SLOVENSKI STANDARD
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Digitalno omreģje z integriranimi storitvami (ISDN) ï Zvokovne lastnosti priključ kov, zasnovanih za podporo konferenč nim storitvam v omreģjih ISDN

Integrated Services Digital Network (ISDN); Audio characteristics of terminals designed to support conference services in the ISDN

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ICS:

33.080	Digitalno omrežje z integriranimi storitvami (ISDN)	Integrated Services Digital Network (ISDN)
35.180	Terminalska in druga periferna oprema IT	IT Terminal and other peripheral equipment

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Terminal Equipment (TE) Technical Committee and later the Multimedia Terminals and Applications (MTA) Project of the European Telecommunications Standards Institute (ETSI).

Transposition dates	
Date of adoption:	24 October 1997
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1 Scope

This European Telecommunication Standard (ETS) specifies the audio characteristics of terminals designed to support the audiographic conference teleservice as specified in ETS 300 675 [1]. The same audio requirements of this ETS are also applicable to terminals supporting the Integrated Services Digital Network (ISDN) videoconference teleservice.

This ETS does not specify the terminal procedures, both with respect to in-band signalling and to ISDN signalling on the D channel. Also the procedures and protocols for data exchange and conference control are outside the scope of this ETS.

2 Normative References

This ETS incorporates by dated and 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 ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] ETS 300 675: "Integrated Services Digital Network (ISDN); Audiographic conference teleservice; Service description".

[2] I-ETS 300 245-2 (1996): "Integrated Services Digital Network (ISDN); Technical Characteristics of Telephony Terminals, Part 2: PCM A-law, handset telephony".

[3] I-ETS 300 245-3 (1995): "Integrated Services Digital Network (ISDN); Technical Characteristics of Telephony Terminals, Part 3: Pulse Code Modulation (PCM) A-law, Loudspeaking and Handsfree telephony".

[4] I-ETS 300 245-5 (1996): "Integrated Services Digital Network (ISDN); Technical Characteristics of Telephony Terminals, Part 5: Wideband (7 kHz) Handset Telephony".

[5] I-ETS 300 245-6 (1996): "Integrated Services Digital Network (ISDN); Technical Characteristics of Telephony Terminals, Part 6: Wideband (7 kHz) Loudspeaking and Handsfree telephony".

[6] I-ETS 300 245-8 (1996): "Integrated Services Digital Network (ISDN); Technical Characteristics of Telephony Terminals, Part 8: Speech transmission characteristics when using Low Delay Code-Excited Linear Prediction (LD-CELP) coding at 16 kbit/s".

[7] I-ETS 300 302-1 (1996): "Integrated Services Digital Network (ISDN); Videotelephony teleservice; Part 1: Electroacoustic characteristics for 3,1 kHz bandwidth handset terminals".

[8] I-ETS 300 302-2 (1995): "Integrated Services Digital Network (ISDN) Videotelephony teleservice; Part 1: Electroacoustic characteristics for 3,1 kHz bandwidth loudspeaking and handsfree terminals".

[9] I-ETS 300 302-3 (1996): "Integrated Services Digital Network (ISDN); Videotelephony teleservice; Part 3 Audio aspects-Wideband and Handset".

[10] I-ETS 300 144 (1996): "Integrated Services Digital Network (ISDN); Audiovisual services, Frame structure for a 64 to 1 920 kbit/s channel and associated syntax for in-band signalling".

[11] I-ETS 300 143 (1994): "Integrated Services Digital Network (ISDN); Audiovisual services, In-band signalling procedures for audiovisual terminals using digital channels up to 2 048 kbit/s".

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

[13] CCITT Recommendation G.722 (1988): "7 kHz audio coding within 64 kbit/s".

[14] CCITT Recommendation G.728 (1992): "Coding of speech at 16 kbit/s using low-delay code-excited linear prediction".

[15] CCITT Recommendation G.725 (1988): "System aspects for the use of the 7 kHz audio codec within 64 kbit/s".

[16] ITU-T Recommendation P.57 (1996): "Artificial Ears".

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

[18] ITU-T Recommendation G.701 (1993): "Vocabulary of digital transmission and multiplexing and pulse code modulation (PCM) terms".

[19] ITU-T Recommendation P.51 (1996): "Artificial Mouths".

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

[21] ITU-T Recommendation P.64 (1993): "Determination of sensitivity/frequency characteristics of local telephone systems".

[22] CCITT Recommendation P.76 (1988): "Determination of loudness rating; fundamental principles".

[23] TBR 3 (1995): "Integrated Services Digital Network (ISDN); Attachment requirements for terminal equipment to connect to an ISDN using ISDN basic access".

[24] ISO 3 (1973): "Preferred numbers-Series of preferred numbers".

[25] ITU-T Recommendation P.340 (1996): "Transmission characteristics of hands free telephones".

[26] ITU-T Recommendation G.122 (1993): "Influence of national systems on stability talker echo in international connections".

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

[28] ITU-T Recommendation P.310 (1996): "Transmission characteristics for telephone band (300-3400 Hz) digital telephones".

[29] ITU-T Recommendation P.50 (1993): "Artificial Voices".

[30] ITU-T Recommendation G.101 (1996): "The transmission plan".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this ETS, the definitions provided in the referenced standards and the following definitions apply:

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

audiographic terminal: Terminal supporting the audiographic teleconference service.

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 [19].

reference sphere: Sphere of radius 1 metre where the anechoic conditions of the acoustic testing environment are verified.

lip synchronization delay: The delay introduced in the sending and receiving audio paths in order to align the audio signals with the moving pictures respectively transmitted and received by the terminal.

digital interface: For the purposes of this ETS, the digital interface refers to the B channels available at the coincident S and T reference points at an ISDN basic access.

3.2 Abbreviations

For the purposes of this ETS, the abbreviations used in ITU-T Recommendations G.701 [18], P.10 [17], P.51 [19], P.57 [16], P.64 [21], P.76 [22] and P.79 [20] and the following abbreviations apply:

ARL	Acoustic Reference Level
ERP	Ear Reference Point
F_r	Correction factor for receiving measurements (annex A, subclause A.1.1.2.2)
F_s	Correction factor for sending measurements (annex A, subclause A.1.1.2.1)
F_{tcl}	Correction factor for terminal coupling loss measurements (annex A, subclause A.1.1.2.3)
HFRP	HandsFree Reference Point
ISDN	Integrated Services Digital Network
LD-CELP	Low Delay-Code Excited Linear Prediction
MRP	Mouth Reference Point
PCM	Pulse Code Modulation
PSTN	Public Switched Telephone Network
RLR	Receiving Loudness Rating
rms	root mean square
S/D	Signal to Distortion
SB-ADPCM	Sub Band-Adaptive Differential Pulse Code Modulation
SLR	Sending Loudness Rating
TCL	Terminal Coupling Loss
TCLw	Weighted Terminal Coupling Loss
TEUT	Telephone Equipment Under Test