



SLOVENSKI STANDARD
SIST ETS 300 297 E1:2003

01-december-2003

Digitalno omrežje z integriranimi storitvami (ISDN) – Digitalni dostopovni odsek za osnovni dostop v sistemu ISDN

Integrated Services Digital Network (ISDN); Access digital section for ISDN basic access

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: ETS 300 297 Edition 1

SIST ETS 300 297 E1:2003
<https://standards.iteh.ai/catalog/standards/sist/d3dcf8fa-4eff-4363-8bad-2ebac368035e/sist-ets-300-297-e1-2003>

ICS:

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

SIST ETS 300 297 E1:2003

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST ETS 300 297 E1:2003

<https://standards.iteh.ai/catalog/standards/sist/d3dcf8fa-4eff-4363-8bad-2ebae368035e/sist-ets-300-297-e1-2003>



EUROPEAN
TELECOMMUNICATION
STANDARD

ETS 300 297

May 1995

Source: ETSI TC-TM

Reference: DE/TM-03004

ICS: 33.080

Key words: ISDN, basic access

iTeh STANDARD PREVIEW
Integrated Services Digital Network (ISDN);
Access digital section for ISDN basic access

[SIST ETS 300 297 E1:2003](https://standards.iteh.ai/catalog/standards/sist/d3dcf8fa-4eff-4363-8bad-2ebae368035e/sist-ets-300-297-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/d3dcf8fa-4eff-4363-8bad-2ebae368035e/sist-ets-300-297-e1-2003>

ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE

Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE

X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

Tel.: +33 92 94 42 00 - Fax: +33 93 65 47 16

Copyright Notification: No part may be reproduced except as authorized by written permission. The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 1995. All rights reserved.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST ETS 300 297 E1:2003](https://standards.iteh.ai/catalog/standards/sist/d3dcf8fa-4eff-4363-8bad-2ebae368035e/sist-ets-300-297-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/d3dcf8fa-4eff-4363-8bad-2ebae368035e/sist-ets-300-297-e1-2003>

Contents

Foreword	7
1 Scope	9
2 Normative references	9
3 Definitions and abbreviations	10
3.1 Definitions	10
3.2 Abbreviations	10
4 Configuration and application	10
4.1 Configuration	10
4.2 Application	11
4.3 Modelling and relationship between the access digital section and the ET	13
5 Functions	14
5.1 B-channel	14
5.2 D-channel	14
5.3 Bit timing	14
5.4 Octet timing	14
5.5 Activation	15
5.5.1 Activation from ET	15
5.5.2 Request for activation from TE	15
5.6 Deactivation	15
5.7 Power feeding	15
5.8 Operation and maintenance	15
6 Signal transfer delay	15
7 Jitter	16
7.1 Output/input jitter at the T reference point	16
7.2 Jitter at V_1 reference point	16
8 Activation/deactivation	16
8.1 Functional capabilities	16
8.1.1 Customer installation at the user side of the T reference point	16
8.1.2 Installation at the network side of V_1 reference point	16
8.2 Modelling	17
8.2.1 General	17
8.2.2 Partitioning of functions	18
8.2.3 Location of timer T2	18
8.3 Activation/deactivation procedures	19
8.3.1 Basic characteristics of the procedures	19
8.3.1.1 Priority	19
8.3.1.2 System management	19
8.3.1.3 Loopbacks	19
8.3.1.4 Protection of layer 2 frames	19
8.3.1.5 Structure of the tables	19
8.4 Description of the state transition table	20
8.4.1 Access digital section states (DS-states)	20
8.4.1.1 State DS 1.0 (access deactivated)	20
8.4.1.2 State DS 1.1 (access activation initiated)	20
8.4.1.3 State DS 1.2 (access activation: DS synchronised LT --> NT)	20
8.4.1.4 State DS 1.3 (access activation: DS activated)	20
8.4.1.5 State DS 1.4 (access activated)	20

	8.4.1.6	State DS 1.5 (LOS/LFA at T)	20
	8.4.1.7	State DS 1.6 (access deactivation initiated).....	21
	8.4.1.8	State DS 1.7 (defect condition)	21
	8.4.1.9	State DS 2.0 (loopback 1 or 1a initiated)	21
	8.4.1.10	State DS 2.1 (loopback 1 or 1a activated)	21
	8.4.1.11	State DS 2.2 (loopback 2 initiated).....	21
	8.4.1.12	State DS 2.3 (DS synchronised LT --> NT).....	21
	8.4.1.13	State DS 2.4 (DS activated)	21
	8.4.1.14	State DS 2.5 (loopback 2 activated)	21
	8.4.2	Set of signals sent across the T reference point	21
	8.4.3	Set of function elements sent across the V ₁ reference point	22
	8.4.4	Assumptions made in specifying the procedures in table 2.....	22
8.5	Activation time		25
	8.5.1	Warm start time	25
	8.5.2	Cold start time.....	25
9	Operation and maintenance		25
	9.1	Control facilities	25
	9.1.1	Loopbacks	25
	9.1.1.1	Loopback implementation	25
	9.1.1.2	Loopback procedure	26
	9.1.2	Information request.....	26
	9.1.3	Power switch on/off to the line	26
	9.1.4	Continuity test	26
	9.2	Monitoring.....	26
	9.2.1	Functions	26
	9.2.2	Defect conditions and consequent actions	26
	9.2.2.1	Detection of defect conditions	26
	9.2.2.2	Consequent actions	27
	9.2.3	Error detection and reporting.....	27
	9.2.4	Status report functions	27
	9.2.5	System dependent status report functions	27
Annex A (normative):	System management requirements.....		28
A.1	Introduction		28
A.2	System management requirements.....		28
	A.2.1	General.....	28
	A.2.2	Error indications	28
	A.2.3	Loopback operations.....	28
	A.2.4	Continuity test.....	28
	A.2.5	Information to be sent in the D-channel during loopback operation.....	28
	A.2.6	Configuration control	29
A.3	Description of the ET layer 1 state transition table		29
	A.3.1	ET layer 1 states (ET-states)	29
	A.3.1.1	State ET 1.0 (access deactivated).....	29
	A.3.1.2	State ET 1.1 (access activation initiated).....	29
	A.3.1.3	State ET 1.2 (access activated):.....	29
	A.3.1.4	State ET 2.0 (access in loopback state)	29
	A.3.1.5	State ET 2.1 (loopback requested)	29
	A.3.2	Set of primitives within the ET for the support of functions associated with the access digital section.....	30
	A.3.3	Assumptions made in specifying the procedures in table A.1 (ET 1.x states)	30
Annex B (informative):	Partial activation of the access digital section.....		32
B.1	Introduction		32
B.2	Description of DS 3.x states for the partial DS activation of the access digital section mode of operation.....		32
	B.2.1	State DS 3.0 (partial activation initiated)	32

B.2.2	State DS 3.1 (DS activated, T interface deactivated)	32
B.2.3	State DS 3.2 (DS activated, T interface activating)	32
B.2.4	State DS 3.3 (access activated)	32
B.2.5	State DS 3.4 (LOS/LFA at T)	32
B.2.6	State DS 3.5 (T interface deactivating)	33
B.3	Description of ET 3.x states for the partial activation of the access digital section mode of operation	38
B.3.1	State ET 3.0 (partial activation initiated)	38
B.3.2	State ET 3.1 (DS partially activated, interface at T deactivated)	38
B.3.3	State ET 3.2 (DS partially activated, interface at T activation initiated)	38
B.3.4	State ET 3.3 (DS partially activated, interface at T activated)	38
B.4	Set of primitives within the ET for the support of functions associated with the partial activation of the access digital section	38
Annex C (informative):	Bibliography	39
History	40

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST ETS 300 297 E1:2003](https://standards.iteh.ai/catalog/standards/sist/d3dcf8fa-4eff-4363-8bad-2ebae368035e/sist-ets-300-297-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/d3dcf8fa-4eff-4363-8bad-2ebae368035e/sist-ets-300-297-e1-2003>

Blank page

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST ETS 300 297 E1:2003](https://standards.iteh.ai/catalog/standards/sist/d3dcf8fa-4eff-4363-8bad-2ebae368035e/sist-ets-300-297-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/d3dcf8fa-4eff-4363-8bad-2ebae368035e/sist-ets-300-297-e1-2003>

Foreword

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

Proposed transposition dates	
Date of latest announcement of this ETS (doa):	31 August 1995
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	29 February 1996
Date of withdrawal of any conflicting National Standard (dow):	29 February 1996

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST ETS 300 297 E1:2003](https://standards.iteh.ai/catalog/standards/sist/d3dcf8fa-4eff-4363-8bad-2ebae368035e/sist-ets-300-297-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/d3dcf8fa-4eff-4363-8bad-2ebae368035e/sist-ets-300-297-e1-2003>

Blank page

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST ETS 300 297 E1:2003](https://standards.iteh.ai/catalog/standards/sist/d3dcf8fa-4eff-4363-8bad-2ebae368035e/sist-ets-300-297-e1-2003)

<https://standards.iteh.ai/catalog/standards/sist/d3dcf8fa-4eff-4363-8bad-2ebae368035e/sist-ets-300-297-e1-2003>

1 Scope

This European Telecommunication Standard (ETS) specifies the characteristics of an access digital section for the Integrated Services Digital Network (ISDN) basic access between the user-network interface (at T reference point, as defined in ETS 300 012 [6] and the local exchange (at V₁ reference point defined in CCITT Recommendation Q.512 [4]) supporting the basic access interface channel structure (defined in CCITT Recommendation I.412 [1] and ETS 300 012 [6]) and the additional functions required for operation and maintenance of the access digital section. This ETS is based on CCITT Recommendation G.960 [7].

The requirements of this ETS and subsequently for the transmission systems based on this ETS, satisfy network performance requirements of CCITT Recommendation G.821 on error performance as well as CCITT Recommendations G.801 and I.350 with regard to availability. Annex A to this ETS is normative and specifies requirements for working with the Exchange Termination (ET) and the definition of the ET layer 1 state machine which are outside the scope of this ETS, but nevertheless are important for the understanding of the behaviour of the access digital section.

Annex B specifies an optional procedure for partial activation and deactivation of the access digital section.

Annex C provides a bibliography of informative references used in this ETS.

A further annex is under development which will specify conformance testing for this ETS. This will be added to this ETS using the ETSI standards maintenance procedures.

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 referred applies.

- SIST ETS 300 297 E1:2003
- <https://standards.iteh.ai/catalog/standards/sist/d3dc86a-4eff-4363-8bad-2ebae368035e/sist-ets-300-297-e1-2003>
- [1] CCITT Recommendation I.412 (1988): "ISDN user-network interfaces - Interface structures and access capabilities".
- [2] ETS 300 125 (1990): "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".
- [3] ETR 001 (1990): "Integrated Services Digital Network (ISDN); Customer access maintenance".
- [4] CCITT Recommendation Q.512 (1988): "Exchange interfaces for subscriber access".
- [5] CCITT Recommendation G.114 (1988): "Mean one-way propagation time".
- [6] ETS 300 012 (1991): "Integrated Services Digital Network (ISDN); Basic user-network interface Layer 1 specification and test principles".
- [7] CCITT Recommendation G.960 (1988): "Digital section for ISDN basic rate access".
- [8] ETR 080 (1992): "Transmission and Multiplexing (TM); Integrated Services Digital Network (ISDN) basic rate access Digital transmission system on metallic local lines".
- [9] CCITT Recommendation I.430 (1988): "Basic user-network interface - Layer 1 specification".

3 Definitions and abbreviations

3.1 Definitions

Access: The ISDN customer access as defined in CCITT Recommendation G.960 [7], annex B. The Access consists of the ET, the access digital section and the terminal equipment.

full activation: Activation of the access in order to establish a layer 2 service between the user and the network.

partial activation: Partial activation of the access digital section under control from the ET. No signal shall be sent from the NT1 to the interface at the T reference point, but signals can be received for the activation from the user side.

TE: In this ETS, unless otherwise indicated, the term TE is used to indicate terminating layer 1 aspects of TE1, TA and NT2 functional groups. When the term TE indicates terminating layer 1 aspects of TE1, then, according to CCITT Recommendation I.411, figure 2, the S and T reference points coincide. However, for the purposes of this ETS, the terminology used is in accordance with annex B of CCITT Recommendation G.960 [7].

3.2 Abbreviations

For the purposes of this ETS, the following abbreviations apply.

AI	Action Indicator
DS	access Digital Section
ET	Exchange Termination
FE	Function Element used between the ET and LT
HDLC	High level Data Link Control
INFO	Information element defined at the user-network interface
ISDN	Integrated Services Digital Network
LFA	Loss of Frame Alignment
LOS	Loss Of Signal
LT	Line Termination
MPH	Communication between Management and Physical layer
NT	Network Termination
PH	Communication between data link layer and Physical layer
REG	Regenerator
SIG	Signal between LT and NT1
TE	Terminal Equipment (see also subclause 3.1)

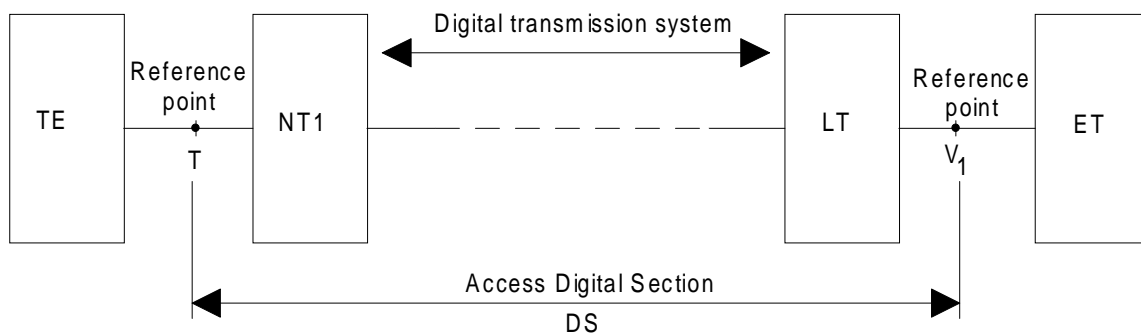
4 Configuration and application

4.1 Configuration

Figure 1 shows the boundaries of the access digital section in relation to the digital system definition.

NOTE 1: From a functional point of view the information transferred via the reference points T and V_1 are different and, therefore, the access digital section is not symmetrical.

NOTE 2: The T and V_1 reference points are defined in CCITT Recommendations I.411 and Q.512 [4].



NOTE 1: Digital transmission system refers to a line system using metallic pairs, optical fibres or radio systems.

NOTE 2: The line transceivers in the Network Termination (NT) and the Line Termination (LT) are part of the digital transmission system.

Figure 1: Access digital section and transmission system boundaries

The concept of the access digital section is used in order to allow a functional and procedural description and a definition of the network requirements.

The concept of a digital transmission system is used in order to describe the characteristics of an implementation, using a specific medium, in support of the access digital section.

4.2 Application

The basic access digital section may be applied as given in figure 2 for:

- direct access to the local exchange (V_1 reference point);
- access via a basic access multiplex equipment (V_5 interface) to the local exchange;
- access via a basic access concentrator (V_5 interface) to the local exchange.

NOTE: Other applications may also be possible and may be defined in the relevant standard, e.g. flexible access network. However, it is assumed that the functionality of the basic access section will be maintained.