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Foreword

This draft second edition European Telecommunication Standard (ETS) has been produced by the Business TeleCommunications (BTC) Technical Committee of the European Telecommunications Standards Institute (ETSI) , and is now submitted for the Unified Accelerated procedure phase of the ETSI standards approval procedure.

The contents of this ETS supersede CEN/CENELEC ENV 41007-1 (1991) "Definition of terms in private telecommunication networks; Part 1: Definition of general terms". ENV 41007-1 should be regarded as obsolete.

Proposed transposition dates	
Date of latest announcement of this ETS (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

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1 Scope

This draft second edition European Telecommunication Standard (ETS) defines terms commonly used in ETSs on the subject of Private Integrated Services Networks (PISNs). The purpose of defining terms and definitions is to guide the further specification of PISN capabilities and to permit consistency of interpretation between ETSs containing such specifications.

The terms and definitions given in this ETS apply to the technical aspects of PISNs. They do not address legal or regulatory issues.

An ETS shall be deemed to be in compliance with this ETS if it uses terms with the meanings as defined by this ETS.

Terms not defined here may be defined context-specific in the relevant standards or technical reports.

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.

[1] CCITT Recommendation E.164 (1991): "Numbering plan for the ISDN era".

3 Abbreviations

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

ANF	Additional Network Feature
CN	Corporate telecommunication Network
HDB	Home Data Base
ICN	InterConnecting Network
IPC	Inter-PINX Connection
IPL	Inter-PINX Link
ISCTX	Integrated Services CenTralized eXchange
ISDN	Integrated Services Digital Network
ISPBX	Integrated Services Private Branch eXchange
IVN	InterVening Network
PINX	Private Integrated services Network eXchange
PISN	Private Integrated Services Network
PNP	Private Numbering Plan
PSTN	Public Switched Telephone Network
TE	Terminal Equipment
VDB	Visitor Data Base
VPN	Virtual Private Network

4 Terms and definitions

The following subclauses are arranged in logical order. An alphabetical index is to be found at the end of this ETS.

NOTE: Draft IEC 50(715) has been used as the basis for the preparation of this ETS. The suitability of other definitions of that document will be considered as a subject arises.

4.1 Public

An attribute indicating that the application of an item qualified by "public", e.g. a network, a unit of equipment, a service, is offered to the general public. This attribute does not indicate any aspects of ownership.

NOTE: This definition does not include legal or regulatory aspects.

4.2 Private

An attribute indicating that the application of an item qualified by "private", e.g. a network, a unit of equipment, a service, is offered to a pre-determined set of users. This attribute does not indicate any aspects of ownership.

NOTE: This definition does not include legal or regulatory aspects.

4.3 Private Integrated Services Network (PISN)

A network serving a pre-determined set of users (different from a public network which provides services to the general public). The attribute "private" does not indicate any aspects of ownership.

NOTE 1: This definition does not include legal or regulatory aspects.

NOTE 2: PISNs may extend over large geographical areas. This definition does not imply any specific implementation.

NOTE 3: In facilitating the evolution towards the consistent world-wide use of the term "PISN", the previously used term "Private telecommunication network (PTN)" is superseded by the term "PISN". This will not invalidate the scope of the services standardized by ETSI for PTNs.

4.4 Corporate telecommunication Network (CN)

The same definition as for subclause 4.3, "Private Integrated Services Network (PISN)", applies. Annex B provides additional information.

4.5 Private Integrated services Network eXchange (PINX)

A PISN nodal entity that provides automatic switching and call handling functions used for the provision of telecommunication services. The nodal entity can be implemented by one or more pieces of equipment located on the premises of the private network administrator or by equipment co-located with, or physically part of, a public network.

NOTE 1: If applicable, a PINX provides to users of the same and/or other private integrated services network exchanges:

- telecommunication services within its own area; and/or
- telecommunication services from the public ISDN; and/or
- telecommunication services from other public or private networks; and/or
- within the context of a PISN, telecommunication services from other PINXs.

NOTE 2: In facilitating the evolution towards the consistent world-wide use of the term "PINX", the previously used term "Private telecommunication network exchange (PTNX)" is superseded by the term "PINX". This will not invalidate the scope of the services standardized by ETSI for PTNs.

A PINX may perform the functions of one or more of the node types given in subclauses 4.5.1 and 4.5.2.

4.5.1 Integrated Services Private Branch eXchange (ISPBX)

The implementation of a PINX offering ISDN-like capabilities, separate from public network equipment.

NOTE: An ISPBX is usually located on the premises of a private network administrator.

4.5.2 Integrated Services CenTralized eXchange (ISCTX)

The implementation of a PINX offering ISDN-like capabilities, as part of public network equipment.

NOTE: An ISCTX is usually located on the premises of a public network operator.

4.6 Call related PINX functionality

In addition to other functionalities, a physical implementation of a PINX can contain one or more of the functionalities defined below. The use of the terms "end-PINX", "transit-PINX" and "gateway-PINX" depends on the particular context. Thus, these terms are not defined in this ETS.

NOTE: The involvement in the execution of services is described in the standards on the services concerned.

4.6.1 End-PINX functionality

Within the context of a call the functionality of a PINX required to provide attachment and servicing of terminals.

NOTE: This functionality can be further separated into originating (end-)PINX functionality (support of the calling user) and terminating (end-)PINX functionality (support of the called user).

4.6.2 Transit-PINX functionality

Within the context of a call the functionality of a PINX required to interconnect end-PINXs and/or other transit-PINXs and/or gateway-PINXs.

4.6.3 Gateway-PINX functionality

Within the context of a call the functionality of a PINX required to interconnect end-PINXs or transit-PINXs with nodes of other public or private networks.

NOTE: This functionality can be further separated into incoming gateway-PINX functionality (support of calls incoming to the PISN) and outgoing gateway-PINX functionality (support of calls outgoing from the PISN).

4.7 Terminal Equipment (TE)

An item of equipment attached to a telecommunication network to provide access for a user to one or more services.

4.8 Link

A means of telecommunication with specified characteristics between two points.

4.8.1 Inter-PINX Link (IPL)

A link between two PINXs comprising the totality of signalling and user information transfer means.

NOTE: More than one inter-PINX link can be established between the same pair of PINXs.

4.8.2 Access link

A link between a TE and a PINX comprising the totality of signalling and user information transfer means.

NOTE 1: More than one access link can be established between the same TE and its PINX.

NOTE 2: Access links between several TEs and a PINX may share the same means of transmission.

4.9 User

An entity using the services of a network via terminal equipment.

NOTE: A user may be a person or an application process.

4.10 PISN administrator

An authority responsible for the provision and management of a private integrated services network.

NOTE: This term supersedes the previously used term "private network administrator" without invalidating standards using this term.

4.11 InterVening Network (IVN)

Any means of providing inter-PINX connections for the purpose of interconnecting two or more PINXs.

NOTE: Examples of an intervening network are dedicated transmission systems and the public ISDN.

4.12 InterConnecting Network (ICN)

That part of the public network equipment which provides a set of functions needed to interconnect PINXs. The functionality of the ICN includes transit-PINX functionality, associated transmission capabilities and may include gateway-PINX functionality.

4.13 Virtual Private Network (VPN)

That part of a CN that uses shared switched network infrastructures provided by one or more third parties. Annex B provides additional information.

NOTE 1: The functionality provided by a VPN includes transit-PINX functionality and/or end-PINX functionality.

NOTE 2: ISCTX and ICN are examples of VPN components.

4.14 Connection

A concatenation of transmission channels or telecommunication circuits, switching and other functional units, set up to provide for the transfer of information between two or more points in a telecommunication network.

NOTE 1: This definition is adapted from CCITT Vol. I, Fascicle I.3 (1988).

NOTE 2: An overview of the dependencies of connection establishment on service provision and communication needs is given in annex A.

4.14.1 Dedicated connection

A connection permanently established. If the transmission capabilities are provided by a third party, the connection shall be established for the duration of a contractual period.

4.14.2 Semi-permanent connection

A connection provided by a switched network and whose resources are reserved for specified times during a contractual period (i.e. a planned grade of service of 100 % during the reservation time).

NOTE: The actual usage of the resources may require an establishment procedure performed by the user of the connection.

4.14.3 Switched connection

A connection whose resources are provided to the user on request with a planned grade of service of less than 100 %.

4.14.3.1 Switched connection, per call

A switched connection whose establishment and disestablishment are initiated by a single communication request.

4.14.3.2 Switched connection, long duration

A switched connection whose establishment and disestablishment are initiated by a user independently of a specific communication request, and that thus can be used for multiple, consecutive instances of communication.

4.15 Inter-PINX Connection (IPC)

A point-to-point connection between two PINXs of one or different PISN(s) to support inter-PINX communication.

NOTE: The information conveyed may be inter-PINX signalling information or user information or both.

4.16 Public Integrated Services Digital Network (public ISDN)

A public telecommunication network that supports public ISDN services.

NOTE: See ETR 076 for a list of standards on public ISDN bearer services, teleservices and supplementary services.

4.17 (PISN) Service

A set of functions offered to a (PISN) user by the private network administrator.

NOTE: This definition is adapted from CCITT Vol. I, Fascicle I.3 (1988).

4.18 Additional Network Feature (ANF)

A set of functions supporting services above those required for a basic call. The customer for these services can be any entity within the network, i.e. any entity other than a user.

4.19 (PISN networking) Scenario

The arrangement for interconnecting two PINXs.

4.19.1 Overlay scenario

A scenario in which the services provided by the PISN overlay any services of the network acting as the IVN.

4.19.2 Integrated scenario

A scenario in which PINXs are interconnected by means of an ICN.

4.20 Numbering and addressing

The following subclauses define terms used in the context of numbering and addressing for PISNs.

4.20.1 Address

Formalized information used to unambiguously indicate an identifiable entity.

4.20.2 Number

An address restricted to containing numerical values, as defined by a numbering plan.

4.20.2.1 Private Numbering Plan (PNP) number

A number defined by a PNP.

4.20.2.2 PISN number

A number defined by a PISN numbering plan.

4.20.3 Numbering plan

A plan allocating numbers to the addressable entities of its domain.

4.20.3.1 ISDN numbering plan

The numbering plan explicitly relating to the global ISDN domain, as defined in CCITT Recommendation E.164 [1].

4.20.3.2 Private Numbering Plan (PNP)

The numbering plan explicitly relating to a particular private numbering domain, defined by the administrator of that domain.

4.20.3.3 Unknown numbering plan

The numbering plan reflecting a dialling plan which is implicitly based on a particular numbering domain, as defined by the administrator of that domain.

NOTE: A dialling plan defines the sequence of digits in a context-specific way, e.g. as seen from the hierarchical level of an originator of a call to the hierarchical level of the destination of a call. To this purpose, a dialling plan and an unknown numbering plan, can include prefixes.

4.20.3.4 PISN numbering plan

The generic designation for the numbering plan(s) chosen as native by a PISN administrator for the administrator's particular PISN.

4.21 (PISN) Mobility

This term describes the ability of users to move location and still be able to use the services provided to them by the PISN. This can be either by means of radio systems which enable the terminal to be used at various locations, or by means of users being able to register their presence at terminals which have a fixed location in the PISN. A combination of these (e.g. a user having a "fixed" terminal registering with a "mobile" terminal) is not precluded.

The following definitions are used in association with PISN mobility, however, this use is not exclusive to PISN mobility.

4.21.1 Authentication

The process of validating an identity, e.g. of a user, of a terminal, or of a network.

4.21.2 Coverage area

The area over which cordless communication can be established and maintained.

4.21.3 Visitor area

The coverage area of a visitor database.

4.21.4 Handover

The process of switching, during a call in progress on a particular terminal, from one physical channel to another physical channel.

4.21.5 Roaming

The movement, without a call being in progress, of a cordless terminal or a mobile user from one coverage area to another coverage area.

4.21.6 Home Data Base (HDB)

The database in which the data on the current location and associated parameters of a cordless terminal or a mobile user are stored.

4.21.7 Visitor Data Base (VDB)

The database in which location information concerning a cordless terminal or a mobile user is stored, as long as the cordless terminal or the mobile user are localized in the corresponding visitor area.

Annex A (informative): Relationship between communication needs, service provision and connection establishment

Figure A.1 shows the relationship between types of service usage, types of service provision and types of connection establishment.

The figure shows a straight-forward array only, i.e. it does not explicitly show the usage of one connection by another one as with the ISDN packet mode bearer services, where a circuit mode connection is used by an overlaying packet mode connection.

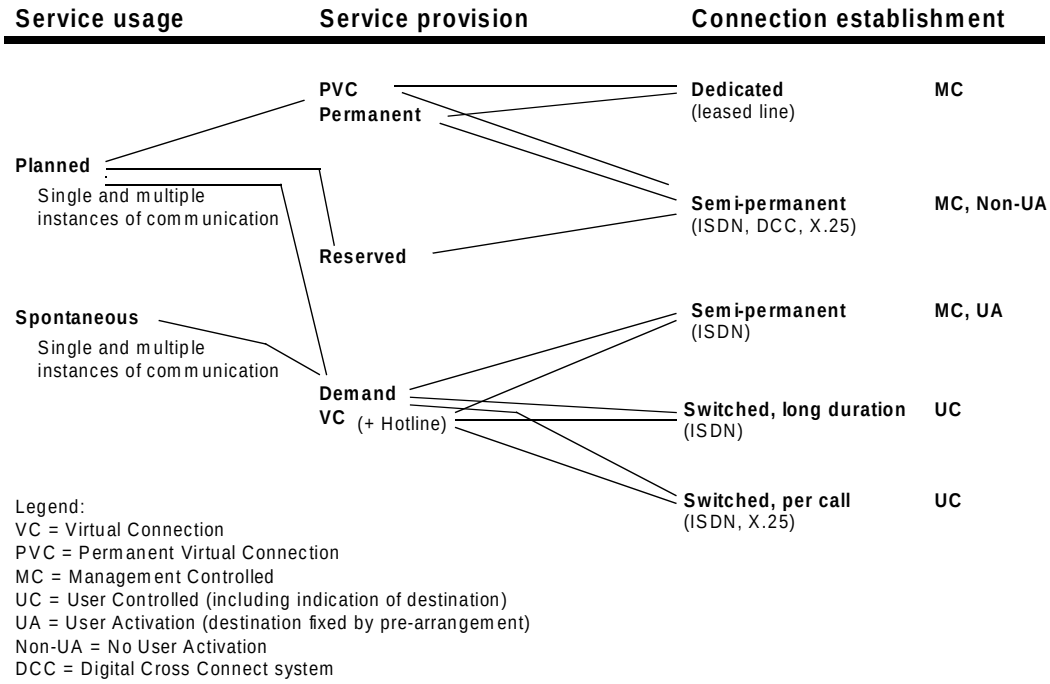

Figure A.1: Relationship between communication needs, service provision and connection establishment

Communication needs (the usage of a service) between parties can be either planned or spontaneous. Either need may apply to a single instance of communication or to multiple instances of communication in series.

To cope with these communication needs, services can be provided on a permanent, on a reserved, or on a demand basis.

These services can be supported by dedicated, semi-permanent, or switched connections.

Annex B (informative): Additional information

This annex provides additional information to describe aspects relating to VPNs and CN.

B.1 Virtual Private Network (VPN)

VPNs aspects are divided into "VPN architecture" and "VPN services".

The **"VPN architecture"** enables:

- the shared switched network infrastructure to take the place of the traditional analogue or digital leased lines and the function of the transit node irrespective of the network type whether it be, for example, the Public Switched Telephone Network (PSTN), ISDN, mobile communication network, or a separate network;

- the customer premises to be served in terms of end node functionality with any combination of, e.g., PBX, centrex, LAN router, or multiplexer; and

- the CN user to be served by terminal equipment connected to end node functionality residing on customer premises, or provided by public network equipment.

The VPN architecture in one network, or multiple networks, can comprise a part of the total national or international CN.

"VPN services" offered by the shared switched network infrastructure provide:

- VPN end-user services to CN users;

- VPN networking services to support the interconnection of PINXs;

- service interworking functionality;

- inter-VPN services to provide co-operation between the VPN services of two networks; and

- VPN management services to enable service subscribers to control and manage their VPN resources and capabilities.

B.2 Corporate telecommunication Network (CN)

A CN can be realized by means of building blocks like:

- customer premises equipment (e.g. ISPBXs)
- customer premises networks
- leased lines
- switched public network services providing inter-PINX connections
- VPN

A CN can employ one or more instances of such building blocks.

Annex C (informative): Bibliography

For the purposes of this ETS, the following informative references have been given. Any resolution of contradictions between any of these documents is outside the scope of this ETS.

1) CCITT Vol. I, Fascicle I.3: "Terms and Definitions; Abbreviations and Acronyms; Recommendations on Means of Expression (Series B) and General Telecommunications Statistics (Series C)".

2) ITU-T Recommendation I.112: "Vocabulary of terms for ISDNs".

3) ITU-T Recommendation I.411: "ISDN user-network interfaces - reference configurations".

4) IEC 50(715): "International Electrotechnical Vocabulary; Chapter 715: Telecommunication networks; Teletraffic and operation".

5) ISO/IEC 11579-1 (1994): "Information technology - Telecommunication and information exchange services - Private Integrated Services Network (PISN) - Reference configuration for PISN exchanges (PINX)".

6) ETS 300 475-1: "Private Telecommunication Network (PTN); Reference configuration; Part 1: Reference configuration for PTN eXchanges (PTNXs) [ISO/IEC 11579-1 (1994), modified]".

7) ETR 076: "Integrated Services Digital Network (ISDN); Standards guide".

Annex D (informative): Index

This index lists the definitions in alphabetical order. The entries in square brackets "[ ]" refer to the respective subclauses; the subsequent numbers indicate the respective pages.

History

Document history			
February 1995	First Edition		
May 1996	Unified Approval Procedure	UAP 47:	1996-05-20 to 1996-10-11