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Integrated Services Digital Network (ISDN); Technical characteristics of telephony terminals; Part 1: General

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ICS:

33.080	Digitalno omrežje z integriranimi storitvami (ISDN)	Integrated Services Digital Network (ISDN)
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Foreword

This second edition of Part 1 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it can be converted into an ETS, have its life extended for a further two years, be replaced by a new version, or be withdrawn.

This second edition of Part 1 of this I-ETS is the first Part of an I-ETS comprising eight Parts.

Part 1: General.

Part 2: PCM A-law, handset telephony.

Part 3: PCM A-law, loudspeaking and hands free telephony.

Part 4: Interface for additional equipment.

Part 5: Wideband (7 kHz) handset telephony.

Part 6: Wideband (7 kHz), loudspeaking and hands free telephony.

Part 7: Locally generated information tones.

Part 8: Speech transmission characteristics when using Low-Delay Code-Excited Linear Prediction (LD-CELP) coding at 16 kbit/s.

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1 Scope

This second edition of Part 1 of this Interim European Telecommunication Standard (I-ETS) specifies the technical characteristics (electrical, logical and acoustic) for telephony terminals to be used at the basic access of the coincident S and T reference point of the Integrated Services Digital Network (ISDN). The characteristics of this I-ETS are additional to any other Standard or attachment requirements to which the Terminal Equipment (TE) is subject (note 1). The additional characteristics of this I-ETS are meant to give improved performance relative to the attachment requirements. However, this I-ETS is not intended to be used for type approval purposes or other mandatory requirements.

This I-ETS is applicable to telephony terminals as well as to telephony functions of multimedia or multiservice terminals.

This I-ETS is applicable to TE of the functional group defined as Terminal Equipment Type 1 (TE1) in CCITT Recommendation I.411 [1].

The characteristics specified in this I-ETS cover a number of functions or facilities which can be combined to form a particular terminal. The characteristics relevant for each speech coding algorithm, function or facility can be found in separate Parts of the I-ETS. This Part (Part 1) covers the introduction to the I-ETS and the characteristics which are common to telephony terminals to be connected to a coincident S and T reference point to a public telecommunication network presented as an ISDN basic access point.

For multimedia or multiservice terminals other requirements or standards may apply instead of, or in addition to, this I-ETS.

TE specially designed for the disabled (e.g. with amplification of received speech as an aid for the hard-of-hearing), may have characteristics which may be specified in separate Parts of this I-ETS.

TE using a radio link (e.g. cordless telephones) will, due to the characteristics of the radio channel, be specified separately.

NOTE 1: Attachment requirements for ISDN telephony terminals can be found in TBR 3 and TBR 8.

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NOTE 2: In some countries, an interim ISDN service corresponding to, but not wholly compatible with, the ISDN basic access standards may be provided. For connection to such a service, this I-ETS is not applicable.

2 Normative references

This 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 I-ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referenced to applies.

- [1] CCITT Recommendation I.411 (1988): "Integrated Services Digital Network (ISDN) user-network interfaces - Reference configurations".
- [2] CCITT Recommendation P.10 (1988): "Vocabulary of terms on telephone transmission quality and telephone sets".
- [3] CCITT Recommendation G.701 (1988): "Vocabulary of digital transmission and multiplexing, and pulse code modulation (PCM) terms".
- [4] CCITT Recommendation I.430 (1988): "Integrated Services Digital Network (ISDN) user-network interfaces - layer 1 recommendations".
- [5] ETS 300 102-1 (1990 including Amendment 1 (1993)): "Integrated Services Digital Network (ISDN); User-network interface layer 3, Specification for basic call control".

- [6] ETS 300 104 (1991): "Integrated Services Digital Network (ISDN); Attachment requirements for terminal equipment to connect to an ISDN using ISDN basic access, Layer 3 aspects".
- [7] ETS 300 267-1 (1994): "Integrated Services Digital Network (ISDN); Telephony 7 kHz and videotelephony teleservices; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [8] I-ETS 300 322 (1995): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System no one (DSS1); Abstract Test Suite (ATS) specification for signalling network layer protocol for circuit mode basic call control".
- [9] CCITT Recommendation G.711 (1988): "Pulse code modulation (PCM) of voice frequencies".
- [10] CCITT Recommendation G.722 (1988): "7 kHz audio-coding within 64 kbit/s".
- [11] CCITT Recommendation E.164 (1991): "Numbering plan for the ISDN era".
- [12] CCITT Recommendation G.101 (1988): "The transmission plan".
- [13] TBR 3: "Integrated Services Digital Network (ISDN); Attachment requirements for terminal equipment to connect to an ISDN using ISDN basic access".
- [14] IEC Publication 651: "Sound level meters".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this I-ETS, the relevant definitions given in CCITT Recommendations P.10 [2] and G.701 [3] apply along with the following:

designated terminal: Refers to the terminal which is permitted to draw power from Power Source 1 under restricted power conditions as specified in CCITT Recommendation I.430 [4].

digital interface: The B-channels available at the coincident S and T reference point at an ISDN basic access.

handsfree telephony terminal: A telephony terminal using a loudspeaker associated with an amplifier as a telephone receiver and which can be used without a handset [based on CCITT Recommendation P.10 [2]].

loudspeaking telephony terminal: A handset telephony terminal using a loudspeaker associated with an amplifier as a telephone receiver [based on CCITT Recommendation P.10 [2]].

multimedia terminal: A terminal which simultaneously supports two or more media (e.g. audio, video, text, data).

multiservice terminal: A terminal which supports more than one service (bearer service or teleservice).

restricted power condition: Is described in CCITT Recommendation I.430 [4]. The condition is indicated by the reversed polarity of the phantom voltage at the coincident S and T reference point.

NOTE: For some networks restricted power condition is the normal operating mode.

telephony terminal: A terminal which supports telephony 3,1 kHz teleservice and/or telephony 7 kHz teleservice.

telephony 3,1 kHz teleservice: A teleservice providing speech transmission at an audio bandwidth of 3,1 kHz. The communication is bi-directional, with both directions active during the speech phase. User information is provided over a B-channel, signalling is provided over the D-channel [based on ETS 300 111, clause 5].

telephony 7 kHz teleservice: A real-time teleservice in which speech (7 kHz or 3,1 kHz bandwidth) can be interchanged using one circuit-mode 64 kbit/s connection [based on ETS 300 267-1 [7]]

3,1 kHz terminal: A terminal which supports telephony 3,1 kHz teleservice.

7 kHz terminal: A terminal which supports telephony 7 kHz teleservice.

3.2 Abbreviations

For the purposes of this I-ETS, the following abbreviations, plus the relevant abbreviations in CCITT Recommendations P.10 [2] and G.701 [3], apply:

BC	Bearer Capability
DTMF	Dual Tone Multi Frequency (the same as MFPB - Multi Frequency Push Button)
HLC	High Layer Compatibility
ISDN	Integrated Services Digital Network
LLC	Low Layer Compatibility
MSN	Multiple Subscriber Number
SUB	Subaddressing
UDI	Unrestricted Digital Information
UDI-TA	Unrestricted Digital Information with Tones and Announcements (previously called 7 kHz audio in ETS 300 102-1 [5])

4 Access channel selection

Access through any B-channel shall be possible. Channel allocation shall be in accordance with ETS 300 102-1 [5].

The functional characteristics of the terminal shall be independent of the B-channel selected.

Compliance shall be tested in accordance with ETS 300 104 [6] by random choice of the B-channel.

5 Call control functions

Call control functions for telephony services (telephony 3,1 kHz teleservice and telephony 7 kHz teleservice) specified here are based upon ETS 300 102-1 [5] and, where applicable, on ETS 300 267-1 [7] Call control functions for other telephony functions or services are specified below or in other parts of this I-ETS.

5.1 Outgoing calls

The complete procedures for both en-bloc and overlap sending according to ETS 300 102-1 [5] shall be implemented.

5.1.1 Coding of Bearer capability information element

Compliance to the requirements specified in subclause 5.1.1 shall be checked using the tests specified in I-ETS 300 322 [8].