



# **T**ELENOR **S**PECIFICATION

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## **Specification of the network side of the ISDN Virtual Circuit Service for ISDN Basic Access (BA) and Primary Rate Access (PRA)**

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## 1 Scope

This specification describes the network implementation of the ISDN Virtual Circuit Service for the ISDN Basic Access (BA) and Primary Rate Access (PRA), in the public ISDN of Telenor. The purpose of this document is to inform suppliers of user equipment about the characteristics of the user-network interface, to which ISDN user equipment can be attached.

This specification is supplemented by a number of specifications (A43-x) which describe various aspects of the technical characteristics of the ISDN user-network interface. An overview of the specifications which are relevant for the ISDN Virtual Circuit Service is given in clause 7 of this document.

This specification, which covers the ISDN packet mode service, and the Telenor Nett Specifications A41 [1] and A42 [2], which covers the ISDN circuit mode services, together with their related specifications (A41-x and A42-X) describe in total the technical characteristics of the network side of the ISDN user-network interface.

## 2 References

### 2.1 Normative references

- [1] Telenor Nett Specification A41: «Specification of the network side of the user-network interface for ISDN Basic Access (BA)».
- [2] Telenor Nett Specification A42: «Specification of the network side of the user-network interface for ISDN Primary Rate Access (PRA)».
- [3] ETS 300 125 (1991): «Integrated Service Digital Network (ISDN); User-network interface data link layer specification; Application of CCITT Recommendations Q.920/I.440 and Q.921/I.441».
- [4] ETS 300 102-1 (1990): «Integrated Services Digital Network (ISDN); User-network interface layer 3; Specifications for basic call control».
- [5] ETS 300 102-2 (1990): «Integrated Services Digital Network (ISDN); User-network interface layer 3; Specifications for basic call control; Specification Description Language (SDL) diagrams».
- [6] prETS 300 048 (1991): «Integrated Services Digital Network (ISDN); ISDN Packet Mode Bearer Services: ISDN Virtual Call (VC) and Permanent Virtual Call (PVC) bearer services provided by the B-channel of the user access - basic and primary rate».

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- [7] prETS 300 049 (1991): «Integrated Services Digital Network (ISDN); ISDN Packet Mode Bearer Services: ISDN Virtual Call (VC) and Permanent Virtual Call (PVC) bearer services provided by the D-channel of the user access - basic and primary rate».
- [8] prETS 300 007 (1991): «Integrated Services Digital Network (ISDN); Support of packet mode terminal equipment by an ISDN».
- [9] ETS 300 099 (1992): «Integrated Services Digital Network (ISDN); Specification of the Packet Handler Access Point Interface (PHI)».

## 2.2 Informative references

None.

## 3 Definitions and abbreviations

### 3.1 Definitions

**User:** The DSS1 protocol entity at the user side of the user-network interface.

**Network:** The DSS1 protocol entity at the network side of the user-network interface.

**User Equipment:** An equipment that can be connected to the user's side of the ISDN user-network interface.

### 3.2 Abbreviations

AXE:	Exchange system produced by Ericsson
DSS1:	Digital Subscriber Signalling System No. one
ETS:	European Telecommunication Standard, issued by ETSI
ETSI :	European Telecommunication Standards Institute
ISDN:	Integrated Services Digital Network
NPT:	Norwegian Post and Telecommunications Authority
PDN	Packet Data Network (X.25)
PHI:	Packet Handler Interface
PMBS:	Packet Mode Bearer Services
PLL:	Permanent Logical Link
PVC:	Permanent Virtual Circuit
SVC:	Switched Virtual Circuit
S12:	Exchange system produced by Alcatel (System 12)

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#### **4 CPE conformity assessment procedures**

Refer *Directive 99/5/EC of the European Parliament and of the Council relating radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity – R&TTE directive*.

#### **5 General information about the public ISDN of Telenor**

Telenor Nett provides ISDN services based on the network infrastructure implemented in Alcatel's S12 exchanges and Ericsson's exchanges. While the «basic call» part of the DSS1 layer 2 complies to ETS 300 125 [3], the DSS1 layer 3 protocol complies to ETS 300 102-1 [4] and ETS 300 102-2 [5] in both systems. It is intended that this specification, together with its associated specifications, shall describe the functionality provided by both the AXE and S12 systems.

Generally, the functionality of the public network will be upgraded at certain times. In some cases this may affect the functionality of user equipment. In due time before such upgrades takes place, Telenor Nett will inform the suppliers of user equipment about the content of the network upgrade. This will allow suppliers to prepare their user equipment for the new functionality offered by the network.

#### **6 ISDN Virtual Circuit Service – overall choices**

Telenor Nett's requirements for implementation of the ISDN Virtual Circuit Service are based on the relevant ETSI standards, which are:

- prETS 300 048 [6] and prETS 300 049 [7] which are an overall service description for the provisioning of the bearer services on the D- and B-channel as seen from the users standpoint.
- prETS 300 007 [8] which defines the signalling system protocols and switching functions needed to implement the service described in the overall service descriptions.
- ETS 300 099 [9] which defines a network-internal interface (Packet Handler Interface, PHI) for the provisioning of the ISDN packet mode services as defined in the overall service descriptions and in prETS 300 007 [8].

The ETSI standards describe several options for provisioning of the ISDN Virtual Circuit service. This specification together with the related specifications describe in total the detailed choices of options and the technical implementation at the user-network interface.

This specification covers the case B alternative (ISDN packet mode bearer services, PMBS) described in prETS 300 007 [8]. The case A alternative (PDN service) is outside scope of this specification.

All the options implemented in the network are not necessarily offered in the commercial PMBS service.

For the case B alternative, the following main options are supported:

- B-channel (ref. prETS 300 048 [6])

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- Method 1 - Semi-permanent layer 2, SVC and PVC
- Method 2 - On demand layer 2, SVC

Supported on BA and PRA

Method 1 is supported for registered users. Method 2 is supported for both registered and non-registered users.

- D-channel (ref. prETS 300 049 [7]).
  - Method 1 - Semi-permanent layer 2, SVC
  - Method 2 - On demand layer 2 with fixed TEI values, SVC

Method 2 is called PLL in ETS 300 099 [9].

Supported on BA and PRA

The D-channel is supported for registered users.

- Combination of the B- and D-channel

This option makes it possible to have different combinations of B- and D-channel subscriptions on the same subscriber number.

## 7 Overview of related Telenor Nett Specifications

This specification is supplemented by a number of specifications (A43-x) which describe the technical details for the ISDN Virtual Circuit Service.

Telenor Nett Specification A43-1: «Specification of the bearer services provided by the B-channel of the user access - basic and primary rate».

Telenor Nett Specification A43-2: «Specification of the bearer services provided by the D-channel of the user access - basic and primary rate».

Telenor Nett Specification A43-3: «Specification of the support of packet-mode terminal equipment by an ISDN access – basic and primary rate».

Telenor Nett Specification A43-4: «Specification of the network's handling of supplementary services, number information and profile selection».

In addition, the technical details on layer 1 (physical layer) and layer 2 (link layer) are contained in the specifications describing the ISDN circuit mode implementation:

Telenor Nett Specification A41-1: «Specification of the network side of the user-network interface for ISDN Basic Access (BA) - physical layer (layer 1)».

Telenor Nett Specification A41-2: «Specification of the network side of the user-network interface for ISDN Basic Access (BA) - data link layer (layer 2)».

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- Telenor Nett Specification A42-1: «Specification of the network side of the user-network interface for ISDN Primary Rate Access (PRA) - physical layer (layer 1)».
- Telenor Nett Specification A42-2: «Specification of the network side of the user-network interface for ISDN Primary Rate Access (PRA) - data link layer (layer 2)».

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## 8 HISTORY

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1.0	01.09.1998	First stable version
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