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Integrated Services Digital Network (ISDN); Technical characteristics of telephony terminals; Part 4: Additional Equipment Interface (AEI)

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Part 4: Additional Equipment Interface (AEI)**

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Foreword

Part 4 of this Interim European Telecommunication Standard (I-ETS) was produced by the Terminal Equipment (TE) Technical Committee of the European Telecommunications Standards Institute (ETSI).

An ETSI standard may be given I-ETS status either because it is regarded as a provisional solution ahead of a more advanced standard, or because it is immature and requires a "trial period". The life of an I-ETS is limited to three years after which it can be converted into a European Telecommunication Standard (ETS), have its life extended for a further two years, be replaced by a new version or, be withdrawn.

This is the fourth Part of an I-ETS which is currently intended to comprise eight Parts.

This I-ETS specifies technical characteristics for Integrated Services Digital Network (ISDN) telephony terminals as described in the scope of this I-ETS. The characteristics are additional to type approval requirements to which the terminal equipment is subject. The additional characteristics are meant to give improved performance.

In the present version of the I-ETS the following Parts are included:

Part 1: General (I-ETS 300 245-1);

Part 2: PCM A-Law, Handset Terminals;

Part 3: PCM A-Law, Loudspeaking and Handsfree Telephony;

Part 4: Additional Equipment Interface;

Part 5: Wideband Coding Handset Functions;

Part 6: Wideband Coding Loudspeaking and Handsfree Telephony;

Part 7: Locally Generated Information Tones;

Part 8: Terminal Application of 16 kbit/s Speech Coding Algorithms.

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1 Scope

This Interim European Telecommunication Standard (I-ETS) specifies the technical characteristics (physical, electrical, logical and functional) of a family of interfaces for the connection of additional equipment to ISDN telephony terminals. These interfaces support the facilities and services applicable mainly to ISDN telephony teleservices associated with those functions.

Two interfaces allow bi-directional transparent analogue transmission of B-channel information between the telephony terminal and the additional equipment with a bandwidth of 3,1 kHz or 7 kHz. Both a "2-wire" (Z_A -I) and a "4-wire" interface (X-I) are described.

Two other interfaces allow the transmission of D-channel related information between the telephony terminal and the additional equipment. One (Y-I) uses a "4-wire" bi-directional data line with an asynchronous digital transmission. This interface can be implemented separately or in combination with any of the two interfaces for B-channel information. The second one (ZB-I) transmits ON/OFF signalling data in both directions. This interface can be implemented separately or in combination with the "2-wire" interface.

The digital telephony terminal may support one or a combination of the following interfaces as an option:

- "4-wire" analogue interface (3 wires, including common ground);
- "4-wire" digital signalling interface (3 wires, including common ground);
- "2-wire" analogue interface;
- ON/OFF signalling interface (3 wires, including common ground).

Annex A to this I-ETS specifies the methods of testing required to identify conformance to this I-ETS.

This fourth Part of I-ETS 300 245 is applicable as one option to telephony terminals as specified in other Parts of this I-ETS, and additional equipment intended to be connected to these terminals.

NOTE: The specification of the "2-wire" interface is presently based on the requirements which can be satisfied by many analogue terminals connected through a very short line directly or via an adapter (Videotext terminals, PC modem, etc.). Appropriate alternatives could be the requirements resulting from the on-going harmonisation activities aiming enhancement of I-ETS 300 004 [2] or ETS 300 001 [1] (related respectively to the Private Branch eXchange (PBX) or Public Network analogue interface).

2 Normative references

This fourth Part of the I-ETS incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this fourth Part of the I-ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] ETS 300 001: "Attachments to Public Switched Telephone Network (PSTN); General technical requirements for equipment connected to an analogue subscriber interface in the PSTN (Candidate NET 4)".
- [2] I-ETS 300 004 (1991): "Business Telecommunications (BT); Transmission characteristics at 2-wire analogue interfaces of a digital Private Automatic Branch Exchange (PABX)".
- [3] ETS 300 047, Parts 1-3 (1992): "Integrated Services Digital Network (ISDN); Basic access; Safety and Protection".
- [4] ETS 300 085 (1990): "Integrated Services Digital Network (ISDN) - 3,1 kHz telephony teleservice - Attachment requirements for handset terminals".
- [5] ETS 300 102-1 (1990): "Integrated Services Digital Network (ISDN) - User-network interface layer 3 - Specifications for basic call control".

- [6] ETS 300 102-2 (1990): "Integrated Services Digital Network (ISDN) - User-network interface layer 3 - Specifications for basic call control - Specification Description Language (SDL) diagrams".
- [7] I-ETS 300 245: "Integrated Services Digital Network (ISDN) - Technical characteristics of telephony terminals - Parts 1, 2, 3, 5, 6".
- [8] I-ETS 300 281 (1994): "Integrated Services Digital Network (ISDN) - Telephony 7 kHz teleservice - Terminal requirements necessary for end-to-end compatibility".
- [9] CCITT Recommendation G.122 (1988): "Influence of national systems on stability - talker echo and listener echo in international connections".
- [10] CCITT Recommendation G.223 (1988): "Assumptions for the calculation of noise on hypothetical reference circuits for telephony".
- [11] CCITT Recommendation G.711 (1988): "Pulse code modulation (PCM) of voice frequencies".
- [12] ITU-T Recommendation G.712 (1992): "Transmission performance characteristics of pulse code modulation channels".
- [13] CCITT Recommendation G.722 (1988): "7 kHz audio-coding within 64 kbit/s".
- [14] CCITT Recommendation 0.41 (1988): "Psophometer for use on telephone-type circuits".
- [15] FCC 68.500 (1988): "Code of federal regulations/telecommunication 47 - parts 40 to 69".
- [16] ISO Publication 3 (1973): "Preferred numbers - series of preferred numbers".
- [17] ETS 300 082 (1992): "Integrated Services Digital Network (ISDN) - 3,1 kHz telephony teleservice - End-to-end compatibility".

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3 Definitions and abbreviations

3.1 Definitions

For the purposes of this Part of the I-ETS, the relevant definitions used in the referenced CCITT Recommendations and ETSS, and the following definitions apply:

Additional Equipment (AE): Equipment to be connected at the ISDN telephony terminal to support additional functions.

Additional Equipment Interface (AEI): Interface to connect an additional equipment.

dBr: Relative level to the 0 dBr point basic user-network interface according to CCITT Recommendation G.101.

X-Interface (X-I): Analogue interface which provides bi-directional transmission of B-channel related information between a telephony terminal and an additional equipment.

XTE-Interface: X-interface on the Terminal Equipment side.

XAE-Interface: X-interface on the Additional Equipment side.

Y-Interface (Y-I): Digital interface which provides bi-directional transmission of signalling messages between a telephony terminal and an additional equipment.

YTE-Interface: Y-interface on the Terminal Equipment side.

YAE-Interface: Y-interface on the Additional Equipment side.

Z_A-Interface (Z_A-I): Analogue interface which provides bi-directional transmission over the access channel.

Z_B-Interface (Z_B-I): Interface to transmit signalling information.

3.2 Abbreviations

For the purposes of this Part of the I-ETS, the abbreviations used in the referenced CCITT Recommendations, ETSS and the following abbreviations apply:

AE	Additional Equipment
AEI	Additional Equipment Interface
ET	Exchange Termination
ETS	European Telecommunication Standard
I-ETS	Interim European Telecommunication Standard
ISDN	Integrated Services Digital Network
PBX	Private Branch eXchange
S/T	ISDN-Basic User Network Interface
TE	Terminal Equipment
X-I	X-Interface
Y-I	Y-Interface
Z _A -I	Z _A -Interface
Z _B -I	Z _B -Interface