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ISDN NT port on Terminal Equipment

Reference

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Foreword

This ETSI Standard (ES) has been produced by ETSI Technical Committee Access and Terminals (AT), and is now submitted for the ETSI standards Membership Approval Procedure.

1 Scope

The present document will identify the Layer 1, 2 and 3 requirements for the provision of an ISDN BRI or PRI NT1 port on a Terminal Equipment.

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 and/or edition number or version number) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies.

[1]   ETSI EN 300 012-1: "Integrated Services Digital Network (ISDN); Basic User-Network Interface (UNI); Part 1: Layer 1 specification".

[2]   ETSI ETS 300 012-5 (Edition 2): "Integrated Services Digital Network (ISDN); Basic User-Network Interface (UNI); Part 5: Conformance test specification for interface IB".

[3]   ETSI EN 300 011-1: "Integrated Services Digital Network (ISDN);Primary rate User Network Interface (UNI);Part 1: Layer 1 specification".

[4]   ETSI ETS 300 011-2 (Edition 2): "Integrated Services Digital Network (ISDN); Primary rate User-Network Interface (UNI); Part 2: Conformance test specification for interface IA and IB".

[5]   ETSI ETS 300 402-6 (Edition 1): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Data link layer; Part 6: Test Suite Structure and Test Purposes (TSS&TP) specification for the general protocol".

[6]   ETSI EN 300 403-6: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 6: Test Suite Structure and Test Purposes (TSS&TP) specification for the network".

[7]   ETSI ES 201 912 (V1.1.1): "Access and Terminals (AT); Short Message Service (SMS) for PSTN/ISDN; Short Message Communication between a fixed network Short Message Terminal Equipment and a Short Message Service Centre".

[8]   ETSI ETS 300 050 (Edition 1): "Integrated Services Digital Network (ISDN); Multiple Subscriber Number (MSN) supplementary service; Service Description".

[9]   ETSI ETS 300 059 (Edition 1): "Integrated Services Digital Network (ISDN); Subaddressing (SUB) supplementary service; Service Description".

[10]   ETSI ETS 300 062 (Edition 1): "Integrated Services Digital Network (ISDN); Direct Dialling In (DDI) supplementary service; Service Description".

[11]   ETSI ETS 300 178 (Edition 1): "Integrated Services Digital Network (ISDN); Advice of Charge: charging information at call set-up time (AOC-S) supplementary service; Service description".

[12]   ETSI ETS 300 179 (Edition 1): "Integrated Services Digital Network (ISDN); Advice of Charge: charging information during the call (AOC-D) supplementary service; Service description".

[13]   ETSI ETS 300 180 (Edition 1): "Integrated Services Digital Network (ISDN); Advice of Charge: charging information at the end of the call (AOC-E) supplementary service; Service description".

[14]   ETSI ETS 300 136 (Edition 1): "Integrated Services Digital Network (ISDN); Closed User Group (CUG) supplementary service; Service description".

[15]   ETSI EN 301 001-1 (V1.2.2): "Integrated Services Digital Network (ISDN); Outgoing Call Barring (OCB) supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[16]   ETSI ETS 300 056 (Edition 1): "Integrated Services Digital Network (ISDN); Call Waiting (CW) supplementary service; Service Description".

[17]   ETSI EN 300 357 (V1.2.1): "Integrated Services Digital Network (ISDN); Completion of Calls to Busy Subscriber (CCBS) supplementary service; Service description".

[18]   ETSI EN 301 065-1 (V1.2.2): "Integrated Services Digital Network (ISDN); Completion of Calls on No Reply (CCNR) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[19]   ETSI ETS 300 128 (Edition 1): "Integrated Services Digital Network (ISDN); Malicious Call Identification (MCID) supplementary service; Service description".

[20]   ETSI ETS 300 208 (Edition 1): "Integrated Services Digital Network (ISDN); Freephone (FPH) supplementary service; Service description".

[21]   ETSI ETS 300 200 (Edition 1): "Integrated Services Digital Network (ISDN); Call Forwarding Unconditional (CFU) supplementary service; Service description".

[22]   ETSI EN 300 199 (V1.2.1): "Integrated Services Digital Network (ISDN); Call Forwarding Busy (CFB) supplementary service; Service description".

[23]   ETSI EN 300 201 (V1.2.1): "Integrated Services Digital Network (ISDN); Call Forwarding No Reply (CFNR) supplementary service; Service description".

[24]   ETSI ETS 300 202 (Edition 1): "Integrated Services Digital Network (ISDN); Call Deflection (CD) supplementary service; Service description".

[25]   ETSI EN 301 133 (V1.1.1): "Integrated Services Digital Network (ISDN); Selective Call Forwarding (SCF) supplementary services (unconditional, busy and no reply); Service description".

[26]   ETSI ETS 300 284 (Edition 1): "Integrated Services Digital Network (ISDN); User-to-User Signalling (UUS) supplementary service; Service description".

[27]   ETSI EN 300 650 (V1.2.1): "Integrated Services Digital Network (ISDN); Message Waiting Indication (MWI) supplementary service; Service description".

[28]   ETSI EN 301 479 (V1.1.2): "Integrated Services Digital Network (ISDN); Line Hunting (LH) supplementary service; Service description".

[29]   ETSI ETS 300 139 (Edition 1): "Integrated Services Digital Network (ISDN); Call Hold (HOLD) supplementary service; Service description".

[30]   ETSI ETS 300 186 (Edition 1): "Integrated Services Digital Network (ISDN); Three-Party (3PTY) supplementary service; Service description".

[31]   ETSI EN 300 367 (V1.2.1): "Integrated Services Digital Network (ISDN); Explicit Call Transfer (ECT) supplementary service; Service description".

[32]   ETSI ETS 300 183 (Edition 1): "Integrated Services Digital Network (ISDN); Conference call, add-on (CONF) supplementary service; Service description".

[33]   ETSI ETS 300 164 (Edition 1): "Integrated Services Digital Network (ISDN); Meet-Me Conference (MMC) supplementary service; Service description".

[34]   ETSI EN 300 089 (V3.1.1): "Integrated Services Digital Network (ISDN); Calling Line Identification Presentation (CLIP) supplementary service; Service description".

[35]   ETSI EN 300 090 (V1.2.1): "Integrated Services Digital Network (ISDN); Calling Line Identification Restriction (CLIR) supplementary service; Service description".

[36]   ETSI EN 300 094 (V2.1.1): "Integrated Services Digital Network (ISDN); Connected Line Identification Presentation (COLP) supplementary service; Service description".

[37]   ETSI ETS 300 095 (Edition 1): "Integrated Services Digital Network (ISDN); Connected Line Identification Restriction (COLR) supplementary service; Service description".

[38]   ETSI ETS 300 710 (Edition 1): "Integrated Services Digital Network (ISDN); Public Switched Telephone Network (PSTN); Universal Access Number (UAN) service; Service description".

[39]   ETSI ETS 300 048 (Edition 2): "Integrated Services Digital Network (ISDN); ISDN Packet Mode Bearer Services (PMBS); ISDN Virtual Call (VC) and Permanent Virtual Circuit (PVC) bearer services provided by the B-channel of the user access - basic and primary rate".

[40]   ETSI ETS 300 711 (Edition 1): "Integrated Services Digital Network (ISDN); Public Switched Telephone Network (PSTN); Virtual Card Calling (VCC); Service description".

[41]   ETSI ETS 300 713 (Edition 1): "Integrated Services Digital Network (ISDN); Public Switched Telephone Network (PSTN); Televoting (VOT) service; Service description".

[42]   ETSI ETS 300 053 (Edition 1): "Integrated Services Digital Network (ISDN); Terminal Portability (TP) supplementary service; Service Description".

[43]   TRAC ISDN Type Approval Advisory Board Advisory Note 102 (1999-05-21): "Power consumption of Terminal Equipments".

[44]   EN 60603-7: "Connectors for frequencies below 3 MHz for use with printed boards - Part 7: Detail specification for connectors, 8-way, including fixed and free connectors with common mating features, with assessed quality".

[45]   TRAC ISDN Type Approval Advisory Board Advisory Note 126 (2000-02-08): "Power consumption of locally powered TE which draw power from the basic rate interface".

3   Definitions, symbols and abbreviations

Void

4   ISDN NT port on Terminal Equipment requirements

4.1   Issue under consideration

To date the Layer 1, 2 and 3 requirements for an ISDN BRI or PRI NT1 interface had be detailed in a number of ETSI deliverables. The present document brings together all these requirements in one document and is intended to aid in the design and test of such ports.

This could be used for different scenarios for example: NT1 ports on network termination devices, complex terminal equipment and private networks. Under all of these scenarios clauses 4.2 to 4.4 should be followed.

Clause 4.5 details the supplementary services that maybe optionally supported by the terminal. This should be followed only for the supplementary services that are supported by the terminals that are intended to be connected to the NT1 port in question.

4.2   Layer 1 requirements for an ISDN BRI or PRI NT1 port

At Layer 1 the NT1 interface is defined as the I_b interface.

Basis Rate Ib Interface		Requirement description	Primary Rate Ib Interface	
EN 300 012-1 [1] Clause	ETS 300 012-5 [2] Tests		EN 300 011-1 [3] Clause	ETS 300 011-2 [4] Tests
1	1, 4 and A2	Scope and general information	1 and Annex A	1 and 4
6	5	Functional characteristics	5	5.1
7 and 8	6	Interface procedures	6 and 7	5.2
9	7	Electrical characteristics	8	5.3 and 5.4
10	8	Power feeding. Note 1	9	5.5
11	4.10	Interface connector. Note 2	4.4	4.3
NOTE 1: For the Basic Rate Interface, see annex A.				
NOTE 2: For the Primary Rate Interface, the use of permanent wiring connections from TE to NT are also permitted as an alternative to the specified Interface connector specified in EN 60603-7 [44].				

4.3   Layer 2 requirements for an ISDN BRI or PRI NT1 port

4.3.1   Layer management - Network as referenced in ETS 300 402-6

Purpose reference clause	Data link state	ATS Test case reference	Notes
6.2.1.2.1	DL state 1	L2N_L10_V_1 to L2N_L10_S_13	
6.2.1.2.2	DL state 4	L2N_L40_V_1 to L2N_L40_C_1	
6.2.1.2.3	DL state 5.0	L2N_L50_V_1 to L2N_L50_C_1	
6.2.1.2.4	DL state 6.0	L2N_L60_V_1 to L2N_L60_C_1	
6.2.1.2.5	DL state 7.0	L2N_L70_V_1 to L2N_L70_I_2	
6.2.1.2.6	DL state 8.0	L2N_L80_V_1 to L2N_L80_I_2	

4.3.2   Data control - Network as referenced in ETS 300 402-6

Purpose reference clause	Data link state	ATS Test case reference	Notes
6.2.2.1	DL state 4.0	L2C_D40_V_1 to L2C_D40_S_11	
6.2.2.2	DL state 5.0	L2C_D50_V_1 to L2C_D50_T_1	
6.2.2.3	DL state 5.1	L2C_D51_V_1 to L2C_D51_V_2	
6.2.2.4	DL state 6.0	L2C_D60_V_1 to L2C_D60_T_1	
6.2.2.5 and 6.2.2.6	DL state 7.0 without and with outstanding I frames	L2C_D70_V_1 to L2C_D70_T_8	
6.2.2.7	DL state 7.1	L2C_D71_V_1 to L2C_D71_I_2	
6.2.2.8 and 6.2.2.9	DL state 7.4 without and with outstanding I frames	L2C_D74_V_1 to L2C_D74_T_9	
6.2.2.10	DL state 7.5	L2C_D75_V_1 to L2C_D70_I_2	
6.2.2.11 and 6.2.2.12	DL state 8.0 without and with outstanding I frames	L2C_D80_V_1 to L2C_D80_C_1	
6.2.2.13	DL state 8.1	L2C_D81_V_1 to L2C_D81_I_2	
6.2.2.14 and 6.2.2.15	DL state 8.4 without and with outstanding I frames	L2C_D84_V_1 to L2C_D84_C_1	
6.2.2.16	DL state 8.5	L2C_D85_V_1 to L2C_D85_I_2	

4.4   Layer 3 requirements for an ISDN BRI or PRI NT1 port

Basic call control - Network as referenced in EN 300 403-6 [6].

Purpose reference clause	Data link state	ATS Test case reference	Notes
6.2.1	Null call state N00	L3N_N00_V_001 to L3N_N00_S_012	
6.2.2	Overlap Sending call state N02	L3N_N02_V_001 to L3N_N02_S_010	
6.2.3	Outgoing Call Proceeding call state N03	L3N_N03_V_001 to L3N_N03_S_010	
6.2.4	Call Delivered call state N04	L3N_N04_V_001 to L3N_N04_S_010	
6.2.5	Call Present call state N06	L3N_N06_V_001 to L3N_N06_S_009	
6.2.6	Call Received call state N07	L3N_N07_V_001 to L3N_N07_S_011	
6.2.7	Incoming Call Proceeding call state N09	L3N_N09_V_001 to L3N_N09_S_011	
6.2.8	Active call state N10 (Incoming call)	L3N_N10I_V_001 to L3N_N10I_S_010	
6.2.9	Active call state N10 (Outgoing call)	L3N_N10O_V_001 to L3N_N10O_S_010	
6.2.10	Disconnect Indication call state N12 (Incoming call)	L3N_N12I_V_001 to L3N_N12I_S_008	
6.2.11	Disconnect Indication call state N12 (Outgoing call)	L3N_N12O_V_001 to L3N_N12O_S_008	
6.2.12	Release Request call state N19 (Incoming call)	L3N_N19I_V_001 to L3N_N19I_S_008	
6.2.13	Release Request call state N19 (Outgoing call)	L3N_N19O_V_001 to L3N_N19O_S_008	
6.2.14	Call Abort call state N22	L3N_N22_V_001 to L3N_N22_V_014	
6.2.15	Overlap Receiving call state N25	L3N_N25_V_001 to L3N_N25_S_011	
6.2.16	Restart Null call state R00 (Incoming call)	L3N_R00I_V_001 to L3N_R00I_S_012	
6.2.17	Restart null call state R00 (Outgoing call)	L3N_R00O_V_001 to L3N_R00O_S_012	
6.2.18	Restart Request call state R01	L3N_R01_V_001 to L3N_R01_S_011	
6.2.19	Message segmentation procedure	L3N_SEG_V_001 to L3N_SEG_S_001	

4.5   Supplementary Services requirements for an ISDN BRI or PRI NT1 port

The following table details the Supplementary services that maybe supported on the interface in question.

Supplementary Service Abbreviation	Supplementary Service		Supported on:		Notes
	Standard	Title	BRA	PRA	
SMS	ES 201 912 [7]	Short Message Service	Yes	Yes	
MSN	ETS 300 050 [8]	Multiple Subscriber Number	Yes	Yes	
SUB	ETS 300 059 [9]	Subaddressing	Yes	Yes	
DDI	ETS 300 062 [10]	Direct Dialling In	Yes	Yes	
AOC-S	ETS 300 178 [11]	Advice of Charge: charging information at call set-up time	Yes	Yes	
AOC-D	ETS 300 179 [12]	Advice of Charge: charging information during the call	Yes	Yes	
AOC-E	ETS 300 180 [13]	Advice of Charge: charging information at the end of the call	Yes	Yes	
CUG	ETS 300 136 [14]	Closed User Group	Yes	Yes	
OCB	EN 301 001-1 [15]	Outgoing Call Barring	Yes	Yes	
CW	ETS 300 056 [16]	Call Waiting	Yes	Yes	
CCBS	EN 300 357 [17]	Completion of Calls to Busy Subscriber	Yes	Yes	
CCNR	EN 301 065-1 [18]	Completion of Calls on No Reply	Yes	Yes	
MCID	ETS 300 128 [19]	Malicious Call Identification	Yes	Yes	
FPH	ETS 300 208 [20]	Freephone	Yes	Yes	
CFU	ETS 300 200 [21]	Call Forwarding Unconditional	Yes	Yes	
CFB	EN 300 199 [22]	Call Forwarding Busy	Yes	Yes	
CFNR	EN 300 201 [23]	Call Forwarding No Reply	Yes	Yes	
CD	ETS 300 202 [24]	Call Deflection	Yes	Yes	
SCF	EN 301 133 [25]	Selective Call Forwarding	Yes	Yes	
UUS	ETS 300 284 [26]	User-to-User Signalling	Yes	Yes	
MWI	EN 300 650 [27]	Message Waiting Indication	Yes	Yes	
LH	EN 301 479 [28]	Line Hunting	Yes	Yes	
Hold	ETS 300 139 [29]	Call Hold	Yes	Yes	
3PTY	ETS 300 186 [30]	Three-Party	Yes	Yes	
ECT	EN 300 367 [31]	Explicit Call Transfer	Yes	Yes	
CONF	ETS 300 183 [32]	Conference call, add-on	Yes	Yes	
MMC	ETS 300 164 [33]	Meet-Me Conference	Yes	Yes	
CLIP	EN 300 089 [34]	Calling Line Identification Presentation	Yes	Yes	
CLIR	EN 300 090 [35]	Calling Line Identification Restriction	Yes	Yes	
COLP	EN 300 094 [36]	Connected Line Identification Presentation	Yes	Yes	
COLR	ETS 300 095 [37]	Connected Line Identification Restriction	Yes	Yes	
UAN	ETS 300 710 [38]	Universal Access Number	Yes	Yes	
PMBS	ETS 300 048 [39]	ISDN Packet Mode Bearer Services	Yes	Yes	
VC	ETS 300 048 [39]	ISDN Virtual Call	Yes	Yes	
PVC	ETS 300 048 [39]	Permanent Virtual Circuit	Yes	Yes	
VCC	ETS 300 711 [40]	Virtual Card Calling	Yes	Yes	
VOT	ETS 300 713 [41]	Televoting	Yes	Yes	
TP	ETS 300 053 [42]	Terminal Portability	Yes	No	

Annex A (normative):
Text of ITAAB Advisory Note Numbers 102 and 126

This annex contains the full text of ITAAB Advisory Note numbers 102 [45] and 126 [45]. This text has been reproduced without change.

A.1   Text of ITAAB Advisory Note Number: 102

ITAAB ADVISORY NOTE

TRAC ISDN Type Approval Advisory Board

ITAAB Advisory Note Number: 102

Date: 2002-11-05

Subject: Power consumption of Terminal Equipments

APPLICABILITY

This note is specifically applicable for approval according to:

☒   **CTR 3 Amendment 1 (Commission Decision 98/515/EC)**

☒   **CTR 33 (Commission Decision 98/521/EC)**

For the purposes of the above described applicability, this note specifically contains amendments to:

TBR 3, Amendment A1, December 1997: Attachment requirements for terminal equipment to connect to an ISDN using ISDN basic access.

In consideration of the following:

-       A PS1 power consumption more than 1 W is not allowed for each individual TE (see TBR 3 clause 9.5.3.1 table 9.10). Terminals may contain a functionality that requires more than 1 W (e.g. telephone set with answering machine).

-       In a Point to Multipoint configuration up to 8 TEs are allowed. But it is observed that very often NTs in current installations offer 4 W to 5 W only.

-       Under normal conditions the electrical energy for PS1 is taken from the electrical home installation of the user. Only under restricted power conditions the electrical energy is taken from the network.

-       The power management of the Basic Access has to be made by the user.

ITAAB advises the following:

The power consumption conditions of a terminal are described by using a new PIXIT-parameter "Terminal Equipment Equivalence Factor, TEEF"

The supplier of a terminal has to declare the Terminal Equipment Equivalence.

The Terminal Equipment Equivalence Factor TEEF is computed by the following rule:
-       When the Terminal Equipment Equivalence equals 1 or 2 the factor TEEF is set to 2. For equivalents of 3 up to 8 TEEF equals the equivalence. If no declaration is made by the supplier TEEF will be set to 2 (i.e. no change to TBR 3, A1).

The maximum PS1 power under normal power condition is calculated by the formula:
-       $PS1max = TEEF * 1\ W / 2$

The supplier has to prepare a user information on power consumption (e.g. in the manual) if the PS1 power consumption in the normal mode is greater than 1 W (i.e. TEEF > 2).

The restricted power conditions remain as they are defined in the amended TBR 3.

The following tests are affected by this change:

Test	Title	Comment
B.5.1.1	Normal power provision (Test A)	max. allowed power changed according to new table 9.10
B.5.1.2	Normal power provision (Test B)	max. allowed power changed according to new table 9.10
B.5.1.3	Normal power provision (Test C)	max. allowed power changed according to new table 9.10
B.5.4.1	Current/time limitation for TE	current variation with time changed according to new table 9.11 and new figures 9.11 and 9.12
B.5.4.7	DC unbalance of TEs using power sink 1	no change, but now the measurement equipment has to provide about 5.2 W (40 V, about 130 mA)
B.5.4.8	Effect of current unbalance	no change, but now the measurement equipment has to provide about 5.2 W (40 V, about 130 mA)

The corresponding changes in TBR 3, as amended by Amendment A1, are:

Table 9.10 in clause 9.5.3.2.1 shall be modified as follows:

**Table 9.10: PS1 consumption limits**

TE type and state	Maximum consumption	
Normal conditions		
TE drawing power from PS1 Active state	TEEF * 1 W / 2	(TEEF= 2, 3, 4 to 8)
TE drawing power from PS1 Deactivated state	TEEF * 100 mW / 2	(TEEF= 2, 3, 4 to 8)
TE drawing power from PS1 Local action state	TEEF * 1 W / 2	(TEEF= 2, 3, 4 to 8)
Locally powered TE Any state	3 mW	
Restricted conditions		
TE drawing power from PS1 Designated TE: Active state	380 mW	
TE drawing power from PS1 Designated TE: Deactivated state	25 mW	
TE drawing power from PS1 Not designated	3 mW	
TE drawing power from PS1 Designated TE: Local action state	380 mW	
Locally powered TE Any state	3 mW	
NOTE 1 All power limits apply to power integrated over a period of 50 ms. NOTE 2 The supplier of a terminal has to declare TEEF (Terminal Equipment Equivalence Factor). If the equivalence is one or two the factor TEEF is set to two. If no declaration is made by the supplier TEEF will be set to two.		

Table 9.11 in clause 9.5.5.1.1 shall be modified as follows:

Table 9.11: Parameters for the normal condition

| A	5 µs	Y	30 mA + 25 mA * TEEF / 2. (TEEF= 2, 3, 4 to 8)
C	100 ms	X	Current equivalent to TEEF * 1 W / 2 , never exceeding 15 mA + 40 mA * TEEF / 2 independent of the input voltage. (TEEF= 2, 3, 4 to 8)
NOTE	The supplier of a terminal has to declare TEEF (Terminal Equipment Equivalence Factor). If the equivalence is one or two the factor TEEF is set to two. If no declaration is made by the supplier TEEF will be set to two.		

Figure 9.11 in clause 9.5.5.1.4 shall be replaced with the following:
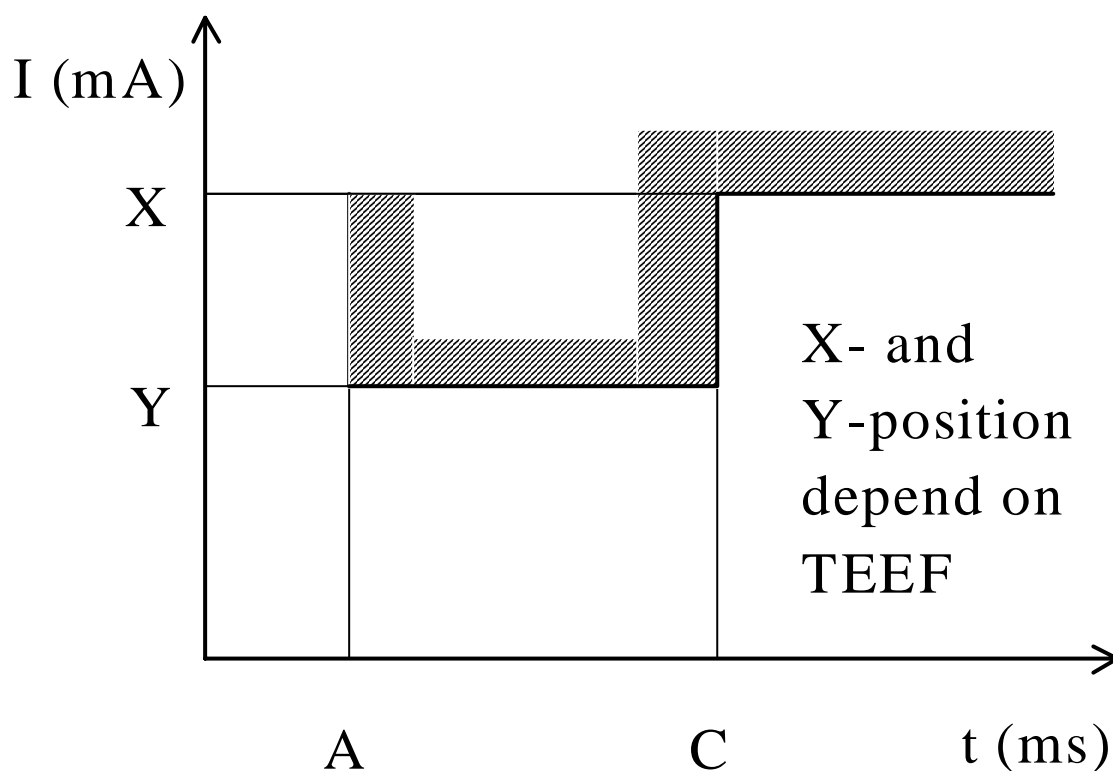
Figure 9.11: Current/time limitation for TEs

Figure 9.12 in clause 9.5.5.1.4 shall be replaced with the following:
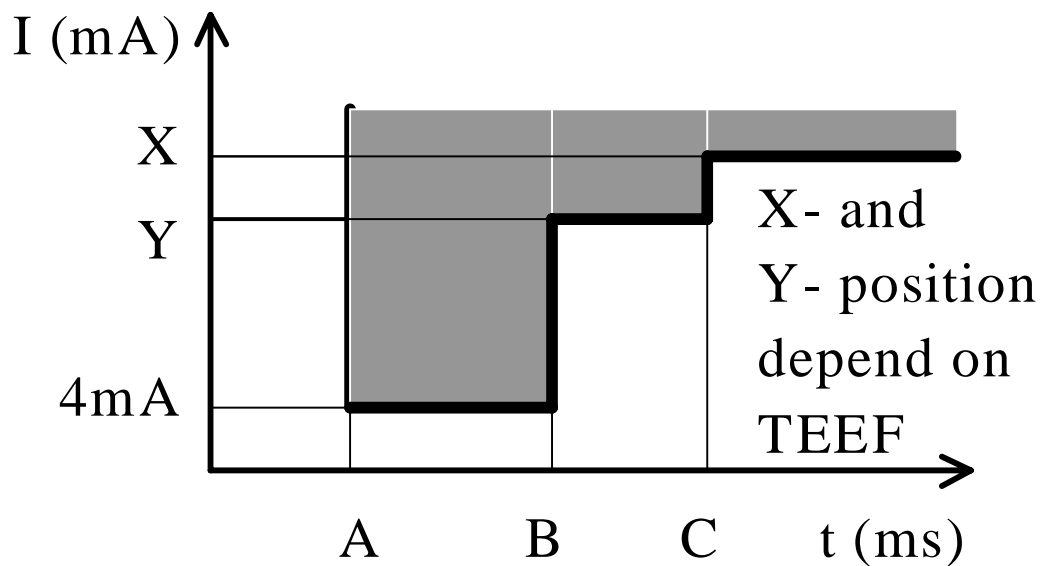
A = 5µs
5µs <= B <= 900ms
C = B + 100ms
X, Y: see tables 9.11 and 9.12 of this TBR

Figure 9.12: Alternative current/time limitation for TEs

The last paragraph of the requirement in clause 9.5.5.2.3 shall be modified as follows:

A designated and activated TE being in restricted mode and detecting transition to normal mode shall not change its power consumption limit (380 mW) to TEEF * 1W / 2 before 500ms after detection of the reversed polarity. (TEEF= 2, 3, 4 to 8)

NOTE   The supplier of a terminal has to declare TEEF (Terminal Equipment Equivalence Factor). If the equivalence is one or two the factor TEEF is set to two. If no declaration is made by the supplier TEEF will be set to two.

The following changes shall be performed to Annex B of TBR 3, as amended by Amendment A1:

The result part of the test described in clause B.5.1.1 shall be modified as follows:

Results: The power drawn (V*I) shall not exceed TEEF * 1W / 2 (TEEF= 2, 3, 4 to 8) at both extremes of the power source voltage in the stimulus section.

NOTE The supplier of a terminal has to declare TEEF (Terminal Equipment Equivalence Factor). If the equivalence is one or two the factor TEEF is set to two. If no declaration is made by the supplier TEEF will be set to two.

The result part of the test described in clause B.5.1.2 shall be modified as follows:

Results: The power drawn (V*I) shall not exceed TEEF * 100 mW / 2 (TEEF= 2, 3, 4 to 8) at both extremes of the power source voltage in the stimulus section.

NOTE The supplier of a terminal has to declare TEEF (Terminal Equipment Equivalence Factor). If the equivalence is one or two the factor TEEF is set to two. If no declaration is made by the supplier TEEF will be set to two.

The result part of the test described in clause B.5.1.3 shall be modified as follows:

Results: The power drawn (V*I) shall not exceed TEEF * 1 W / 2 (TEEF= 2, 3, 4 to 8) at both extremes of the power source voltage in the stimulus section.

NOTE The supplier of a terminal has to declare the Terminal Equipment Equivalence. The factor TEEF (Terminal Equipment Equivalence Factor) is set to 2 if the equivalence is 1 or 2. TEEF will be set to 2 if no declaration is made by the supplier.

The following changes shall be performed in Annex E of TBR 3, as amended by Amendment A1:

Table E.3 in clause E.7 shall be modified as follows:

Table E.3, Implemented values

Item	Reference	Description	Value
...	...	...	...
E.3.7	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).	
E.3.8	9.4.2.3	State the value of timer T_F1, which represents the time needed to reach F1 after switch off PS1 or LP (s).	
E.3.9		State the value of timer TWAIT, which represents the time needed to perform an action on the IUT (s).	
E3.10	9.5.3.2.1 9.5.5.1.1 9.5.5.2.3	TEEF (Terminal Equipment Equivalence Factor = 2, 3, 4 to 8). If the equivalence is one or two the factor TEEF is set to 2. If no declaration is made by the supplier TEEF will be set to 2. (Note)	
Note: The supplier has to prepare a user information on power consumption (e.g. in the manual) if the PS1 power consumption in the normal mode is greater than 1 W (i.e. TEEF > 2).			

NOTE: The addition of T_F1 and TWAIT, as described in Advisory Note 088 rev. 1 and Advisory Note 094, have been included in this table.

A.2   Text of ITAAB Advisory Note Number: 126

ITAAB ADVISORY NOTE

TRAC ISDN Type Approval Advisory Board

ITAAB Advisory Note Number: 126

Date: 2002-11-05

Subject: Power consumption of locally powered TE which draw power from the basic rate interface

APPLICABILITY

This note is specifically applicable for approval according to:

X   **CTR 3 Amendment 1 (Commission Decision 98/515/EC)**

X   **CTR 33 (Commission Decision 98/521/EC)**

For the purposes of the above described applicability, this note specifically contains amendments to:

TBR 3, Amendment A1, December 1997: Attachment requirements for terminal equipment to connect to an ISDN using ISDN basic access.

TBR 33, December 1997: Attachment requirements for packet mode terminal equipment to connect to an ISDN using ISDN basic access.

In consideration of the following:

- TBR 3/A1 and TBR 33 both allow a power consumption of max. 3mW for locally powered TEs.

- There are TEs which are locally powered but consume more than 3mW from the line (i.e. when using a connection detector).

- Most public NTs in current installations offer 4W to 5W in normal mode.

- In restricted mode a public NT offers 420mW.

- A designated TE may consume 380mW in restricted mode.

ITAAB advises the following:

For a locally powered TE a power consumption of more than 3mW shall be allowed under the following prerequisites :

- The manufacturer has to declare the power consumption in the manual of the TE.

- The power drawn from the line shall be independent from the state of the TE and the voltage of the NT.

- The TE may consume up to 380mW. The maximum number of TEs which are powered by the line has to be reduced by one. No designated TE may be connected at the bus.

The TE shall be tested as follows :

- In the PICS/PIXIT parameter list LP, PS and DES shall be set to TRUE. A note shall be added and the maximum power consumption of the TE shall be declared.

- Electrical tests and functional tests (B.2, B.3, B.4) shall be selected according to ITAAB Advisory Note 060 with LP set to TRUE and PS and DES set to FALSE. The test laboratory shall make sure that the test equipment offers the power needed by the TE.

- For power consumption (B.5.1, B.5.2) the tests according to ITAAB Advisory Note 060 with LP set to TRUE shall be selected. The limit shall be changed to 380mW.

- All other power feeding tests shall be selected according to ITAAB Advisory Note 060 with LP set to FALSE and PS and DES set to TRUE.
  In test B.5.4.1 table 9.12 shall be used for both normal and restricted mode.

Annex B (informative):
Bibliography

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

- ETSI ETS 300 403-1 (Edition 1): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification [ITU-T Recommendation Q.931 (1993), modified]".

History

Document history		
V1.1.1	November 2002	Membership Approval Procedure MV 20030103: 2002-11-05 to 2003-01-03