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Digitalno omrežje z integriranimi storitvami (ISDN) - Daljinska storitev telefonije 3,1 kHz - Priključitvene zahteve za končne terminale

Integrated Services Digital Network (ISDN); Telephony 3,1 kHz teleservice; Attachment requirements for handset terminals

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Contents

Foreword

This Technical Basis for Regulation (TBR) has been produced by the Terminal Equipment (TE) Technical Committee of the European Telecommunications Standards Institute (ETSI).

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1 Scope

This TBR specifies the technical characteristics (electrical, logical and acoustic) to be provided by terminal equipment for the telephony 3,1 kHz teleservice which is capable of connection to a coincident S and T reference point at an interface to a public telecommunications network presented as an Integrated Services Digital Network (ISDN) basic access point.

The objective of this TBR is to ensure interworking between terminal equipment via the public network.

This TBR is applicable to simple 3,1 kHz telephony terminals as well as to the 3,1 kHz telephony function of multimedia or multi-service terminals.

This TBR is applicable to terminal equipment of the functional group defined as Terminal Equipment Type 1 (TE1) in CCITT Recommendation I.411 [1] which supports the telephony 3,1 kHz teleservice.

This TBR applies to apparatus for household, office and similar general indoor use. It includes all the functions necessary to provide real-time 2-way speech conversation. Where a function is indicated as optional, it need not be provided, but, where such a function is provided, the terminal needs to conform to the requirements and tests specified in this TBR.

A test is given for each requirement in this TBR including measurement methods. The terminal equipment may be stimulated to perform the tests by additional equipment if necessary.

This TBR is not applicable to:

a) terminal equipment specially designed for the disabled (e.g., with amplification of received speech as an aid for the hard-of-hearing);

b) terminal equipment using a radio link (e.g., cordless telephones);

c) terminal equipment for hostile environments.

NOTE 1: This TBR only applies to items of terminal equipment with an integral user-network interface for ISDN basic access, and which have a handset. Terminal equipment with a switching function which is not covered by the definition of TE1 is outside the scope of this TBR.

NOTE 2: This TBR does not apply to terminal equipment which may be supplied in some countries for connection to an interim ISDN corresponding to, but not wholly compatible with, the ISDN basic access standards.

NOTE 3: Terminals that meet the requirements of this TBR will also be suitable for connection to the S reference point for interworking via the public network.

2 Normative references

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

[1] CCITT Recommendation I.411 (1988): "ISDN user-network interfaces - Reference configurations".

[2] ITU-T Recommendation P.10: "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] ETS 300 153 (1992): "Integrated Services Digital Network (ISDN); Attachment requirements for terminal equipment to connect to an ISDN using ISDN basic access (NET 3 Part 1)".

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 (NET 3, Part 2)".

NOTE 1: Reference [4] is intended to be replaced by CTR 3 "Integrated Services Digital Network (ISDN); Attachment requirements for terminal equipment to connect to an ISDN using ISDN basic access". When this takes place, all references in this TBR to NET 3 (ETS 300 153 and ETS 300 104 [4]) will refer to CTR 3.

NOTE 2: ETS 300 104 [4] contains test descriptions and a requirements part that refers out to ETS 300 102-1.

NOTE 3: ETS 300 153 [4] contains test descriptions and a requirements part that refers out to ETS 300 012 (Layer 1) and ETS 300 125 (Layer 2).

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

[6] IEC 651: "Sound level meters".

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

[8] CCITT Recommendation G.101 (1988): "The transmission plan".

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

[10] ITU-T Recommendation P. 57 (1993): "Artificial ears".

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

[12] CCITT Recommendation O.133 (1988): "Equipment for measuring the performance of PCM encoders and decoders".

[13] CCITT Recommendation G.712 (1992): "Transmission performance characteristics of pulse code modulation".

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

[15] ITU-T Recommendation P.64 (1993): "Determination of sensitivity/frequency characteristics of local telephone systems to permit calculation of their loudness ratings".

[16] ISO 3 (1973): "Preferred numbers - series of preferred numbers".

[17] ITU-T Recommendation P.79 (1993): "Calculation of loudness ratings".

[18] IEC 225: "Octave, half-octave and third-octave band filters intended for the analysis of sound and vibrations".

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

[20] CCITT Recommendation O.132 (1988): "Quantizing distortion measuring equipment using a sinusoidal test signal".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this TBR, the relevant definitions as given in ITU-T Recommendation P.10 [2] and CCITT Recommendation G.701 [3] apply.

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

dB(A): Sound level relative to 20 mPa measured using the A-weighting defined in IEC 651 [6].

dBPa: Sound pressure level relative to 1 Pa (no weighting).

dBPa(A): Sound level relative to 1 Pa measured using the A-weighting defined in IEC 651 [6].

Designated terminal: The terminal which is permitted to draw power from power source 1 under restricted power conditions as specified in ETS 300 153 (NET 3, Part 1) [4].

Digital interface: The interface at the coincident S and T reference point.

Multimedia terminal: A terminal that simultaneously supports two or more media.

Multiservice terminal: A terminal that supports two or more teleservices.

Normal Power Condition: As defined in ETS 300 153 (NET 3, Part 1) [4].

Restricted Power Condition: The condition indicated by the reversed polarity of the phantom voltage at the coincident S and T reference point, as defined in ETS 300 153 (NET 3, Part 1) [4].

NOTE 1: For some networks restricted power condition will be the normal operating mode.

Telephony 3,1 kHz teleservice: As defined in ETS 300 111 [5].

NOTE 2: Work is currently being undertaken by ETSI to analyse the mouth-to-ear characteristics of voice communication. The results of this work could have consequences for the essential requirements of this TBR.

Terminal Coupling Loss (TCL): The frequency dependent coupling loss between the receiving port and the 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 3: The receiving port and the sending port of a digital voice terminal is a 0 dBr point.

NOTE 4: The coupling at the user interface depends on the conditions of use.

Weighted terminal coupling loss (TCLw): The weighted terminal coupling loss using the weighting of CCITT Recommendation G.122 [7].

3,1 kHz telephony terminal: A terminal that supports the telephony 3,1 kHz teleservice as described in ETS 300 111 [5].