



# SLOVENSKI STANDARD

## SIST ETS 300 049 E2:2003

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**Digitalno omrežje z integriranimi storitvami (ISDN) – Paketne nosilne storitve (PMBS) – Nosilne storitve navideznega klica (VC) in stalnega navideznega voda (PVC) v sistemu ISDN prek D-kanala uporabniškega dostopa, osnovne in primarne**

Integrated Services Digital Network (ISDN); ISDN Packet Mode Bearer Service (PMBS); ISDN Virtual Call (VC) and Permanent Virtual Circuit (PVC) bearer services provided by the D-channel of the user access - basic and primary rate

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## Foreword

This European Telecommunication Standard (ETS) has been produced by the Network Aspects (NA) Technical Committee of the European Telecommunications Standards Institute (ETSI).

Annexes A and B are normative, annexes C and D are informative.

Transposition dates	
Date of adoption:	19 December 1997
Date of latest announcement of this ETS (doa):	31 March 1998
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	30 September 1998
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## Introduction

In accordance with CCITT Recommendation I.130 [13], the following three level structure is used to describe the supplementary telecommunication services as provided by European public telecommunications operators under the pan-European Integrated Services Digital Network (ISDN):

- stage 1: is an overall service description, from the user's stand-point;
- stage 2: identifies the functional capabilities and information flows needed to support the service described in stage 1; and
- stage 3: defines the signalling system protocols and switching functions needed to implement the service described in stage 1.

This ETS describes the stage one requirements of the ISDN Packet Mode Bearer Services (PMBS) provided on the D-channel of the user access. Services using the B-channel are covered in ETS 300 048 [4].

The requirements described in this ETS are applicable only to those services within Europe, and are based on ITU-T Recommendation I.232 [17]. This service description corresponds to case B (D-channel) of ETS 300 007 [1] (the European equivalent to ITU-T Recommendation X.31 [11]).

The requirements for stage three of these services are contained in ETS 300 007 [1].

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## 1 Scope

This European Telecommunication Standard (ETS) defines stage one of the ISDN Packet Mode Bearer Service (PMBS) provided on the D-channel of the user access for the pan-European Integrated Services Digital Network (ISDN) as provided by European public telecommunications operators. Stage one is an overall service description from the user's point of view (see CCITT Recommendation I.130 [13]), but does not deal with the details of the human interface itself.

This ETS makes use of ETS 300 007 [1], which is a stage three standard, in order to provide a description of the procedures. This mechanism would not normally be used in a stage one standard.

In addition, this ETS specifies the base functionality where the service is provided to the user via a private ISDN.

This ETS does not define details of the interworking requirements of private ISDNs with the public ISDN.

This ETS does not specify the additional requirements where the service is provided to the user via a telecommunications network that is not an ISDN but does include interworking requirements of other networks with the public ISDN.

Charging principles are outside the scope of this ETS.

The ISDN Virtual Call (VC) and Permanent Virtual Circuit (PVC) bearer service category provides the unrestricted transfer (without alteration) of user information in a packetized manner over a virtual circuit between reference points via the basic and primary rate access. Each of the reference points can be either an S or coincident S and T reference point.

NOTE: Network operators can also provide information transfer with the same attributes where the reference point is T.

The ISDN VC and PVC bearer service category is described in ITU-T Recommendation I.232 [17].

This ETS is applicable to the stage three standards for the ISDN PMBS. The term "stage three" is also defined in CCITT Recommendation I.130 [13]. Where the text indicates the status of a requirement (i.e. as strict command or prohibition, as authorization leaving freedom, or as a capability or possibility), this shall be reflected in the text of the relevant stage three standards.

Furthermore, conformance to this ETS is met by conforming to the stage three standards with the field of application appropriate to the equipment being implemented. Therefore no method of testing is provided for this ETS.

## 2 Normative references

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

- [1] ETS 300 007 (1991): "Integrated Services Digital Network (ISDN); Support of packet-mode terminal equipment by an ISDN".
- [2] ETS 300 011 (1992): "Integrated Services Digital Network (ISDN): Primary rate user-network interface - Layer 1 specification and test principles".
- [3] ETS 300 012 (1992): "Integrated Services Digital Network (ISDN): Basic user-network interface - Layer 1 specification and test principles".
- [4] ETS 300 048 (1992): "Integrated Services Digital Network (ISDN); ISDN Packet Mode Bearer Services (PMBS); ISDN Virtual Call (VC) and Permanent Virtual Circuit (PVC) bearer services provided by the B-channel of the user access - basic and primary rate".

- [5] ETS 300 099: "Integrated Services Digital Network (ISDN); Specification of the Packet Handler access point Interface (PHI)".
- [6] ETS 300 402-2 (1995): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1); User-network interface data link layer; Part 2: General application protocol specification [ITU-T Recommendation Q.921 (1993), modified]".
- [7] ETS 300 403-1 (1995): "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1); User-network interface layer 3 specification for basic call control; Part 1: Protocol specification [ITU-T Recommendation Q.931 (1993), modified]".
- [8] ITU-T Recommendation X.1 (1993): "International user classes of service in, and categories of access to, public data networks and Integrated Service Digital Networks (ISDNs)".
- [9] ITU-T Recommendation X.2 (1993): "International data transmission services and optional user facilities in public data networks and ISDNs".
- [10] ITU-T Recommendation X.25 (1993): "Interface between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit".
- [11] ITU-T Recommendation X.31 (1993): "Support of packet mode terminal equipment by an ISDN".
- [12] ITU-T Recommendation I.112 (1993): "Vocabulary of terms for ISDNs".
- [13] CCITT Recommendation I.130 (1988): "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".  
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- [14] CCITT Recommendation E.164 (1991): "Numbering plan for the ISDN era".
- [15] CCITT Recommendation E.165 (1988): "Timetable for co-ordinated implementation of the full capability of the numbering plan for the ISDN era (E.164)".
- [16] ITU-T Recommendation I.210 (1993): "Principles of telecommunication services supported by an ISDN and the means to describe them".
- [17] CCITT Recommendation I.232 (1988): "Packet mode bearer services categories".
- [18] CCITT Recommendation X.121 (1992): "International numbering plan for public data networks".

### 3 Definitions and abbreviations

#### 3.1 Definitions

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

**Integrated Services Digital Network (ISDN):** See ITU-T Recommendation I.112 [12], subclause 2.3, definition 308.

**service; telecommunications service:** See ITU-T Recommendation I.112 [12], subclause 2.2, definition 201.

**Supplementary Service (SS):** See ITU-T Recommendation I.210 [16], subclause 2.4.

**Virtual Call (VC):** See ITU-T Recommendation X.25 [10], clause 3. Instead of "virtual call" also the term "X.25 call" is used in this ETS.

**Permanent Virtual Circuit (PVC):** See ITU-T Recommendation X.25 [10], clause 3.

**customized service profile:** A set of individual service data allocated per ISDN-number for a period of time to a subscriber registered at the PH. This data includes:

- **an access profile:** ETS 300 007 [1]-related data (e.g. notification class, access method),
- **an X.25 service profile:** ITU-T Recommendation X.25 [10], layers 2 and 3 related data.

**standard service profile:** A set of service data predefined at the PH for subscribers not requiring a fully individual service profile. The standard service profile comprises just the ITU-T Recommendation X.25 [10]-related data. The other part of the service data (the access profile) can still be allocated individually at subscription time.

See annex A for the standard service profile applicable for users subscribing to D-channel access.

**default service profile:** A set of service data which applies for subscribers not registered at the PH. This default service profile may be network specific, and includes both, the ETS 300 007 [1]-related data (access profile) and ITU-T Recommendation X.25 [10]-related data (X.25 service profile).

See annex C for the proposed default service profile.

**packet handler, PH:** See ETS 300 007 [1].

**Packet Mode Bearer Service-D:** Basic ISDN PMBS provided by the D-channel.

**semi-permanent data link:** A data link, whose layer 2 address is allocated at subscription time, and which is permanently established and kept available by the network between the TE and the PH independent of X.25 calls (VC, PVC).

**Preallocated Logical Link (PLL)** (called Permanent Logical Link in edition 1 of this ETS): A data link, whose layer 2 address is allocated at subscription time, and which is established/released on-demand by the user or the network between the TE and the PH dependent on X.25 calls (VC).

**long-duration PLL:** A data link, whose layer 2 address is allocated at subscription time, and which is established on-demand by the user between the TE and the PH independent of X.25 calls (VC, PVC).

**switched data link:** A data link, whose layer 2 address is assigned at link activation time, and which is established/released on-demand by the user or the network between the TE and the PH, dependent on X.25 calls (VC).

**ISDN number:** A number conforming to the numbering plan and structure specified in CCITT Recommendation E.164 [14].

**CRF-S:** Connection Related Function (in the local exchange) to which Subscribers are connected. See ETS 300 099 [5] for a more detailed description.

### 3.2 Abbreviations

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

AP	Access Profile
CRF-S	Connection Related Function
CUG	Closed User Group
DDI	Direct Dialling In
DSS1	Digital Subscriber Signalling System N0. one
DTE	Data Terminal Equipment
FH	Frame Handler
ISDN	Integrated Services Digital Network
LAPB	Link Access Procedure Balanced

LAPD	Link Access Procedure on the D-channel
MSN	Multiple Subscriber Number
NPI	Numbering Plan Identifier
NT 2	Network Termination 2
NUI	Network User Identification
OAM	Operation And Maintenance
OSI	Open Systems Interconnection
PH	Packet Handler
PHI	Packet Handler access point Interface
PLL	Preallocated Logical Link
PMBS	Packet Mode Bearer Services
PRA	Primary Rate Access
PSPDN	Packet Switched Public Data Network
PISN	Private Integrated Services Network
PVC	Permanent Virtual Circuit
SAPI	Service Access Point Identifier
TA	Terminal Adaptor
TE	Terminal Equipment
TEI	Terminal Endpoint Identifier
TOA	Type Of Address
VC	Virtual Call

## 4 Description

This service is described in respect of both the point-to-multipoint and the point-to-point access configurations. This covers the passive bus and Network Termination 2 (NT2) access arrangements.

These packet mode bearer services allow users (e.g. terminals) in a point-to-point communication configuration to communicate via the ISDN using ITU-T Recommendation X.25 [10] encoding, by means of procedures over a D-channel in both directions continuously and simultaneously, for the duration of a call as described in ETS 300 007 [1] (ITU-T Recommendation X.31 [11]).

No distinct user class is defined for the D-channel at 16 kbit/s. The use of class 30 may be available if the primary rate access (D-channel at 64 kbit/s) is offered.

NOTE: In case of access via a Terminal Adaptor (TA), the following user classes are supported at the R-reference points: 8-10, and in addition 11 and 13 on a D<sub>64</sub>-channel (see ITU-T Recommendation X.1 [8]).

## 5 Procedures

### 5.1 Provision and withdrawal

#### 5.1.1 General

The ISDN VC and PVC bearer services shall be either provided by prior arrangement with the service provider or be available on a general basis. In the latter case, a default service profile applies (see annex C for a PMBS-D default service profile).

Networks may offer either or both B-channel and D-channel VC- and PVC-bearer services on a general basis.