SLOVENSKI STANDARD
SIST I-ETS 300 245-3 E1:2003

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Digitalno omreģje z integriranimi storitvami (ISDN) ï Tehniļne karakteristike telefonskih terminalov ï 3. del: Telefonija z zvoļniģkimi in prostoroļnimi terminali z uporabo impulzno-kodne modulacije (PCM) s pretvorbo govora po pravilu A-law

Integrated Services Digital Network (ISDN); Technical characteristics of telephony terminals; Part 3: Pulse Code Modulation (PCM) A-law, loudspeaking and handsfree telephony

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New presentation - see History box

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Foreword

Part three 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it can be converted into an ETS, have its life extended for a further two years, be replaced by a new version or, be withdrawn.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 is the third Part of an I-ETS which is currently intended to comprise eight Parts:

Part 1: "General (I-ETS 300 245-1 [1])".

Part 2: "PCM A-Law, handset telephony (I-ETS 300 245-2 [2])".

Part 3: "Pulse Code Modulation (PCM) A-Law, Loudspeaking and handsfree telephony".

Part 4: Interface for additional equipment.

Part 5: Wideband (7 kHz) telephony.

Part 6: Wideband (7 kHz) handsfree telephony.

Part 7: Locally generated information tones.

Part 8: Terminal application of 16 kbit/s speech coding algorithms (T/TE 10-07H).

Proposed announcement date	
Date of latest announcement of this I-ETS (doa):	31 May 1995

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1 Scope

Part 3 of this I-ETS specifies technical characteristics for Pulse Code Modulation (PCM) A-law, 3,1 kHz loudspeaking and handsfree telephony terminals to be used at the basic access for the coincident S and T reference point of the Integrated Services Digital Network (ISDN).

Such terminals are intended to be used by a single person.

This Part of I-ETS 300 245 applies in conjunction with I-ETS 300 245-1 [1] and the characteristics specified in this Part are additional to those of I-ETS 300 245-1 [1].

2 Normative references

Part 3 of 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 Part 3 of this I-ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to apply.

[1] I-ETS 300 245-1: "Integrated Services Digital Network (ISDN); Technical characteristics of telephony terminals, Part 1: General".

[2] I-ETS 300 245-2: "Integrated Services Digital Network (ISDN); Technical characteristics of telephony terminals, Part 2: PCM A-law handset telephony".

[3] ITU-T Recommendation P.10 (1993): "Vocabulary of terms on telephone transmission quality and telephone sets".

[4] CCITT Recommendation G.701 (1988): "Vocabulary of digital transmission and multiplexing, and pulse code modulation (PCM) terms".

[5] ETS 300 111 (1992): "Integrated Services Digital Networks (ISDN); Telephony 3,1 kHz teleservice, Service description".

[6] CCITT Recommendation G.122 (1988): "Influence of national systems on stability, talker echo, and listener echo in international connections".

[7] ITU-T Recommendation P.51 (1993): "Artificial mouth".

[8] CCITT Recommendation G.711 (1988): "Pulse code modulation (PCM) of voice frequencies".

[9] ITU-T Recommendation P.34 (1993): "Transmission characteristics of hands-free telephones".

[10] CCITT Recommendation O.131 (1988): "Quantizing distortion measuring equipment using a pseudo-random noise test signal".

[11] ISO 266 (1975): "Acoustics - Preferred frequencies for measurements".

[12] ITU-T Recommendation P.79 (1993): "Calculation of loudness ratings for telephone sets".

[13] CCITT Recommendation G.223 (1988): "Assumptions for the calculation of noise on hypothetical reference circuits for telephony".

[14] CCITT Recommendation O.41 (1988): "Psophometer for use on telephone-type circuits".

[15] IEC 651 (1979): "Sound level meters".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this Part of the I-ETS, the relevant definitions given in ITU-T Recommendations P.10 [3] and G.701 [4] apply along with the following:

Acoustic Reference Level (ARL): The acoustic level which gives - 10 dBm0 at the digital interface.

telephony 3,1 kHz teleservice: A description of telephony 3,1 kHz teleservice is given in ETS 300 111 [5], clause 5.

loudspeaking function: The handset is used in the normal position. The incoming signal is simultaneously presented to the user(s) from loudspeaker(s).

hands-free function: For free handling no handset or any other equipment with transducers is held to the ear of the user. If a handset is implemented then it is placed at a distance from the user. Normally, the handset is not active. The numbers, the implementation and the use of microphone(s) and loudspeaker(s) are not limited.

Call Progress Monitoring (CPM): The loudspeaker is used to monitor the received signals while the voice transmission in the sending direction is disconnected.

Terminal Coupling Loss (TCL): The frequency dependent coupling loss between the receiving port and sending port of a terminal due to:

- acoustical coupling at the user interface;
- electrical coupling due to crosstalk in the handset cord or within the electrical circuits;
- seismic coupling through the mechanical parts of the terminal.

NOTE 1: The receiving port and the sending port of a digital voice terminal is a 0 dBr point.

NOTE 2: The coupling at the user interface depends on the conditions of use.

weighted Terminal Coupling Loss (TCLw): The Terminal Coupling Loss (TCL) calculated using the weighting of CCITT Recommendation G.122 [6].

Hands-Free Reference Point (HFRP): A point located on the axis of the artificial mouth, at 50 cm from the lip ring, where the level calibration is made, in free field. It corresponds to the measurement point n° 11, as defined in ITU-T Recommendation P.51 [7].

idle mode: Idle mode is when the terminal is not activated by an input signal (e.g. input signal level below implemented threshold level).

active mode: Active mode is when the terminal is activated by an input signal (e.g. input signal level above implemented threshold level).

single talk: An operation mode where only one user is speaking.

double talk: An operation mode where two users are speaking simultaneously.

3.2 Abbreviations

For the purposes of this Part of the I-ETS, the following abbreviations apply:

AEC	Acoustic Echo Controller
AGC	Automatic Gain Control
Ardt	Received speech attenuation during double talk
ARL	Acoustic Reference Level
Asdt	Sent speech attenuation during double talk
CPM	Call Progress Monitoring
CSS	Composite Source Signal
ETS	European Telecommunication Standard
ETSI	European Telecommunications Standards Institute
I-ETS	Interim European Telecommunication Standard
ISDN	Integrated Services Digital Network
FFT	Fast Fourier Transformation
HATS	Head And Torso Simulator
HFRP	Hands-Free Reference Point
HFT	Hands-Free Telephony Terminal
LRGP	Loudness Rating Guard-ring Position
LST	Loudspeaking Telephony Terminal
MRP	Mouth Reference Point
PCM	Pulse Code Modulation
PN	Pseudo Noise
RLR	Receiving Loudness Rating
SLR	Sending Loudness Rating
TCL	Terminal Coupling Loss
TCLw	Weighted Terminal Coupling Loss
TCLwdt	Weighted Terminal Coupling Loss - double talk
TCLwst	Weighted Terminal Coupling Loss - single talk
Tondt	Break in time - double talk
Tonst	Break in time - single talk
TR	Built up time
TS	Switching time

4 Call control functions

The requirements of I-ETS 300 245-1 [1] shall be met.

5 Transmission aspects

5.1 General

Requirements for PCM A-law terminals are given in this Part of the I-ETS.

When using other coding algorithms other Parts of this I-ETS may apply.

5.1.1 Encoding

The default speech encoding algorithm for all speech terminals shall be the A-law encoding at 64 kbit/s, as defined in CCITT Recommendation G.711 [8].

Any other possible encoding algorithm are additional. For some encoding algorithms, requirements are given in other Parts of this I-ETS.

5.1.2 Relative level

The digital interface is a 0 dBr point according to CCITT Recommendation G.101.