the TE and the network. All layer 2 frames shall be sent to the physical layer using a PH-DATA request primitive".</u>

> NOTE: <u>The reception of a PH-DI primitive by layer 2 implies the discarding of all outstanding PH-DATA requests and all LAPD frames in queue.</u>

<u>**Test**: The requirement is implicitly verified by the tests in annex B, subclause B.4.2, (Test Group ISDN1/Cp).</u>

**Page 71, subclause 10.4.1**

Amend the list of test cases as indicated:

**Test:** The test shall be conducted according to annex C, TTCN test case TC14001 and annex B subclause B.4.4~~2~~, TTCN test cases CPF4PHDI_T3exp, CPF5PHDI_I0T3, CPF5PHDI_T3expa, ~~CPF5PHDI_T3expb,~~ CPF6PHDI_T3exp, ~~CPF6PHDI_I0T3,~~ CPF6PHDI_I0, ~~CPF6PHARa,~~ CPF7PHDI_I0, ~~CPF8PHDI_T3exp,~~ <u>and</u> CPF8PHDI_I0T3, ~~CPF8PHDI_I0b and CPF8PHARa~~.

**Page 72, subclause 10.5.1**

Add the following text to the end of the subclause:

**Test:** <u>This requirement is implicitly tested by other TEI management tests.</u>

**Page 72, subclause 10.5.2**

Amend the list of test cases as indicated:

**Test:** The test shall be conducted according to annex C, TTCN test case TC13014 and test preamble PR37004, and annex B, subclause B.4.4~~2~~, TTCN test cases ~~CPF2PHAI,~~ CPF3PHAI, ~~CPF4PHAI,~~ CPF4Tlayer2, ~~CPF5PHAI,~~ CPF6PHAIa, CPF6PHAIb, ~~CPF6PHARb,~~ <u>and</u> CPF8PHAIb~~, CPF8PHAIc and CPF8PHARb~~.

**Page 74, subclause 10.5.4.2**

Amend text as indicated:

**Requirement:** At the TE, automatic TEI values shall be removed by sending an MDL-REMOVE-REQUEST primitive to the data link layer entity under the following conditions:

- on receipt from the ASP of an identity remove message;
- ~~on receipt of an MPH-INFORMATION INDICATION (disconnected) primitive;~~
- on receipt of an MDL-ERROR-INDICATION primitive indicating that the data link layer entity has assumed possible multiple-assignment of a TEI value, rather than requesting a TEI check procedure by the transmission of an identity verify request message.

**Test**: The test shall be conducted according to annex C, TTCN test cases ~~TC14021, TC14022,~~ TC24007, TC27031 and test preamble PR31401, ~~and annex B, subclause B.4.4, TTCN test cases CPF3MPHIID, CPF4MPHIID, CPF5MPHIID, CPF8MPHIIDa and CPF8MPHIIDb~~.

**Page 74, subclause 10.5.5.2**

Amend the list of test cases as indicated:

**Test:** The test shall be conducted according to annex C, TTCN test case ~~TC14019~~TC24007 and TC27031.

**Page 74, subclause 10.5.5.3**

Delete entire subclause.

**Page 76, subclause 10.6.1.1**

Amend text as indicated:

**Reference:** ETS 300 125, Part 2, subclause 5.5.1.1.

**Requirement:** These procedures shall be used to establish multiple frame operation between the network and a designated user entity.

The data link layer entity shall initiate establishment of multiple frame operation on receipt of the DL-ESTABLISH-REQUEST primitive from Layer 3. ~~All frames other than unnumbered frame formats received during the establishment procedures shall be ignored.~~

**Test:** The test shall be conducted according to annex C, ~~TTCN test case TC25013 and~~ test preamble PR37004.

**Page 77, subclause 10.6.1.2**

Amend the list of test cases as indicated:

**Test:** The test shall be conducted according to annex C, TTCN test case TC24004 and TC25002, and annex B, subclause B.4.4<u>2</u>, TTCN test cases ~~CPF2PHAI,~~ CPF3PHAI, ~~CPF4PHAI,~~ CPF4Tlayer2, ~~CPF5PHAI,~~ CPF6PHAIa, CPF6PHAIb, <u>CPF6PHARa,</u> ~~CPF6PHARb,~~ CPF8PHAIb, ~~CPF8PHAIc,~~ <u>and</u> CPF8PHARa ~~and CPF8PHARb~~.

**Page 78, subclause 10.6.2**

Amend list of test cases as indicated:

**Test:** The test shall be conducted according to annex C, TTCN test case TC27012.<u>.</u> ~~and annex B, subclause B.4.4, TTCN test cases CPF4PHDI_T3exp, CPF5PHDI_I0T3, CPF5PHDI_T3expa, CPF5PHDI_T3expb, CPF6PHDI_T3exp, CPF6PHDI_I0T3, CPF6PHDI_I0, CPF6PHARa, CPF7PHDI_I0, CPF8PHDI_T3exp, CPF8PHDI_I0T3, CPF8PHDI_I0b, CPF8PHARa.~~

**Page 78, subclauses 10.6.3 and 10.6.3.1**

Delete entire subclauses.

**Page 81, subclause 10.7.4**

Delete test case TC28407 from the list of test cases.

**Page 82, subclause 10.7.5.3**

Delete test case TC27416 from the list of test cases.

**Page 82, subclause 10.7.5.4**

Delete test case TC27405 from the first list of test cases and delete TC27407 from the second list of test cases.

**Page 82, subclause 10.7.5.5**

Add the following text to the end of the subclause:

**Test:**
> NOTE: It is not possible to replicate the conditions required to bring the IUT into the state required to perform the test, and therefore no test is specified.

**Page 83, subclause 10.8**

Delete test case TC28408 from the list of test cases.

**Page 84, subclause 10.9.4**

Delete test cases TC24007 and TC28019 from the list of test cases.

**Page 158, subclause 11.4.2.2.2**

Delete entire subclause.

**Page 161, subclause 11.4.2.3.2**

Replace existing note by:

**Test:**
> NOTE: This requirement specifies an allowed exception to the requirements in subclauses 11.4.2.4 and 11.4.2.5. A specific test is not required.

**Page 162, subclause 11.4.3.4.2**

Delete test case TC11001 from the list of test cases.

**Page 165, subclause 11.4.6.1**

Delete entire subclause.

**Page 166, subclause 11.4.6.3**

Add test cases TC11908 and TC11909 to the list of test cases.

**Page 167, subclause 11.4.6.5.1**

Amend text as indicated:

**Requirement:** ~~When a message other than SETUP, DISCONNECT, RELEASE or RELEASE COMPLETE is received which has one or more mandatory information elements missing, no action shall be taken on the message and no state change shall occur. A STATUS message shall then be returned with Cause #96 "mandatory information element is missing".~~

When a SETUP or RELEASE message is received which has one or more mandatory information elements missing, a RELEASE COMPLETE message shall be returned.

~~Other actions taken on receipt of a RELEASE message with the Cause information element missing shall be the same as if a RELEASE message with Cause # 31 "normal, unspecified" had been received.~~

~~When a RELEASE message is received as the first clearing message and with a Cause information element missing, the actions taken shall be the same as if a RELEASE message with Cause #31 "normal, unspecified" was received (see subclause 11.4.3).~~

~~When a DISCONNECT message is received with the Cause information element missing, the actions taken shall be the same as if a DISCONNECT message with Cause #31 "normal, unspecified" was received (see subclause 11.4.3).~~

~~When a RELEASE COMPLETE message is received with a Cause information element missing, it shall be assumed that a RELEASE COMPLETE message was received with Cause #31 "normal, unspecified".~~

**Test:** This requirement shall be tested according to the procedures of annex D, test case~~s TC10015, TC10115, TC10222, TC11028 and~~ TC11029.

> NOTE: ~~No test for the action on receipt of a DISCONNECT message with the Cause information element missing is specified in this version of the TBR because it was not possible to develop and verify a test due to shortage of time and resources. ETSI intends to develop and verify an appropriate test for inclusion in a later version.~~

**Page 167, subclause 11.4.6.5.2**

Delete entire subclause.

**Page 168, subclause 11.4.6.6.1**

Amend text as indicated:

**Requirement:** When a message is received which has one or more unrecognized information elements, the TE shall check whether any are encoded to indicate "comprehension required" (refer to table 11.27 for information element identifiers reserved with this meaning). If any unrecognized information element is encoded to indicate "comprehension required", then the procedures in subclause 11.4.6.5.1 are followed; i.e. as if a "missing mandatory information element" error condition had occurred. If all unrecognized information elements are not encoded to indicate "comprehension required", then the TE shall proceed as follows.

Action shall be taken on the message and those information elements which are recognized and have valid content. When the received message is other than DISCONNECT, RELEASE or RELEASE COMPLETE, a STATUS message may be returned containing one Cause information element. The STATUS message shall indicate the Call state of the receiver after taking action on the message. The Cause information element shall contain Cause #99 "information element non-existent or not implemented", and the diagnostic field, if present, shall contain the information element identifier for each information element which was unrecognized.

Subsequent actions are determined by the sender of the unrecognized information elements. If a clearing message contains one or more unrecognized information elements, the error is reported to the local TE in the following manner:

~~a)        when a DISCONNECT message is received which has one or more unrecognized information elements, a RELEASE message shall be returned;~~

~~-~~b)        when a RELEASE message is received which has one or more unrecognized information elements, a RELEASE COMPLETE shall be returned;

~~c)        when a RELEASE COMPLETE message is received which has one or more unrecognized information elements, no action shall be taken on the unrecognized information.~~

**Test:** This requirement shall be tested according to the procedures of annex D, test cases TC10027, TC10028 ~~and~~ ~~, TC10718,~~ TC11118 ~~and TC11920~~.

**Page 171, subclause 11.5**

Amend text as indicated:

~~Definition~~**Requirement**: The duration of timer T305 shall be~~is~~ in the range 15 s to 45 s.

    NOTE 1:    A value of 30 s is recommended.

The duration of timer T308 shall be ~~is~~ in the range 3 s to 15 s.

    NOTE 2:    A value of 4 s is recommended.

**Test:** This requirement shall be tested according to the procedures of annex D, test cases TC21001 and TC21006.

**Page 173 to 176 clause A.2**

Replace entire clause A.2. by the following:

## A.2    Layer 1 and overvoltage requirements TBR-RT

**Table A.1: Layer 1 and overvoltage conditions table**

| Reference | Condition | Status | Support (Y/N) | Comment |
|-----------|-----------|--------|---------------|---------|
| 1 | Is TE mains powered? | o | | Affects requirements in clause 8. |
| 2 | Is TE PS1 powered? | o | | Affects requirements in subclauses 9.4 and 9.5. |
| ~~3~~ | ~~Does TE have a connection detector?~~ | ~~c1~~ | | ~~Affects requirements in subclause 9.4.~~ |
| 3~~4~~ | Is the TE intended to operate as a designated TE? | ~~C2~~c1 | | Affects requirements in subclause 9.5. |
| 4~~5~~ | Does the TE have a connection to earth? | O | | Affects requirements in subclause 9.5. |
| 5~~6~~ | Is the TE intended for use only in a physical point-to-point configuration? | O | | Affects requirements in subclauses 9.2 and 9.4. |
| 6~~7~~ | Is the TE capable of transmitting INFO 3 within 5 ms of receipt of INFO 2 or INFO 4 in state F4? | O | | Affects requirements in subclause 9.4. |

c1 ~~= n/a if A1.2 else o.~~
~~c2 = o if A.1.~~2 else n/a.

**Table A.2: Overvoltage requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|-----|-----------|-----------------|--------|---------------|
| 1 | 8.1 | Impulse transfer from mains, common mode. | c1 | |
| 2 | 8.2 | Impulse transfer from mains, transverse mode. | c1 | |
| 3 | 8.3 | Conversion of common mode to transverse mode. | m | |
| c1 = m if A.1.1 else n/a. | | | | |

**Table A.3: Layer 1 physical characteristics requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|-----|-----------|-----------------|--------|---------------|
| 1 | 9.1.1 | Case A | o1 | |
| 2 | 9.1.2 | Case B | o1 | |
| 3 | 9.1.3 | Case C | o1 | |
| o1. One or more options shall be chosen. | | | | |

**Table A.4: Layer 1 electrical characteristics requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|---|---|---|---|---|
| 1 | 9.2.1 | Bit rate | m | |
| 2 | 9.2.2.2 | Timing extraction jitter, configuration 1) | m | |
| 3 | 9.2.2.2 | Timing extraction jitter, configuration 2) | ~~c2~~c1 | |
| 4 | 9.2.2.2 | Timing extraction jitter, configuration 3a) | c1~~c2~~ | |
| 5 | 9.2.2.2 | Timing extraction jitter, configuration 3b) | c1~~c2~~ | |
| 6 | 9.2.2.2 | Timing extraction jitter, configuration 4) | m | |
| 7 | 9.2.2.3 | Total phase deviation input to output, configuration 1) | m | |
| 8 | 9.2.2.3 | Total phase deviation input to output, configuration 2) | c1~~c2~~ | |
| 9 | 9.2.2.3 | Total phase deviation input to output, configuration 3a) | c1~~c2~~ | |
| 10 | 9.2.2.3 | Total phase deviation input to output, configuration 3b) | c1~~c2~~ | |
| 11 | 9.2.2.3 | Total phase deviation input to output, configuration 4) | m | |
| 12 | 9.2.3 a) | TE transmitter output impedance, requirement (a) | m | |
| 13a | 9.2.3 b) | TE transmitter output impedance, requirement (b) at 50 ohm load | m | |
| 13b | 9.2.3 b) | TE transmitter output impedance, requirement (b) at 400 ohm load | c1~~c2~~ | |
| 14 | 9.2.4 | Pulse shape and amplitude (binary ZERO) | m | |
| 15 | 9.2.5.1 | Pulse amplitude when transmitting a high density pattern | m | |
| 16 | 9.2.5.2 | Pulse unbalance of an isolated couple of pulses | m | |
| 17 | 9.2.6.1 | Voltage on other test loads: 400 ohm load | c1~~c2~~ | |
| 18 | 9.2.6.2 | Voltage on other test loads: 5,6 ohm load | c1~~c2~~ | |
| 19 | 9.2.7 | Longitudinal Conversion Loss (LCL) of the transmitter outputs | m | |
| 20 | 9.2.8 | TE receiver input impedance | m | |
| 21 | 9.2.9 (1) | Receiver sensitivity - Noise and distortion immunity, configuration (1) | m | |
| 22 | 9.2.9 (2) | Receiver sensitivity - Noise and distortion immunity, configuration (2) | c1~~c2~~ | |
| 23 | 9.2.9 (3a) | Receiver sensitivity - Noise and distortion immunity, configuration (3a) | c1~~c2~~ | |
| 24 | 9.2.9 (3b) | Receiver sensitivity - Noise and distortion immunity, configuration (3b) | c1~~c2~~ | |
| 25 | 9.2.9 (4) | Receiver sensitivity - Noise and distortion immunity, configuration (4) | m | |
| 26 | 9.2.10 | Longitudinal Conversion Loss (LCL) of the receiver inputs | m | |
| c1~~c2~~ = n/a if A.~~.~~1.5~~6~~ else m. | | | | |

**Table A.5: Layer 1 functional characteristics requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|---|---|---|---|---|
| 1 | 9.3.1.1 | TE to NT | m | |
| 2 | 9.3.1.3 | Relative bit positions | m | |
| 3 | 9.3.2 | Line code | m | |

**Table A.6: Layer 1 interface procedure requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|---|---|---|---|---|
| 1 | 9.4.1.1 | Interframe (Layer 2) time fill | m | |
| 2 | 9.4.1.2 | Multipoint contention resolution mechanism | c1~~c3~~ | |
| 3 | 9.4.1.3 | Collision detection | c1~~c3~~ | |
| 4 | 9.4.2.3.1 | Activation/deactivation procedure for TEs powered from PS1, not including tests in state F5 (table 9.7). | c2~~c4~~ | |
| 5 | 9.4.2.3.1 | Activation/deactivation procedure for TEs powered from PS1, state F5 tests (table 9.7). | c3~~c5~~ | |
| 6 | 9.4.2.3.1 | Activation/deactivation procedure for TEs locally powered ~~and without a connection detector~~, not including tests in state F5 (table 9.8). | c4~~c6~~ | |
| 7 | 9.4.2.3.1 | Activation/deactivation procedure for TEs locally powered ~~and without a connection detector~~, state F5 tests (table 9.8). | c5~~c7~~ | |
| ~~8~~ | ~~9.4.2.3.1~~ | ~~Activation/deactivation procedure for TEs locally powered and with a connection detector, not including tests in state F5 (table 9.9).~~ | ~~c8~~ | |
| ~~9~~ | ~~9.4.2.3.1~~ | ~~Activation/deactivation procedure for TEs locally powered and with a connection detector, state F5 tests.~~ | ~~c9~~ | |
| 8~~10~~ | 9.4.2.3.2 | Timer values | m | |
| 9~~11~~ | 9.4.2.4 | TE activation times, not including tests in state F5. | m | |
| 10~~12~~ | 9.4.2.4 | TE activation times, state F5 tests. | C6~~c10~~ | |
| 11~~13~~ | 9.4.2.5 | Deactivation times | m | |
| 12~~14~~ | 9.4.3 | Frame alignment procedures | m | |
| 13~~15~~ | 9.4.4 | Multiframing | m | |
| 14~~16~~ | 9.4.5 | Idle Channel Code on the B-channels | c1~~c3~~ | |

c1~~c3~~ = n/a if A.1.5~~6~~ else m.
~~c4~~c2 = m if A.1.2 else n/a.
~~c5~~c3 = m if A.1.2~~6.4~~ and not A.1.6~~7~~ else n/a.
~~c6~~c4 = m if not A.1.2~~3~~ else n/a.
~~c7~~c5 = m if not A.1.2~~6.6~~ and not A1.6~~7~~ else n/a.
~~c8 = m if A.1.3 and not A.1.2 else n/a.~~
~~c9 = m if A6.8 and not A1.7.~~
~~c10~~c6 = m if not A.1.6~~7~~ else n/a.

**Table A.7: Layer 1 power feeding requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|---|---|---|---|---|
| 1 | 9.5.2 | Current transient | c1~~c11~~ | |
| 2 | 9.5.3.1 | Normal power conditions, PS1 powered terminal | c1~~c11~~ | |
| 3 | 9.5.3.1 | Normal power conditions, locally powered terminal | c2~~c12~~ | |
| 4 | 9.5.3.2.1 | Power available to the TE "designated" for restricted power operation | c3~~c13~~ | |
| 5 | 9.5.3.2.2 | Power available to locally powered and "non-designated" TEs | c4~~c14~~ | |
| 6 | 9.5.4 | Galvanic isolation | c5~~c15~~ | |
| 7 | 9.5.5.1.1a | Current/time limitations for remotely powered TEs in normal mode, option a) | c6~~c16~~ | |
| 8 | 9.5.5.1.1b | Current/time limitations for remotely powered TEs in normal mode, option b) | c6~~c16~~ | |
| 9 | 9.5.5.1.2a | Current/time limitations for designated TEs in restricted mode, option a) | c7~~c17~~ | |
| 10 | 9.5.5.1.2b | Current/time limitations for designated TEs in restricted mode, option b) | c7~~c17~~ | |
| 11 | 9.5.5.1.3 | Current/time limitations for non-designated and locally powered TEs in restricted mode. | C8~~c18~~ | |
| ~~12~~ | ~~9.5.5.1.4~~ | ~~Protection against PS1 interruption~~ | ~~c19~~ | |
| 12~~13~~ | 9.5.5.2.1 | Minimum TE start up current, restricted power mode | c3~~c13~~ | |
| 13~~14~~ | 9.5.5.2.1 | Minimum TE start up current, normal power mode | c1~~c11~~ | |
| 14~~15~~ | 9.5.5.2.2 | Protection against short term interruptions, restricted power mode | c3~~c13~~ | |
| 15~~16~~ | 9.5.5.2.2 | Protection against short term interruptions, normal power mode | c1~~c11~~ | |
| 16~~17~~ | 9.5.5.2.3 | Behaviour at the switch-over | c3~~c13~~ | |
| 17~~18~~ | 9.5.5.3.1 | DC unbalance of power sink 1 | c1~~c11~~ | |
| 18~~19~~ | 9.5.5.3.2 | Current unbalance in a pair | m | |

~~c11~~ c1 = m if A.1.2 else n/a.
~~c12~~ c2 = n/a if A.1.2 else m.
~~c13~~ c3 = m if A.1.4~~3~~ else n/a.
~~c14~~ c4 = n/a if A.1.3 ~~7.4~~ else m.
~~c15~~ c5 = m if A.1.5~~4~~ else n/a.
~~c16~~ c6 = ~~o2~~ o1 if A.1.2 else n/a.
~~c17~~ c7 = ~~o3~~ o2 if A.1.3~~4~~ else n/a.
~~c18~~ c8 = n/a if A.1.3~~4~~ else m.
~~c19 = m if A1.3 else n/a.~~
~~o2~~ o1. Only one option shall be chosen.
~~o3~~ o2. Only one option shall be chosen.

**Page 176 to 178, clause A.3**

Replace entire subclause A.3. by the following:

## A.3 Layer 2 TBR-RT

**Table A.8: Layer 2 point-to-point configuration requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|-----|-----------|-----------------|--------|---------------|
| 1 | 10.3 | Does the TE support a configuration using only a single point-to-point data link? | o | |
| 2 | 10 | Does the TE activate a physical layer connection between the TE and the network before the procedures of clause 10 are invoked? | m | |

**Table A.9: Layer 2 unacknowledged operation requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|-----|-----------|-----------------|--------|---------------|
| 1 | 10.4.1 | Transmission of unacknowledged information | c1~~c20~~ | |
| 2 | 10.4.2 | Receipt of unacknowledged information | c1~~c20~~ | |
| ~~c20~~ c1 = n/a if A.8.1 else m. | | | | |

**Table A.10: Layer 2 TEI management requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|---|---|---|---|---|
| 1 | 10.5.2 | TEI assignment procedure, automatic TEIs | c1~~c21~~ | |
| 2 | 10.5.2 | TEI assignment procedure, non-automatic TEIs | c1~~c21~~ | |
| 3 | 10.5.2.1 | Expiry of timer T202 | c2~~c22~~ | |
| 4 | 10.5.3~~.2~~ | Operation of the TEI check procedure | c3~~c23~~ | |
| 5 | 10.5.4.1 | Action taken by the data link layer entity receiving the MDL-REMOVE-REQUEST primitive | c2~~c22~~ | |
| 6 | 10.5.4.2 | Conditions for TEI removal, receipt of an identity remove message | c2~~c22~~ | |
| 7 | 10.5.4.2 | Conditions for TEI removal, receipt of <u>MDL-ERROR INDICATION indicating possible multiple TEI assignment</u>~~MPH-II(d)~~ | c4~~c22~~ | |
| ~~8~~ | ~~10.5.4.2~~ | ~~Conditions for TEI removal, receipt of MDL-ERROR INDICATION indicating possible multiple TEI assignment~~ | ~~c24~~ | |
| <u>8</u>~~9~~ | 10.5.5.2 | Operation of the TEI identity verify procedure | c4~~c24~~ | |
| <u>9</u>~~10~~ | 10.5.<u>1</u>~~5.3~~ | <u>General TEI management procedures</u> ~~Expiry of timer T202~~ | m~~c25~~ | |

~~c21~~ <u>c1</u> = n/a if A<u>.</u>8.1 else o<u>1</u>4.
~~c22~~ <u>c2</u> = m if A<u>.</u>10.1 else n/a.
~~c23~~ <u>c3</u> = n/a if A<u>.</u>8.1 else m.
~~c24~~ <u>c4</u> = o<u>1</u>5 if A<u>.</u>10.1 else n/a.
~~c25 = m if A10.9 else n/a.~~
<u>o1 = One or more options shall be chosen</u>
~~o4. One or more options shall be chosen.~~
~~o5. One or more options shall be chosen.~~

**Table A.11: Layer 2 establishment and release procedures requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|---|---|---|---|---|
| 1 | 10.6.1.1 | General | m | |
| 2 | 10.6.1.2 | Establishment procedures | m | |
| 3 | 10.6.1.3 | Procedure on expiry of timer T200 | m | |
| 4 | 10.6.2 | Termination of multiple frame operation | m | |
| ~~5~~ | ~~10.6.3.1~~ | ~~Identical transmitted and received commands~~ | ~~m~~ | |

**Table A.12: Layer 2 multiple frame operation requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|---|---|---|---|---|
| 1 | 10.7.1 | Transmitting I-frames | m | |
| 2 | 10.7.2 | Receiving I-frames | m | |
| 3 | 10.7.2.1 | P bit set to 1 | m | |
| 4 | 10.7.2.2 | P bit set to 0 | m | |
| 5 | 10.7.3 | Receiving acknowledgements | m | |
| 6 | 10.7.4 | Receiving REJ frames | m | |
| 7 | 10.7.5.1 | Receiving a valid RNR command or response | m | |
| 8 | 10.7.5.2 | Expiry of timer T200 during "peer receiver busy" | m | |
| 9 | 10.7.5.3 | Receiving a valid RNR command or response during "peer receiver busy" | m | |
| 10 | 10.7.5.4 | Receiving a valid RR or REJ command during "peer receiver busy" | m | |
| 11 | 10.7.5.5 | Appropriate supervisory response frame | m | |
| 12 | 10.7.6 | Waiting acknowledgement | m | |
| 13 | 10.8 | Re-establishment of multiple frame operation | m | |

**Table A.13: Layer 2 exception condition requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|---|---|---|---|---|
| 1 | 10.9.1 | N(S) sequence error | m | |
| 2 | 10.9.2 | Invalid frame condition | m | |
| 3 | 10.9.3 | Frame rejection condition | m | |
| 4 | 10.9.4 | Multiple-assignment of TEI value | c1~~c26~~ | |
| c1~~c26~~ = m if A.10.1 else n/a. | | | | |

**Table A.14: Layer 2 system parameters requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|---|---|---|---|---|
| 1 | 10.10.7 | Layer 2 response time, TE not operating in accordance with subclause 10.3 (200 ms). | c1~~c27~~ | |
| 2 | 10.10.7 | Layer 2 response time, TE operating in accordance with subclause 10.3 (500 ms). | c2~~c28~~ | |
| c1~~c27~~ = n/a if A.8.1 else m. | | | | |
| c2~~c28~~ = m if A.8.1 else n/a. | | | | |

## A.4 Layer 3 TBR-RT

**Table A.15: Layer 3 Call establishment at the originating interface requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|-----|-----------|-----------------|--------|---------------|
| 1 | 11.4.1 | Call establishment at the originating interface | m | |
| 2 | 11.4.1.1 | Call request, SETUP message with Sending Complete information element | o1o6 | |
| 3 | 11.4.1.1 | Call request, SETUP message with all called party address information, but without Sending Complete information element | o1o6 | |
| 4 | 11.4.1.1 | Call request, SETUP message without all called party address information | o1o6 | |
| 5 | 11.4.1.2 | Overlap sending, enter Overlap sending state | c1c29 | |
| 6 | 11.4.1.2 | Overlap sending, send INFORMATION messages | c2c30 | |
| 7 | 11.4.1.3.1 | Call proceeding, en-bloc sending | mc31 | |
| 8 | 11.4.1.3.2 | Call proceeding, overlap sending | c1c29 | |
| 9 | 11.4.1.4 | Call confirmation indication | m | |
| 10 | 11.4.1.5 | Call connected | m | |

c1c29 = m if A.15.3 or A.1514.4 else n/a.
c2c30 = m if A.15.4.
c31 = m if A15.2 or A15.3 else n/a.
o1o6. One or more options shall be chosen.

**Table A.16: Layer 3 Call establishment at the destination interface requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|---|---|---|---|---|
| 1 | 11.4.2 | Call establishment at the destination interface | m | |
| 2 | 11.4.2.1 | Incoming call, SETUP message delivered by point-to-point data link | c1~~c32~~ | |
| 3 | 11.4.2.1 | Incoming call, SETUP message delivered by broadcast data link | c2~~c33~~ | |
| 4 | 11.4.2.2.1 | Compatibility checking on Bearer capability information element, SETUP message delivered by point-to-point data link | c3~~c34~~ | |
| 5 | 11.4.2.2.1 | Compatibility checking on Bearer capability information element, SETUP message delivered by broadcast data link | c4~~c35~~ | |
| 6 | 11.4.2.2.1 | Compatibility checking on High layer compatibility information element, SETUP message delivered by broadcast data link | c4~~c35~~ | |
| 7 | 11.4.2.2.1 | Compatibility checking on Low layer compatibility information element, SETUP message delivered by broadcast data link | c4~~c35~~ | |
| ~~8~~ | ~~11.4.2.2.2~~ | ~~Address checking on the Called party number information element, SETUP message delivered by broadcast data link~~ | ~~c34~~ | |
| ~~9~~ | ~~11.4.2.2.2~~ | ~~Address checking on the Called party subaddress information element, SETUP message delivered by broadcast data link~~ | ~~c34~~ | |
| 8~~10~~ | 11.4.2.3.1 | B-channel selection-destination, SETUP message delivered by point-to-point data link | c1~~c32~~ | |
| 9~~11~~ | 11.4.2.3.2 | B-channel selection-destination, SETUP message delivered by broadcast data link. | c2~~c33~~ | |
| 10~~12~~ | 11.4.2.4 | Overlap receiving | o | |
| 11~~13~~ | 11.4.2.5.1 | Response to en-bloc SETUP or completion of overlap receiving | m | |
| 12~~14~~ | 11.4.2.6 | Call accept | m | |
| 13~~15~~ | 11.4.2.7 | Active indication | m | |
| 14~~16~~ | 11.4.2.8 | Non-selected user clearing | c4~~c35~~ | |

c1~~c32~~ = m if A.8.1 else n/a.
c2~~c33~~ = n/a if A.8.1 else m.
c3~~c34~~ = o if A.8.1 else n/a.
c4~~c35~~ = n/a if A.8.1 else o.

**Table A.17: Layer 3 Call clearing requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|---|---|---|---|---|
| 1 | 11.4.3.2 | Exception conditions | m | |
| 2 | 11.4.3.3 | Clearing initiated by the user | m | |
| 3 | 11.4.3.4.1 | Clearing when tones/announcements provided, Disconnect Indication state entered | o1~~o7~~ | |
| 4 | 11.4.3.4.1 | Clearing when tones/announcements provided, Release Request state entered | o1~~o7~~ | |
| 5 | 11.4.3.4.2 | Clearing when tones/announcements not provided | m | |
| 6 | 11.4.3.4.3 | Completion of clearing | m | |
| 7 | 11.4.3.5 | Clear collision | m | |

o1~~o7~~. One or more options shall be chosen.

**Table A.18: Layer 3 Call rearrangements requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|---|---|---|---|---|
| 1 | 11.4.4.1 | Call suspension | o | |
| 2 | 11.4.4.2 | Call suspended | c1~~c36~~ | |
| 3 | 11.4.4.3 | Call suspend error | c1~~c36~~ | |
| 4 | 11.4.4.4 | Call re-establishment | c1~~c36~~ | |
| 5 | 11.4.4.5 | Call resume errors | c1~~c36~~ | |
| c1~~c36~~ = m if A.18.1 else n/a. | | | | |

**Table A.19: Layer 3 error conditions requirements table**

| No. | Reference | TBR Requirement | Status | Support (Y/N) |
|---|---|---|---|---|
| ~~1~~ | ~~11.4.6.1~~ | ~~Protocol discrimination error~~ | ~~m~~ | |
| 1~~2~~ | 11.4.6.2 | Call reference procedural errors | m | |
| 2~~3~~ | 11.4.6.3 | Message type or message sequence errors | m | |
| 3~~4~~ | 11.4.6.4 | Duplicated information elements | m | |
| 4~~5~~ | 11.4.6.5.1 | Mandatory information element missing | m | |
| ~~6~~ | ~~11.4.6.5.2~~ | ~~Mandatory information element content error~~ | ~~m~~ | |
| 5~~7~~ | 11.4.6.6.1 | Unrecognized information element | m | |
| 6~~8~~ | 11.4.6.6.2 | Non-mandatory information element content error | m | |
| 7~~9~~ | 11.4.6.7 | Status enquiry procedure | m | |
| 8~~10~~ | 11.4.6.8 | Receiving a STATUS message | m | |
| 9~~11~~ | 11.4.7 | User notification procedure | m | |
| 10~~12~~ | 11.4.8 | Restart procedure | c1~~c37~~ | |
| 11 | 11.5 | TE Timer T305 | m | |
| 12 | 11.5 | TE Timer T308 | m | |
| c1~~c37~~ = m if A.8.1 else n/a. | | | | |

**Page 183, annex B, clause B.1.5, table B.1**

Amend table as indicated:

**Table B.1: Test case selection criteria**

| Name | TBR-RT reference | Comments |
|---|---|---|
| PS | A.1.2 | PS1 powered TE |
| DES | A.1.2 and A.1.3 ~~1.4~~ | PS1 powered, designated TE |
| NDES | A.1.2~~1~~ and not A.1.3 ~~4~~ | PS1 powered, non-designated TE |
| LP | not A.1.2 | Locally powered TE |
| ~~DET~~ | ~~A1.3~~ | ~~Locally powered TE with a connection detector~~ |
| ~~NDET~~ | ~~not A1.2 and not A1.3~~ | ~~Locally powered TE without a connection detector~~ |
| PTMP | not A.1.6 | TE intended to operate in a multipoint configuration |
| ETH | A.1.4~~5~~ | TE has a connection to earth |
| - | - | Test not performed |
| All | - | Test performed on all TEs |

**Page 184, annex B, clause B.1.5, table B.2**

Amend table as indicated:

**Table B.2: Test case index, tests involving different PS1 voltages**

| Test | Description | Status | | | | |
|------|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | | PS1 = +42V | PS1 = +24V | PS1 = -42V | PS1 = -32V | No ~~PS1~~ power |
| B.2.1 | Bit rate when transmitting an INFO 1 | PS | PS | DES | DES or LP | - |
| B.2.2.1 | TE jitter measurement characteristics (test A), Bus configuration (1) | - ~~PS~~ | PS | - | DES or LP | - |
| B.2.2.1 | TE jitter measurement characteristics (test A), Bus configuration (2) | - ~~PS and PTMP~~ | PS and PTMP | - | (DES or LP) and PTMP | - |
| B.2.2.1 | TE jitter measurement characteristics (test A), Bus configuration (3b) | - ~~PS and PTMP~~ | PS and PTMP | - | (DES or LP) and PTMP | - |
| B.2.2.1 | TE jitter measurement characteristics (test A), Bus configuration (3a) | - ~~PS and PTMP~~ | PS and PTMP | - | (DES or LP) and PTMP | - |
| B.2.2.1 | TE jitter measurement characteristics (test A), Bus configuration (4) | - ~~PS~~ | PS | - | DES or LP | - |
| B.2.2.2 | TE output phase deviation (test B), Bus configuration (1) | - ~~PS~~ | PS | - | DES or LP | - |
| B.2.2.2 | TE output phase deviation (test B), Bus configuration (2) | - ~~PS and PTMP~~ | PS and PTMP | - | (DES or LP) and PTMP | - |
| B.2.2.2 | TE output phase deviation (test B), Bus configuration (3b) | - ~~PS and PTMP~~ | PS and PTMP | - | (DES or LP) and PTMP | - |
| B.2.2.2 | TE output phase deviation (test B), Bus configuration (3a) | - ~~PS and PTMP~~ | PS and PTMP | - | (DES or LP) and PTMP | - |
| B.2.2.2 | TE output phase deviation (test B), Bus configuration (4) | - ~~PS~~ | PS | - | DES or LP | - |
| B.2.3.1 | TE transmitter output impedance Test A | - ~~PS~~ | PS | - ~~DES~~ | DES or LP | - |
| B.2.3.2 | TE transmitter output impedance Test B, 50 ohm load | - ~~PS~~ | PS | - ~~DES~~ | DES or LP | - |
| B.2.3.2 | TE transmitter output impedance Test B, 400 ohm load | - ~~PS and PTMP~~ | PS and PTMP | - ~~DES and PTMP~~ | (DES or LP) and PTMP | - |
| B.2.3.3 | TE transmitter output impedance Test C | - ~~PS~~ | PS | - ~~DES~~ | DES or LP | - |
| B.2.3.4 | TE transmitter output impedance Test D, state F1 | - | - | - | - | All ~~NDET or PS~~ |
| ~~B.2.3.4~~ | ~~TE transmitter output impedance Test D, state F1.0 and state F1.1~~ | ~~-~~ | ~~-~~ | ~~-~~ | ~~-~~ | ~~DET~~ |

(continued)

**Table B.2 (continued): Test case index, tests involving different PS1 voltages**

| Test | Description | Status | | | | |
|---|---|---|---|---|---|---|
| B.2.3.5 | TE transmitter output impedance Test E, state F1 | - | - | - | - | All ~~NDET or PS~~ |
| ~~B.2.3.5~~ | ~~TE transmitter output impedance Test E, state F1.0 and state F1.1~~ | ~~-~~ | ~~-~~ | ~~-~~ | ~~-~~ | ~~not CTR and DET~~ |
| B.2.4 | Pulse shape and amplitude | PS | PS | DES | DES or LP | - |
| B.2.5.1 | Pulse amplitude | All | All | - ~~LP~~ | DES or LP | - |
| B.2.5.2 | Pulse unbalance of an isolated couple of pulses | All | All | - ~~LP~~ | DES or LP | - |
| B.2.6.1 | Voltage on other test loads Test A | PS and PTMP | PS and PTMP | DES and PTMP | (DES or LP) and PTMP | - |
| B.2.6.2 | Voltage on other test loads Test B | PS and PTMP | PS and PTMP | DES and PTMP | (DES or LP) and PTMP | - |
| B.2.7 | Longitudinal conversion loss of transmitter output, state F3 | All | All | DES or LP | DES or LP | - |
| B.2.7 | Longitudinal conversion loss of transmitter output, state F1 ~~and F1.0~~ | - | - | - | - | All |
| B.2.8.1.1 | TE receiver input impedance Test A | - ~~PS~~ | PS ~~or LP~~ | - ~~DES~~ | DES or LP | - |
| B.2.8.1.2 | TE receiver input impedance Test B | - ~~PS~~ | PS | - ~~DES~~ | DES or LP | - |
| B.2.8.1.3 | TE receiver input impedance Test C, state F1 | - | - | - | - | All ~~CTR or PS or NDET~~ |
| ~~B.2.8.1.3~~ | ~~TE receiver input impedance Test C, state F1.0 and state F1.1~~ | ~~-~~ | ~~-~~ | ~~-~~ | ~~-~~ | ~~not CTR and DET~~ |
| B.2.8.1.4 | TE receiver input impedance Test D, state F1 | - | - | - | - | All ~~CTR or PS or NDET~~ |
| ~~B.2.8.1.4~~ | ~~TE receiver input impedance Test D, state F1.0 and state F1.1~~ | ~~-~~ | ~~-~~ | ~~-~~ | ~~-~~ | ~~not CTR and DET~~ |
| B.2.8.2 | Receiver sensitivity - noise and distortion immunity, Bus configuration (1) | - ~~PS~~ | PS | - | DES or LP | - |
| | | | | | | |

(continued)

**Table B.2 (concluded): Test case index, tests involving different PS1 voltages**

| Test | Description | Status | | | | |
|------|-------------|--------|---|---|---|---|
| B.2.8.2 | Receiver sensitivity - noise and distortion immunity, Bus configuration (2) | ~~- PS and PTMP~~ | PS and PTMP | - | (DES or LP) and PTMP | - |
| B.2.8.2 | Receiver sensitivity - noise and distortion immunity, Bus configuration (3a) | ~~- PS and PTMP~~ | PS and PTMP | - | (DES or LP) and PTMP | - |
| B.2.8.2 | Receiver sensitivity - noise and distortion immunity, Bus configuration (3b) | ~~- PS and PTMP~~ | PS and PTMP | - | (DES or LP) and PTMP | - |
| B.2.8.2 | Receiver sensitivity - noise and distortion immunity, Bus configuration (4) | ~~- PS~~ | PS | - | DES or LP | - |
| B.2.8.3 | Unbalance about earth of receiver input, state F3 | All | All | DES or LP | DES or LP | - |
| B.2.8.3 | Unbalance about earth of receiver input, state F1 ~~and F1.0~~ | - | - | - | - | All |
| B.5.1.1 | Normal power provision (Test A) | PS | PS | - | - | - |
| B.5.1.2 | Normal power provision (Test B) | PS | PS | - | - | - |
| B.5.1.3 | Normal power provision (Test C) | PS | PS | - | - | - |
| B.5.1.4 | Normal power provision (Test D) | LP | LP | - | - | - |
| B.5.2.1 | Restricted power provision (Test A) | - | - | DES | DES | - |
| B.5.2.2 | Restricted power provision (Test B) | - | - | DES | DES | - |
| B.5.2.3 | Restricted power provision (Test C) | - | - | DES | DES | - |
| B.5.2.4 | Restricted power provision (Test D) | - | - | LP | LP | - |
| B.5.2.5 | Restricted power provision (Test F) | - | - | NDES | NDES | - |
| B.5.3 | Current transient | PS | PS | DES | DES | - |

**Page 187, annex B, subclause B.1.5, table B.3**

Amend table as indicated:

**Table B.3: Test case index, tests not involving different PS1 voltages**

| Test | Description | Status |
|---|---|---|
| B.3.1.1 | Binary organisation of frame Test A | All |
| B.3.1.2 | Binary organisation of frame Test B | All |
| B.5.4.1 | Limitation on power sink during transient conditions, Current/time limitation for TE, test 1 | PS and PTMP |
| B.5.4.1 | Limitation on power sink during transient conditions, Current/time limitation for TE, test 2 | <u>DES</u> ~~PS~~ and PTMP |
| B.5.4.2 | Limitation on power sink during transient conditions, Current/time limitation for TE when connecting | (NDES or LP) and PTMP |
| ~~B.5.4.3~~ | ~~Limitation on power sink during transient conditions, Behaviour of a TE using a connection detector~~ | ~~DET~~ |
| B.5.4.4.1 | Power start-up test after removal of short-circuit, test 1 restricted mode | DES |
| B.5.4.4.1 | Power start-up test after removal of short-circuit, test 2 normal mode | PS |
| B.5.4.4.2 | Power start-up test at low input voltage | PS |
| B.5.4.5.1 | Protection against short-term interruptions, Normal power | PS |
| B.5.4.5.2 | Protection against short-term interruptions, Restricted power | DES |
| B.5.4.6.1 | Behaviour at the switch-over, normal power | DES |
| B.5.4.6.2 | Behaviour at the switch-over, Restricted power | DES |
| B.5.4.7 | DC unbalance of TEs using power sink 1 | PS |
| B.5.4.8 | Effect of current unbalance | All |
| B.5.5 | Galvanic isolation | ETH |

**Page 196, subclause B.2.3.4**

Amend text as indicated.

Results:     The measured value shall exceed the lower limit of figure 9.4 given in subclause 9.2.3.

~~When the IUT is a locally powered TE able to detect PS1, two tests shall be performed (power off/power on without PS1).~~

**Page 197, subclause B.2.3.5**

Amend text as indicated.

Results:     Peak current shall not exceed 0,6 mA.

~~When the IUT is a locally powered TE able to detect PS1, two tests shall be performed (power off/power on without PS1).~~

**Page 206, subclause B.2.8.1.3**

Amend text as indicated.

Results:     Shall exceed the lower limit of figure 9.4 given in subclause 9.2.3.

~~When the IUT is a locally powered TE able to detect PS1, two tests shall be performed (power off/power on without PS1).~~

**Page 207, subclause B.2.8.1.4**

Amend text as indicated.

Results:                              The peak current shall not exceed 0,6 mA peak value.

~~When the IUT is a locally powered TE able to detect PS1, two tests shall be done (powered off/powered on without PS1).~~

**Page 350, subclause B.5.4.2**

Amend System state as indicated.

System state:
                    - for non-designated TE: ~~I~~inactive (state F1 ~~and F1.1~~).

                    - for locally powered TE: local power on.

**Page 351, subclause B.5.4.3**

Delete entire subclause.

**Page 355, subclause B.5.4.5.2, figure B.40**
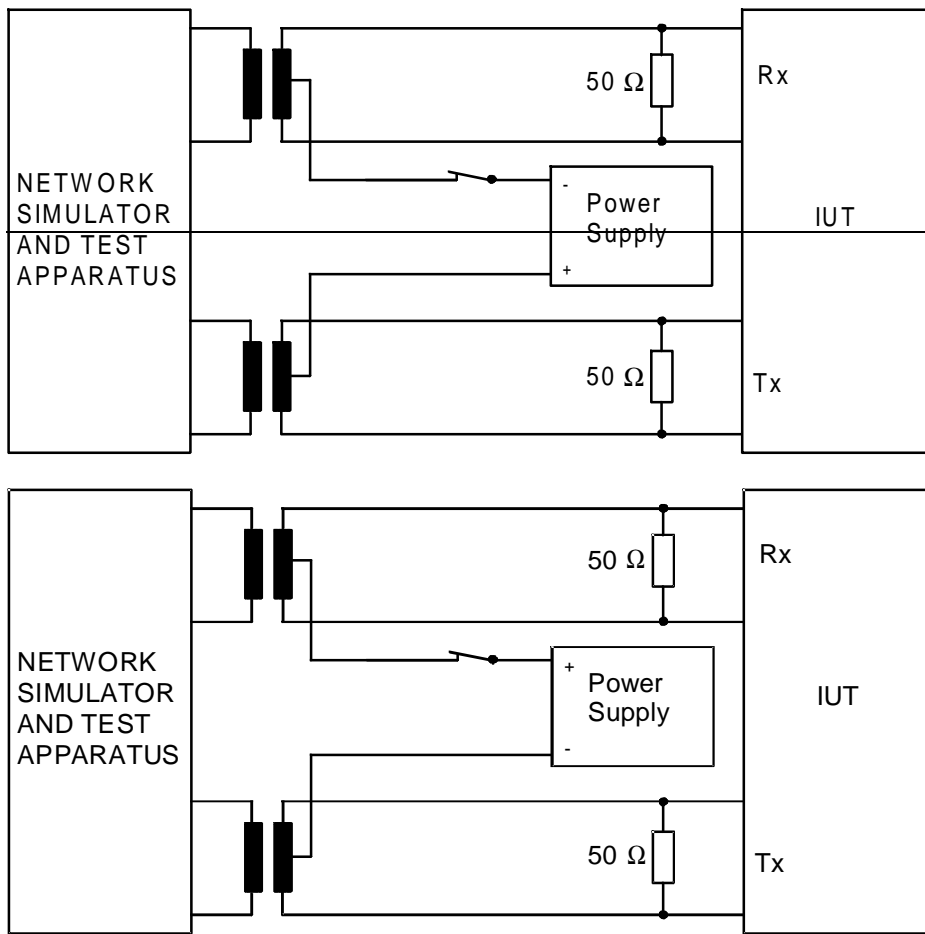


**Figure B.40: Test configuration**

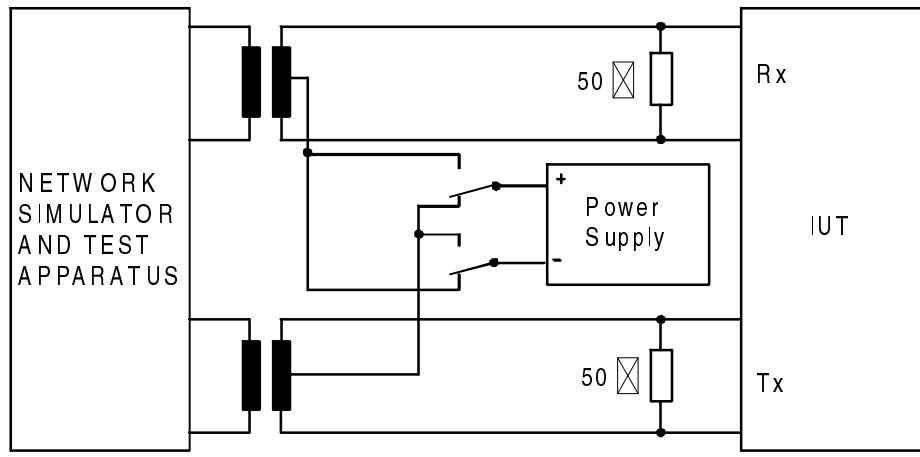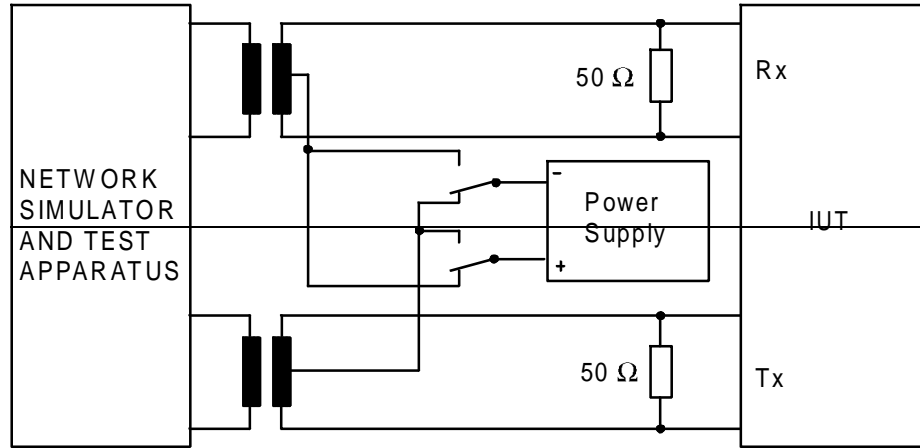**Page 357, subclause B.5.4.6.2, figure B.43**



**Figure B.43: TEst configuration**

**Page 574, table E.3**

Amend table as indicated:

**Table E.3: Implemented values**

| Item | Reference | Description | Value |
|---|---|---|---|
| E.3.1 | | State the duration of the selftest. | |
| E.3.2 | 9.4.2.4 | State the value of the timer T3. | |
| E.3.3 | 9.4.2.3 | State the value of timer T_APPLI1 which represents the delay needed by the application to establish a call. (Layer 1 is deactivated). | |
| E.3.4 | 9.4.2.3 | State the value of timer T_APPLI2 which represents the delay needed by the application to clear a call. | |
| E.3.5 | 9.4.2.3 | State whether the TE initiates automatic TEI assignment immediately after receiving INFO 4 following connection to the network. | |
| ~~E.3.6~~ | ~~9.4.2.3~~ | ~~State whether the TE implements Case 1 or Case 2 of note 6 of table 9.9. (Only applicable to locally powered TEs with a connection detector.)~~ | |
| E.3.6~~7~~ | 9.5.5.2.1 | State the time needed by the TE to reach the operational condition after removal of short circuit for:<br>- normal mode<br>- restricted mode<br>- at low input VOLTAGE | |
| E.3.7~~8~~ | 9.5.5.2.3 | State the time needed for the TE to restrict its power consumption after the switch-over from normal mode to restricted mode PS1 (applicable to designated terminals only). | |

**Page 613 and 615, annex F, subclause F.3.2, table F.2 (continued)**

Amend the following rows of table F.2 as indicated:

**Table F.2 (continued): Changes with respect to ETS 300 125**

| Subclause of ETS 300 125 | Subclause of TBR 3 | Status | Justification |
|---|---|---|---|
| | | | |
| 5.3.5.3 Expiry of timer T202 | 10.5.5.3 | X~~4f~~ | Requirement considered as non-essential by the special ITAAAG group.~~See above.~~ |
| | | | |
| 5.5.5.1 Identical transmitted and received commands | 10.6.3.1 | X~~4f~~ | Requirement considered as non-essential by the special ITAAAG group.~~The procedure for collision of SABME frames is essential. If it is not implemented the network will not receive a response to the SABME which it transmitted. This can result in a situation where the TEI value is lost. The procedure for collision of DISC is not included, as there is no requirement for the TE to be capable of sending a DISC.~~ |
| | | | |

**Page 626, subclause F.4.7.**

Amend the text of the first paragraph as indicated:

All the layer 3 user side timers except <u>T305 and T308 </u>are considered not to be essential. The reasons in each case are included in the table below.

Amend the following rows of table F.3 as indicated:

| | |
|---|---|
| T305 | <u>Timer is essential</u> ~~ETS 300 102 has the timer set to 30s. The network side timer T305 or T306 will also expire after 30 s and cause a RELEASE to be sent, achieving the same effect.~~ |
| T308 | <u>Timer is essential</u> ~~ETS 300 102 first edition has the timer set to 4s. The second edition sets the timer to (N200+1)\*T200. An error-free network will never permit the timer to expire, because the network will respond to a RELEASE with a RELEASE COMPLETE.~~ |

**Page 637, annex F, subclause F.4.8, table F.4 (continued)**

Amend the following rows of table F.4 as indicated:

**Table F.4 (continued): Changes with respect to ETS 300 102-1**

| Subclause of ETS 300 102-1 | Subclause of TBR | Status | Justification |
|---|---|---|---|
| | | | |
| 5.8.1 Protocol discrimination error | 11.4.6.1 | <u>X</u>~~4f~~ | <u>Requirement considered as non-essential by the special ITAAAG group.</u>~~It was intended that the requirement should be modified (and a TBR-RT question added) to address the possibility that a TE may be simultaneously capable of supporting Euro-ISDN and a national ISDN protocol with a different protocol discriminator. Time has not permitted the inclusion of suitable text.~~ |
| | | | |
| 5.8.6.1 Mandatory information element missing | 11.4.6.5.1 | 4f | <u>2nd requirement is essential. 1st, 3rd, 4th, 5th, 6th requirements considered as non-essential by the special ITAAAG group.</u>~~Necessary to future proof the TE against additional features on the network.~~ |
| 5.8.6.2 Mandatory information element content error | 11.4.6.5.2 | <u>X</u>~~4f~~ | <u>Requirement considered as non-essential by the special ITAAAG group.</u>~~Necessary to future proof the TE against additional features on the network.~~ |
| | | | |
| 5.8.7.1 Unrecognized information element | 11.4.6.6.1 | 4f | <u>2nd requirement is essential. Requirements a) and c) considered as non-essential by the special ITAAAG group.</u>~~Necessary to future proof the TE against additional features on the network. Text takes into account the second edition.~~ |
| | | | |
| 9.2 Timers in the User side | <u>11.5</u> | <u>4f</u>~~X~~ | <u>Requirement for T305 and T308 was included by the PE-resolution meeting for TBR 3 and TBR 4. All <u>other</u> Layer 3 timers except T317 relating to requirements included in the TBR would require a network misoperation in order to occur. See subclause F.4.7 for more detail.</u> |
| | | | |

## ATS in electronic form

TTCN.GR and TTCN.MP representations of this Abstract Test Suite (ATS) are contained in an archive file (003__B11.LZH) which accompanies this TBR. After decompression, the archive file will yield the Graphical representation for each layer as follows:

- XBU003L1.PDF (layer 1);
- XBU003L2.PDF (layer 2);
- XBU003L3.PDF (layer 3);

and the Machine Processable representation for each layer as follows:

- XBU003L1.MP (layer 1);
- XBU003L2.MP (layer 2);
- XBU003L3.MP (layer 3).

> NOTE: According to ISO/IEC 9646-3 [8], in case of a conflict in interpretation of the operational semantics of TTCN.GR and TTCN.MP, the operational semantics of the TTCN.GR representation takes precedence.

## Revisions to the test suites

### Page 213, annex B, clause B.4

Delete clause and replace with text contained in files XBU003L1.GR/PDF.

### Page 361, annex C

Delete annex and replace with text contained in files XBU003L2.GR/PDF.

### Page 438, annex D

Delete annex and replace with text contained in files XBU003L3.GR/PDF.

**History**

| Document history | | |
|---|---|---|
| November 1995 | First Edition | |
| May 1996 | Unified Approval Procedure | UAP 47:     1996-05-20 to 1996-10-11 |
| June 1997 | Vote | V 9735:     1997-06-17 to 1997-08-29 |
| December 1997 | Amendment 1 to First Edition | |
| | | |