



# SLOVENSKI STANDARD SIST ETS 300 012 E1:2003

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Integrated Services Digital Network (ISDN); Basic user-network interface; Layer 1 specification and test principles

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**ICS:**

33.080	Digitalno omrežje z integriranimi storitvami (ISDN)	Integrated Services Digital Network (ISDN)
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## Foreword

This European Telecommunication Standard (ETS) was produced by the Transmission and Multiplexing (TM) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS aims to meet urgent requirements of network operators and equipment manufacturers who are designing equipment to operate with an Integrated Services Digital Network (ISDN) basic rate access user-network interface. This ETS shall replace CEPT Recommendation T/L 03-07 (November 1987).

This ETS takes into account the special requirements from ECMA Standard 103: "Physical layer at the basic access interface between data processing equipment and private switching networks" (1987, 2nd Edition) in Annex B.

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## 1 Scope

This European Telecommunication Standard (ETS) specifies requirements and test principles for the ISDN basic rate user-network interface including the physical, electrical and functional characteristics and the information exchange with higher layers. This ensures that interface implementations in an ISDN equipment for use with ISDN basic access is portable within Europe with regard to layer 1 interface aspects and that interworking with higher layer protocols for ISDN is supported.

This ETS is applicable to equipment having interface I<sub>a</sub> or I<sub>b</sub> for the connection to the ISDN basic access intended to be installed on customers premises. According to CCITT Recommendation I.411 [1], this ETS is to be applied to interfaces at reference points S, T and S/T (coincident S and T) of the ISDN reference configuration.

For the case where this ETS is applied to the T and the S/T reference point, the main body of this text and Annexes A, D and E are normative.

For the case where this ETS is applied to the S reference point, the main body of this text and Annexes A, B, D and E are normative.

This ETS is based on CCITT Recommendation I.430 [2] and gives further requirements or modifications to this base document. Furthermore, this ETS identifies for each aspect defined in CCITT Recommendation I.430 [2] whether it is regarded as normative or informative in the sense of this ETS.

Annexes D and E to this ETS specify the relevant test principles to verify the requirements and for testing conformance to this ETS. It is outside the scope of this ETS to define the static conformance requirements an equipment has to meet for approval attachment to a public network.

This ETS does not specify:

- safety requirements;
- interface or equipment overvoltage protection requirements;
- immunity requirements against electromagnetic interferences;
- emission limitation requirements.

## 2 Normative references

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

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|-----|---|
| [1] | CCITT Recommendation I.411, (1988): "ISDN user-network interfaces - reference configurations".  |
| [2] | CCITT Recommendation I.430, (1988): "Basic user-network interface - layer 1 specification".   |
| [3] | ETS 300 125 (1991): "Integrated Services Digital Network (ISDN); User-network interface data link layer specification, Application of CCITT Recommendations Q.920/I.440 and Q.921/I.441". |
| [4] | prEN 28 877: "Interface connector and contact assignments for ISDN basic access interface located at reference points S and T".   |
| [5] | ENV 41 001: "ISDN connector up to 8 pins and up to 2,048 Mbit/s".   |

- [6] prEN 50096: "Integrated Services Digital Network (ISDN); Equipment with ISDN user-network interface at basic and primary rate - EMC requirements".
- [7] Final draft prETS 300 047: "Integrated Services Digital Network (ISDN); Basic Access - safety and protection".
- [8] CEN/CENELEC ENV 41 004: "Reference Configuration for Calls, based on ISDN Connection Types, as provided by Private Telecommunication Network Exchange".
- [9] CCITT Recommendation X.200 (1988): "Reference model of open systems interconnection for CCITT applications".
- [10] CCITT Recommendation I.431 (1988): "Primary rate user-network interface - Layer 1 specification".
- [11] CCITT Recommendation G.960 (1988): "Digital section for ISDN basic rate access".
- [12] CCITT Recommendation G.961 (1988): "Digital transmission system on metallic local lines for ISDN basic rate access".
- [13] ETS 300 102-1 (1990): "Integrated Services Digital Network (ISDN); User-network interface layer 3; Specifications for basic call control".
- [14] CCITT Recommendation O.171 (1988): "Timing jitter measuring equipment for digital systems".
- [15] CCITT Recommendation Q.512 (1988): "Exchange interfaces for subscriber access".
- [16] CCITT Recommendation G.812 (1989): "Timing requirements at the outputs of slave clocks suitable for pliesochronous operation of international digital links".

### 3 Definitions

For the purposes of this ETS the following definitions, together with those given in Annex E of CCITT Recommendation I.430 [2] and in CCITT Recommendation I.411 [1] apply.

**Terminal equipment (TE):** an equipment with interface  $I_a$  and consisting of one or more functional blocks.

NOTE: This term is used in this ETS to indicate terminal-terminating aspects of TE1, TA and NT2 functional groups, where these have an  $I_a$  interface.

**Terminal equipment type 1 (TE1):** this functional group includes functions belonging to the functional group TE, and with an interface that complies with the ISDN user-network interface recommendation.

**Network termination (NT):** an equipment providing interface  $I_b$ .

NOTE: This term is used in this ETS to indicate network-terminating aspects of NT1, NT2 and PS1 functional groups where these have an  $I_b$  interface.

**Network termination type 1 (NT1):** this functional group includes functions broadly equivalent to layer 1 (physical) of the OSI reference model. These functions are associated with the proper physical and electromagnetic termination of the network. NT1 functions are:

- line transmission termination;
- layer 1 maintenance functions and performance monitoring;
- timing;
- power transfer;
- layer 1 multiplexing;
- interface termination, including multidrop termination;
- employing layer 1 contention resolution.

**Network termination type 2 (NT2):** this functional group includes functions broadly equivalent to layer 1 and higher layers of the CCITT Recommendation X.200 [9] reference model. PABXs, local area networks, and terminal controllers are examples of equipment or combinations of equipment that provide NT2 functions. NT2 functions include:

- layer 2 and 3 protocol handling;
- layer 2 and 3 multiplexing;
- switching;
- concentration;
- maintenance functions; [SIST ETS 300 012 E1:2003](https://standards.iteh.ai/catalog/standards/sist/eea472f6-b2a2-4a9e-8d7f-ad72dd3e9e69/sist-ets-300-012-e1-2003)
- interface termination and other layer 1 functions.

**Terminal adapter (TA):** an equipment with interface  $I_a$  and one or more auxiliary interfaces that allow non-ISDN terminals to be served by an ISDN user-network interface (see also CCITT Recommendation I.411 [1]).

**Power source 1 (PS1):** power source for the provision of remote power feeding of TE from NT via a phantom circuit of the interface wires.

**Interface  $I_a$ :** user side of the ISDN user-network interface for the basic access.

**Interface  $I_b$ :** network side of the ISDN user-network interface for the basic access.