



SLOVENSKI STANDARD
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Integrated Services Digital Network (ISDN); Technical characteristics of telephony terminals; Part 7: Locally generated information tones

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33.080

Digitalno omrežje z
integriranimi storitvami
(ISDN)

Integrated Services Digital
Network (ISDN)

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Foreword

Part 7 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it can be converted into an ETS, have its life extended for a further two years, be replaced by a new version, or be withdrawn.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 seventh Part of an I-ETS which is currently comprises eight Parts:

- Part 1: General (I-ETS 300 245-1 [3]);
- Part 2: PCM A-law, handset terminals;
- Part 3: PCM A-law, loudspeaking and handsfree function;
- Part 4: Interface for additional equipment;
- Part 5: Wideband coding handset functions;
- Part 6: Wideband coding loudspeaking and handsfree telephony;
- Part 7: Locally generated information tones;**
- Part 8: Terminal application of 16 kbit/s speech coding algorithm.

The large number of services and facilities offered by the Integrated Services Digital Network (ISDN) requires that many items of information be provided to the human user in order to describe call progress, and to invite the user to react as appropriate. Related data, controlled by the network, are either displayed on the user's terminal or transmitted as tones or voice announcements through a B-channel.

The requirements concerning connection of the acoustic receiving transducer to the B-channel are detailed in I-ETS 300 245-1 [3], subclause 5.3.1.

The local generation of tones under control of messages received through the D-channel is another possibility.

This option allows the use of a man-machine procedure similar to the case of conventional analogue telephony terminals and/or replacement of network provided tones by a set of locally generated tones.

Proposed announcement date	
Date of adoption of this I-ETS:	10 November 1995
Date of latest announcement of this I-ETS (doa):	29 February 1996

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1 Scope

Part 7 of this I-ETS defines the use of a set of standardized tones which, as an option, may be generated by a digital telephony terminal as specified in I-ETS 300 245-1 [3], subclause 5.3.2.

This Part includes related information and requirements concerning the:

- definition and use of tones;
- control of tone generation;
- tone characteristics.

This I-ETS applies to terminals for connection to the ISDN basic access of the coincident S and T reference point.

2 Normative references

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

- [1] ETS 300 102-1 (1990): "Integrated Services Digital Network (ISDN); User-network interface layer 3, Specifications for basic call control".
- [2] ETS 300 085 (1990): "Integrated Services Digital Network (ISDN); 3,1 kHz telephony teleservice, Attachment requirements for handset terminals (Candidate NET 33)".
- [3] I-ETS 300 245-1: "Integrated Services Digital Network (ISDN); Technical characteristics of telephony terminals, Part 1: General".
- [4] ETS 300 153: "Integrated Services Digital Network (ISDN); Attachment requirements for terminal equipment to connect to an ISDN using ISDN basic access (Candidate NET 3, Part 1)".
- [5] ITU-T Recommendation P.57 (1993): "Artificial ears".
- [6] IEC Publication 651: "Sound level meters".

3 Definitions and use of tones

In order that a user always hears an identical tone in various European countries, when the call meets the same situation, a convenient set of harmonized tones should be used.

This facility is an option as specified in I-ETS 300 245-1 [3], subclause 5.3.2. The user should be provided with a means of implementing this option.

The set of tones should be kept to a minimum, while providing the user with a sufficient knowledge of the situation, in order that he can determine which specific behaviour or action is required.

For the purposes of this Part of this I-ETS, the following definitions apply. The set of standardized tones and their meaning in the ISDN terminal application is described as follows:

dial tone: Indicates that the terminal or the network is ready to receive call information and invites the user to start dialling.

special dial-tone: An alternative to the dial tone that reminds the user that special conditions apply to his/her terminal (a local or network provided facility/supplementary service has been activated).

ringing tone: Indicates that the outgoing call is presented to, and acknowledged by, at least one compatible terminal at the called party's premises (however, this terminal may already be engaged in another call).

busy tone: Informs the caller that the called party is busy.

congestion tone: Informs the caller that a temporary network congestion, error, etc., rejects his call attempt.

call waiting tone: An indication advising the called party, already engaged in another telephony call, that his terminal has received a new incoming call.

special information tone: Informs the caller that an auditory or visual announcement clarifying the call progress will normally follow. This may indicate call diversion, number not valid, etc, ...

invalid attempt indication: An indication that the call attempt has been rejected by the network for some special reason. e.g. error, fault, unallowed number. It informs the user that his call attempt has not been successful and should not normally be tried again. Additional information on the nature of the failure may be provided. The special information tone is used for this purpose. Where the special information tone is not available the congestion tone shall be provided.

call reject indication: An indication that the call attempt (or established call) has met a situation where it should be cleared. Busy tone or congestion tone are used for this purpose.

NOTE: When the digital telephony terminal is connected to an ISDN providing detailed data about call rejection (through a "cause" information element), the call reject indication may be used with a more restrictive meaning indicating that the call attempt was valid and may be tried again, taking into account additional information which may be displayed on the terminal. The "causes" associated with this restrictive meaning are listed in annex A (normative).

4 Tone classification and minimum requirements

The tones, with their conditions for delivery, may be classified as follows:

- Type 1:** tones which could not be received from the network since a B-channel is not yet or no longer available;
- Type 2:** tones generated in place of network-provided tones;
- Category A:** tones which may be useful to keep the same man-machine procedure, e.g. in the case of conventional analogue terminals;
- Category B:** tones which are considered as basic requirements for the telephony service;
- Category C:** additional tones.

Table 1 gives the type and category of every local tone relating to its condition for delivery.

Table 1: Type and category of local tones relating to conditions for delivery

Tones	Case/condition	Type	Category	NOTE
Dial tone	en-bloc sending	1	A	
	overlap sending	2	B	
Special dial tone	special facility activated	1 or 2	C B	2
Ringling tone	called terminal alerting	2	B	
Busy tone	Network Determined User Busy (NDUB)	2	B	
	User Determined User Busy (UDUB)	2	B	
	call rejected by the network/time out (no answer from the called terminal)	2	B	
	call rejected by the called user (with or without user-to-user signalling message)	2	B	
	call rejected by the called terminal (free but without B-channel available)	2	B	
Congestion tone	call rejected by the network (temporary congestion or failure)	2	B or C	1
	call attempt rejected by the calling terminal (e.g. not ready, no B-channel available)	1	C	
	call cleared by distant user (previously established by any user)	1	A	2
Call waiting tone	additional call set-up received	1 or 2	C	3
Special information tone	call cleared by the network (invalid attempt)	1	B or C	4
NOTE 1:	If this tone is not available, it shall be replaced by the busy tone (B).			
NOTE 2:	If the terminal can set-up a new call, dialling tone may be used as an alternative.			
NOTE 3:	As an alternative, the terminal may generate a low level audible alerting signal.			
NOTE 4:	A locally generated special information tone should only be used where there is no B-channel tone and message available.			

Any terminal providing the local tone generation option specified in this I-ETS shall generate, as a minimum, tones belonging to type/category 2/B.

Provision of tones 1/A, 1/C and 2/C is subject to additional options.

Conformance shall be checked subjectively.