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Digitalno omrežje z integriranimi storitvami (ISDN) – Osnovni vmesnik uporabnik-omrežje (UNI) – 1. del: Specifikacija prve plasti

Integrated Services Digital Network (ISDN); Basic User-Network Interface (UNI); Part 1: Layer 1 specification

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ICS:

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

This second edition European Telecommunication Standard (ETS) has been produced by the ETSI Technical Committee Transmission and Multiplexing (TM).

This ETS concerns the basic User Network Interface (UNI) for the Integrated Services Digital Network (ISDN) and consists of 7 parts as follows:

Part 1: "Layer 1 specification";

Part 2: "Implementation Conformance Statement (ICS) and Implementation eXtra Information for Testing (IXIT) specification for interface I_A";

Part 3: "Implementation Conformance Statement (ICS) and Implementation eXtra Information for Testing (IXIT) specification for interface I_B";

Part 4: "Conformance test specification for interface I_A";

Part 5: "Conformance test specification for interface I_B";

Part 6: "Abstract Test Suite (ATS) specification for interface I_A";

Part 7: "Abstract Test Suite (ATS) specification for interface I_B";

and is based on ITU-T Recommendation I.430 [10].

Transposition dates	
Date of adoption of this ETS:	18 September 1998
Date of latest announcement of this ETS (doa):	31 January 1999
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 July 1999
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1 Scope

This part 1 of ETS 300 012 specifies requirements for the ISDN basic rate UNI 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_A or I_B for the connection to the ISDN basic access intended to be installed on customer premises according to ITU-T Recommendation I.411 [9], this ETS is for application 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 part 1 of the ETS and the parts 6 and 7 are normative.

For the case where this ETS is applied to the S reference point, annex A to this part 1 of the standard is also normative.

This ETS does not specify:

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

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.

- <https://standards.iteh.ai/catalog/standards/sist/4d282dd7-1e7b-455d-938c-0307e39cha6e/sist-ets-300-012-1-e2-2003>
- [1] CCITT Recommendation G.117 (1988): "Transmission aspects of unbalance about earth".
- [2] CCITT Recommendation I.412 (1988): "ISDN user-network interfaces; interface structures and access capabilities".
- [3] CCITT Recommendation X.211 (1988): "Physical service definition of open systems interconnection for CCITT applications".
- [4] EN 28877 (1993): "Information technology; Telecommunications and information exchange between systems; Interface connector and contact assignment for ISDN Basic Access Interface located at reference points S and T (ISO/IEC 8877:1992)".
- [5] EN 60603-7 (1993): "Connectors for frequencies below 3 MHz for use with printed boards; Part 7: Detail specification for connectors, 8-way, including fixed and free connectors with common mating features; (IEC 603-7:1990) (S)".
- [6] ENV 41004: "Reference Configuration for Connectivity Relations of Private Telecommunication Network Exchanges".
- [7] ETS 300 047-3 (1992): "Integrated Services Digital Network (ISDN); Basic access - safety and protection; Part 3: Interface I_A - protection".
- [8] ISO/IEC 9646-1 (1994): "Information technology; Open Systems Interconnection; Conformance Testing Methodology and Framework; Part 1: General concepts".

- [9] ITU-T Recommendation I.411 (1993): "ISDN user-network interfaces; reference configurations".
- [10] ITU-T Recommendation I.430 (1995): "Basic user-network interface; layer 1 specification".
- [11] EN 50081: "Electromagnetic compatibility; Generic emission standard".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of this ETS, the following definitions apply:

3.1.1 General definitions

basic access: A user-network access arrangement that corresponds to the interface structure composed of two B-channels and one D-channel. The bit rate of the D-channel for this type of access is 16 kbit/s.

Implementation Conformance Statement (ICS): See ISO/IEC 9646-1 [8], subclause 3.4.6.

Integrated Services Digital Network (ISDN): An integrated services network that provides digital connections between UNIs.

interface: This ETS defines the layer 1 characteristics of the UNI to be applied at the S or T reference points for the basic interface structure defined in CCITT Recommendation I.412 [2]. The reference configuration for the interface is defined in ITU-T Recommendation I.411 [9] and is reproduced in figure 1.

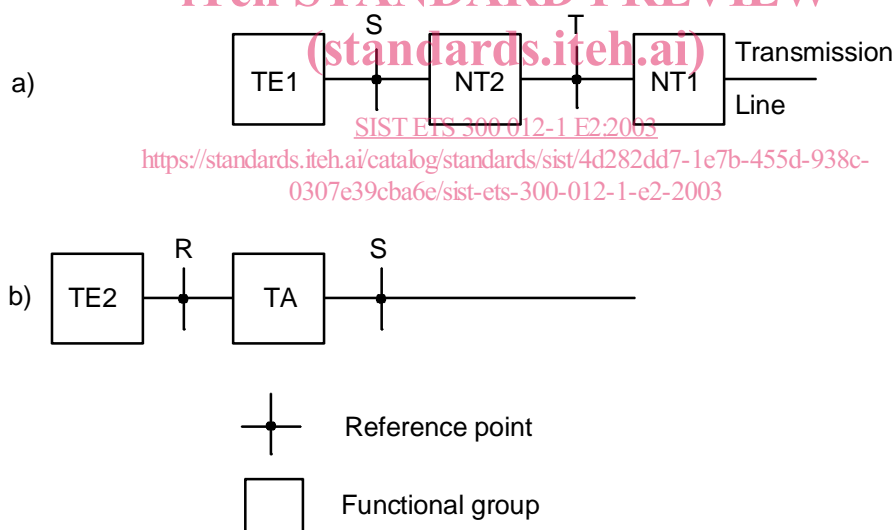


Figure 1: Definition of interface points according to the ISDN reference configuration

Network Termination (NT): The term NT is used to indicate network terminating layer 1 aspects of NT1 and NT2 functional groups unless otherwise indicated. However, in subclauses 3.1.5 and 7.2 the term NT is used to indicate the layer 1 network side of the basic access interface.

Terminal Equipment (TE): The term TE is used to indicate terminal terminating layer 1 aspects of TE1, TA and NT2 functional groups, unless otherwise indicated. However, in subclauses 3.1.5 and 7.2, the term TE is used to indicate the layer 1 terminal side of the basic access interface.

3.1.2 Definition of services

services required from the physical medium: Layer 1 of this interface requires a balanced metallic transmission medium, for each direction of transmission, capable of supporting 192 kbit/s.

services provided to layer 2: Layer 1 provides the following services to layer 2 and the management entity.

transmission capability: Layer 1 provides the transmission capability, by means of appropriately encoded bit streams, for the B- and D-channels and the related timing and synchronization functions.

activation/deactivation: Layer 1 provides the signalling capability and the necessary procedures to enable customer TEs and/or NTs to be deactivated when required and reactivated when required. The activation and deactivation procedures are defined in subclause 7.2.

D-channel access: Layer 1 provides the signalling capability and the necessary procedures to allow TEs to gain access to the common resource of the D-channel in an orderly fashion while meeting the performance requirements of the D-channel signalling system. These D-channel access control procedures are defined in subclause 7.1.

maintenance: Layer 1 provides the signalling capability, procedures and necessary functions at layer 1 to enable maintenance functions to be performed.

status indication: Layer 1 provides an indication to the higher layers of the status of layer 1.

3.1.3 Primitives between layer 1 and other entities

Primitives represent, in an abstract way, the logical exchange of information and control between layer 1 and other entities. They neither specify nor constrain the implementation of entities or interfaces.

3.1.4 Modes of operation

Both point-to-point and point-to-multipoint modes of operation, as described below, are intended to be accommodated by the layer 1 characteristics of the UNI. In this ETS, the modes of operation apply only to the layer 1 procedural characteristics of the interface and do not imply any constraints on modes of operation at higher layers.

Point-to-point operation: This mode of operation at layer 1 implies that only one source (transmitter) and one sink (receiver) are active at any one time in each direction of transmission at an S or T reference point. (Such operation is independent of the number of interfaces which may be provided on a particular wiring configurations - see clause 5).

Point-to-multipoint operation: This mode of operation at layer 1 allows more than one TE (source and sink pair) to be simultaneously active at an S or T reference point. (The multipoint mode of operation may be accommodated, as discussed in clause 5, with point-to-point or point-to-multipoint wiring configurations).

3.1.5 Definition of states

3.1.5.1 TE states

State F1 (INACTIVE): In this inactive (powered-off) state, the TE is not transmitting and cannot detect the presence of any input signals. In the case of locally powered TEs which cannot detect the appearance/disappearance of power source 1 or 2, this state is entered when local power is not present. For TEs which can detect power source 1 or power source 2, this state is entered whenever loss of power (required to support all TEI functions) is detected, or when the absence of power from source 1 or 2, whichever power source is used for determining the connection status, is detected.

State F2 (SENSING): This state is entered after the TE has been powered on but has not determined the type of signal (if any) that the TE is receiving. When in this state, a TE may go to a low-power consumption mode as specified in subclause 6.1.8.

State F3 (DEACTIVATED): This is the deactivated state of the physical protocol. Neither the NT nor the TE is transmitting. When in this state, a TE may go to a low-power consumption mode as specified in subclause 6.1.8.