



SLOVENSKI STANDARD
SIST ETS 300 082 E1:2003

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Digitalno omrežje z integriranimi storitvami (ISDN) – Daljinska storitev telefonije na 3,1 kHz – Zahteve za združljivost telefonskih terminalov pri izvedbi konec-konec

Integrated Services Digital Network (ISDN); 3,1 kHz telephony teleservice End-to-end compatibility requirements for telephony terminals

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Terminal Equipment (TE) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS is based on draft prETS 300 111 [5] concerning the stage one service description for the 3,1 kHz telephony teleservice in the Integrated Services Digital Network (ISDN).

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1 Scope

This standard specifies those technical characteristics (logical and electroacoustic) that are necessary to provide end-to-end compatibility of terminal equipment of the 3,1 kHz telephony teleservice which is intended for connection to the ISDN basic rate interface at the coincident S/T or S reference point.

The requirements of this standard are in addition to those of standards for connection to the ISDN basic rate interface.

The requirements of this standard describe the logical characteristics of the user-network signalling over the D-channel relevant to this service.

The requirements of this standard provide real time two-way speech of a quality consistent with the CCITT P. series Recommendations.

The requirements of this standard define only those characteristics relevant to normal handset telephony.

This standard is not applicable to:

- a) hands-free or loudspeaking telephony;
- b) cordless telephony;
- c) telephony for disabled people (e.g. with amplification of received speech as an aid for the hard of hearing);
- d) telephony in hostile environments.

However, other standards that apply to such functions will ensure compatibility with handset telephony.

NOTE 1: The characteristics of the ISDN user-network interface are specified in final draft prETS 300 012 [1], ETS 300 102-1 [3] and ETS 300 104 [4].

NOTE 2: Type approval requirements for terminals accessing this teleservice can be found in ETS 300 085 [2], 300 105 [4] and draft prETS 300 153 [6].

2 Normative references

This ETS incorporates by dated or undated reference, provision 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 referenced to applies.

- [1] Final draft prETS 300 012 (1991): "Integrated Services Digital Network (ISDN); Basic user-network interface, Layer 1 specification and test principles".
- [2] ETS 300 085 (1990): "Integrated Services Digital Network (ISDN); 3,1 kHz telephony teleservice, attachment requirements for handset terminals (Candidate NET 33)".
- [3] ETS 300 102-1 (1991): "Integrated Services Digital Network (ISDN); User-network interface layer 3, Specifications for basic call control".
- [4] 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 (Candidate NET 3 Part 2)".
- [5] Draft prETS 300 111: "Integrated Services Digital Network (ISDN); Telephony 3,1 kHz teleservice; Service description (NA1(89)38)".

- [6] Draft prETS 300 153: "Integrated Services Digital Network (ISDN); Attachment requirements for terminal equipment to connect to an Integrated Services Digital Network (ISDN) using ISDN basic access (T/TE 04-08)".
- [7] CCITT Recommendation G.101 (1988): "The transmission plan".
- [8] CCITT Recommendation G.122 (1988): "Influence of national systems on stability, talker echo, and listener echo in international connections".
- [9] CCITT Recommendation G.223 (1988): "Assumptions for the calculation of noise on hypothetical reference circuits for telephony".
- [10] CCITT Recommendation G.701 (1988): "Vocabulary of digital transmission and multiplexing, and Pulse Code Modulation (PCM) terms".
- [11] CCITT Recommendation G.711 (1988): "Pulse Code Modulation (PCM) of voice frequencies".
- [12] CCITT Recommendation G.714 (1988): "Separate performance characteristics for the send and receive sides of PCM channels applicable to 4-wire voice frequency interfaces".
- [13] CCITT Recommendation I.112 (1988): "Vocabulary of terms for ISDNs".
- [14] CCITT Recommendation I.230 (1988): "Definition of bearer service categories".
- [15] CCITT Recommendation I.240 (1988): "Definition of teleservices".
- [16] CCITT Recommendation O.131 (1988): "Quantizing distortion measuring equipment using a pseudo-random noise test signal".
- [17] CCITT Recommendation O.132 (1988): "Quantizing distortion measuring equipment using a sinusoidal test signal".
- [18] CCITT Recommendation O.133 (1988): "Equipment for measuring the performance of PCM encoders and decoders".
- [19] CCITT Recommendation P.10 (1988): "Vocabulary of terms on telephone transmission quality and telephone sets".
- [20] CCITT Recommendation P.51 (1988): "Artificial ear and artificial mouth".
- [21] CCITT Recommendation P.64 (1988): "Determination of sensitivity/frequency characteristics of local telephone systems to permit calculation of their loudness ratings".
- [22] CCITT Recommendation P.76 (1988): "Determination of loudness ratings; fundamental principles".
- [23] CCITT Recommendation P.79 (1988): "Calculation of loudness ratings".
- [24] CCITT Blue Book (1988), Volume V, Supplement 13: "Noise spectra".
- [25] IEC 318: "An artificial ear, of the wide band type, for the calibration of earphones used in audiometry".
- [26] IEC 651: "Sound level meters".
- [27] ISO 3 (1973): "Preferred numbers - series of preferred numbers".

3 Definitions, symbols and abbreviations

3.1 Definitions and symbols

For the purpose of this standard, the relevant definitions and symbols used in CCITT Recommendations G.701 [10], I.112 [13], I.230 [14], I.240 [15] and P.10 [19] shall apply.

Acoustic reference level: the acoustic level which gives -10 dBm0 at the digital interface.

Designated terminal: refers to the terminal which is permitted to draw power from Power Source 1 under restricted power conditions as specified in final draft prETS 300 012 [1].

Restricted power condition: the condition where the terminal has no other power source available than Power Source 1 supplying the restricted power condition as specified in final draft prETS 300 012 [1].

3,1 kHz telephony teleservice: a definition for 3,1 kHz telephony service is to be found in draft prETS 300 111 [5].

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 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 weighted Terminal Coupling Loss using the weighting of CCITT Recommendation G.122 [8].

3.2 Abbreviations

Abbreviations used in CCITT Recommendations G.701 [10], I.112 [13], I.230 [14], I.240 [15] and P.10 [19] shall apply.

The following abbreviations shall also apply:

ARL:	Acoustic Reference Level
BC:	Bearer Capability
ERP:	Ear Reference Point
HLC:	High Layer Compatibility
ISDN:	Integrated Services Digital Network
LE:	Artificial/real ear correction
LLC:	Low Layer Compatibility
L _{me} ST:	Sidetone Path Loss
LRGP:	Loudness Rating Guard-ring Position

LSTR:	Listener Side Tone Rating
MRP:	Mouth Reference Point
PCM:	Pulse Code Modulation
PSTN:	Public Switched Telephone Network
TCL:	Terminal Coupling Loss
TCLw:	Weighted Terminal Coupling Loss
TE:	Terminal Equipment

4 Access channel selection

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

Compliance shall be tested by random choice of B-channel during testing.

5 D-channel characteristics

5.1 Outgoing calls

5.1.1 Coding of Bearer Capability (BC) information element

When initiating a call on the 3,1 kHz telephony teleservice in the ISDN, the coding of the BC information element in the SETUP message shall be in conformance with figure 1.

Compliance shall be checked by using the test specified in ETS 300 104 [4], Annex A, section 3.

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0	0	0	0	0	1	0	0	Octet 1
Bearer capability information element identifier								
0	0	0	0	0	0	1	1	Octet 2
Length of information element								
1	0	0	0	0	0	0	0	Octet 3
CCITT		Speech						
1	0	0	1	0	0	0	0	Octet 4
Ext	Circuit Mode		64 kbit/s					
1	0	1	0	0	1	1	1	Octet 5
Ext	Layer 1		G.711 A-law					

Figure 1: Coding of Bearer Capability (BC) information element-speech

5.1.2 Coding of High Layer Compatibility (HLC) information element

The use of the High Layer Compatibility (HLC) information element is optional. However, if used when initiating a call on the 3,1 kHz telephony teleservice in the ISDN, the coding of the HLC information element in the SETUP message shall be in conformance with figure 2.