



SLOVENSKI STANDARD
SIST ETS 300 099 E2:2003
01-december-2003

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Integrated Services Digital Network (ISDN); Specification of the Packet Handler access point Interface (PHI)

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Ta slovenski standard je istoveten z: ^{SIST ETS 300 099 E2:2003} **ETS 300 099 Edition 2**
<https://standards.iteh.ai/catalog/standards/sist/16447a17-7a42-44d9-80d0-ca307b26b6da/sist-ets-300-099-e2-2003>

ICS:

33.080	Digitalno omrežje z integriranimi storitvami (ISDN)	Integrated Services Digital Network (ISDN)
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EUROPEAN
TELECOMMUNICATION
STANDARD

ETS 300 099

April 1998

Second Edition

Source: NA

Reference: RE/NA-023206

ICS: 33.020

Key words: Access, interface, ISDN, PHI

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Foreword

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

In accordance with CCITT Recommendation I.130, the following three level structure is used to describe the telecommunications services 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 standpoint;
- 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 defines a network-internal interface for the provision of ISDN packet mode services as defined in ETS 300 048 [7] (derived from CCITT Recommendation I.232 [16]), ETS 300 049 [8] (derived from CCITT Recommendation I.232 [16]) (stage 1) and ETS 300 007 [20] (derived from ITU-T Recommendation X.31 [19]) (stage 3).

In addition, this ETS defines the network-internal interface for the provision of packet services in Global System for Mobile communication (GSM) Public Land Mobile Networks (PLMNs) (see ETS 300 603 [21]).

NOTE 1: The term ISDN packet mode services is used in a way as to include both case B (ISDN Packet Mode Bearer Services (PMBSs)) and case A (PSPDN services), see ETS 300 007 [20].

NOTE 2: No stage 2 service description existed at the time this ETS was prepared.

NOTE 3: The PLL service described in ETS 300 049 [8] and supported by this ETS is not explicitly mentioned in ETS 300 007 [20].

NOTE 4: For case A services described in ETS 300 007 [20] and supported by this ETS, no stage 1 service description exists.

Transposition dates

Date of adoption of this ETS:	6 March 1998
Date of latest announcement of this ETS (doa):	31 July 1998
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 January 1999
Date of withdrawal of any conflicting National Standard (dow):	31 January 1999

Overview of the main changes from edition 1 of this ETS

Following is a list of main technical changes from edition 1 of this ETS. Other editorial changes have also been made during the creation of this second edition, details are not given here:

- use of the Packet Handler access point Interface (PHI) for Public Land Mobile Network (PLMN) (clause 1);
- removal of the detailed selection mechanism for incoming calls (subclause 5.3.3 and former annex K);
- alignment with ETS 300 048 [7] edition 2 and ETS 300 049 [8] edition 2, including the new long duration Preallocated Logical Link (PLL) and switched long duration B-channel access methods (subclauses 5.1 and 5.4, table 57);
- relaxation of Bd-channel loading criteria (subclauses 6.3.3.1 and 8.3.2.2.2, former 12.4.3.3);
- both-way management frame continuity check procedures becomes default (subclause 9.7);
- corrections in the PLL and semi-permanent access method registration procedures and formats (subclause 11.4, table 49);
- exception reporting in the Bd-channel (subclauses 12.3.1.3, 12.4.2.2 and 12.4.1.2);
- the "Additional subscriber identity" information element contains the Terminal Endpoint Identifier (TEI) (tables 45 and 54);
- annex E (Switchover and concentration procedures) becomes normative (but optional);
- annex F (Reset procedures) becomes normative (but optional);
- corrections in management frame continuity check SDLs (annex J);
- management flow procedures (new annex K);
- support of Private Telecommunication Networks (PTNs), including Bd-channels between PTN and Packet Handler (PH) (new annex L).

1 Scope

Implementation alternatives for ISDN packet mode services and applicability of this European Telecommunication Standard (ETS).

This ETS defines a network-internal interface for the provision of ISDN packet-mode services.

The term ISDN packet mode services is defined in such a way as to include both case B (ISDN Packet Mode Bearer Services (PMBS)), and case A (PSPDN services), as defined in ETS 300 007 [20].

If a specific implementation alternative for the provision of PMBS and PSPDN is used in an ISDN or a Global System for Mobile communication (GSM) Public Land Mobile Network (PLMN), this ETS applies. The implementation alternatives and the exact location of the interface are described below.

In CCITT Recommendation I.324 [6] local Connection Related Function (CRF) and Packet-Handling Function (PHF) are defined as being involved in the provision of PMBS. The local CRF includes the Exchange Termination (ET). Two basic implementation alternatives are mentioned in subclause 3.1.2 of CCITT Recommendation I.324 [6] and in ETS 300 007 [20]:

- 1) the PHF is integrated in the local CRF; and
- 2) the PHF is not part of the local CRF.

NOTE 1: Local CRF and PHFs are implemented with different physical equipment and in a multi-vendor environment. In addition, the Packet Handler (PH), although logically belonging to the ISDN, may be physically part of the PSPDN.

In the first case, the interface between ET and PHFs can be kept internal and proprietary. In the second case, a standardized interface between local CRF and PHFs is required. This ETS defines a manufacturer-independent interface between the local CRF and PHFs. The interface is called the Packet Handler access point Interface (PHI).

If the second implementation alternative is chosen for the provision of packet mode services in an ISDN, this ETS applies for the implementation of the PHI. The existence of this ETS does, however, not preclude the choice of the first implementation alternative in an ISDN.

Considerations for the use of the PHI in private networks and interworking between private and public networks are outside the scope of this ETS. The PHI is a network-internal interface to be used in public networks.

ISDN packet mode services supported

The full scope of services defined in ETS 300 048 [7] and ETS 300 049 [8] (case B) and in ETS 300 007 [20] (cases A and B) is supported by the PHI specification, see clause 5 for details. Subclause 5.4 contains a table giving an overview of the services, references to the relevant sections of the PHI specification and a conformance statement.

The PHI specification uses the term Packet Handler (PH) in both case A and case B services. For case A services, the PH assumes the role of the Access Unit (AU), see ETS 300 007 [20].

No other services are supported by the PHI specification.

Local and remote access to the PHI

The PHI denotes the interface between the PH and the CRF it is directly connected to (called CRF-P, see subclause 4.3). At least in the initial phase of service offerings it can be expected that the number of local exchanges in an ISDN exceeds the number of packet handlers. The PHI will thus also have to support subscribers accessing it remotely, i.e. subscriber and PH are connected to different CRFs.