SLOVENSKI STANDARD
SIST ETS 300 189 E1:2005

01-maj-2005

Zasebno telekomunikacijsko omrežje (PTN) – Naslavljanje

Private Telecommunication Network (PTN); Addressing

Ta slovenski standard je istoveten z: **ETS 300 189 Edition 1**

ICS:

33.040.35 Telefonska omrežja Telephone networks

SIST ETS 300 189 E1:2005 **en**

EUROPEAN TELECOMMUNICATION STANDARD

ETS 300 189

December 1992

Source: ETSI TC-ECMA

Reference: ECMA-155

ICS: 33.080

Key words: PTN, PTNA, ECMA-155, addressing

Private Telecommunication Network (PTN); Addressing

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Contents

Foreword

This European Telecommunication Standard (ETS) has been produced by the European Computer Manufacturers Association (ECMA) on behalf of its members and those of the European Telecommunications Standards Institute (ETSI).

This ETS is one of a series of ETSs which are applicable to private telecommunication networks. Its purpose is to serve as a general and common reference for all addressing related statements in other ETSs on private telecommunication networks.

This ETS is based on the ISDN concept as developed by CCITT and refined by ETSI for European applications, but modified to cover the particularities of private telecommunication network. It is also in the framework of standards for Open Systems Interconnection as defined by ISO 7498.

This ETS enables the Authority of a Private Telecommunication Network (PTN) to choose whether

- the ISDN Numbering Plan according to CCITT Recommendation E.164, or
- a Private Numbering Plan, or
- an Implicit Numbering Plan, or
- any combination of these numbering plans,

shall be employed as native numbering plan(s) in its PTN (PTN NP).

In addition, the Authority can employ PTN subaddressing in order to expand the addressing capacity beyond the capacity of the PTN NP.

The impact of this on terminal interchangeability between accesses of public and private ISDNs is indicated in annex D.

This ETS was produced by ECMA using the ECMA guidelines for the production of ETSs and using the ECMA stylesheet. In order to avoid undue delays in the publication of this ETS it has been agreed that this ETS will not be converted to the ETSI stylesheet.

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1 Scope

This European Telecommunication Standard (ETS) defines the requirements for the handling of network addresses for the identification of entities which use telecommunication services offered by Private Telecommunication Networks (PTNs). The standard covers numbering, including the requirements for the support of a Private Numbering Plan, and the support of subaddressing. The use of more than one PTN numbering plan in a single PTN is excluded from the scope of this ETS. However, this ETS does not exclude the possibility that physical equipment may be part of more than one PTN.

NOTE 1: The application of this standard to entities without fixed geographical locations is not precluded, but is not explicitly provided for in this standard.

This ETS is applicable to Private Telecommunication Network Exchanges (PTNXs) and to terminals to be attached to the access of PTNXs.

2 Conformance

In order to conform to this ETS, a PTNX shall meet the requirements of Clauses 6 to 8 and 10.

In order to conform to this ETS, a terminal for attachment to an access of a PTNX shall meet the requirements of Clauses 9 and 11.

3 References

CCITT Recommendation E.160	Definitions relating to National and International Numbering Plans (Blue Book, 1988).
CCITT Recommendation E.164	Numbering Plan for the ISDN Era (Blue Book, 1988)
CCITT Recommendation I.112	Vocabulary of terms for ISDNs.
CCITT Recommendation I.334	Principles relating ISDN Numbers/Addresses to the OSI Reference Model Network layer Addresses (Blue Book, 1988).
ENV 41004 (1992)	Reference configurations for connectivity relations of Private Telecommunication Network Exchanges.
ENV 41007-1	Definition of terms in private telecommunication networks, Part1: Definition of general terms.
ETS 300 062 (1990)	Integrated Services Digital Network (ISDN); Direct Dialling In (DDI) supplementary service; Service description.
ETS 300 171	Private Telecommunication Network (PTN); Specification, Functional model and information flows, Control aspects of circuit mode basic services.
ISO 8348 AD2	Information processing systems - Data communications - Network service definition. Addendum 2: Network layer addressing (1988).

4 Definitions

For the purpose of this standard, the following definitions apply.

4.1 Address

Formalized information used to indicate unambiguously an identifiable entity. Within the context of this standard, identifiable entities are those which use telecommunication services.

4.1.1 Number

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

4.1.1.1 PTN Number

A number of the domain covered by a PTN Numbering Plan.

4.1.1.2 Partial Number

The subset of a number which is at least significant at a particular access of the network concerned for distinguishing addressable entities beyond that access.

4.1.2 Subaddress

A part of an address beyond the addressing capability of a numbering plan.

4.2 Domain

The range of responsibility of an Authority for setting up numbering and/or addressing plans. The boundaries of a domain need not coincide with the physical boundaries of a given network.

4.2.1 Sub-Domain

A part of a domain where the responsibility for administering numbering and/or addressing plans is delegated to a subordinate authority.

4.3 Numbering Plan

4.3.1 Explicit Numbering Plan

A numbering plan in which each number is accompanied by an indication to which (sub)-domain it applies.

4.3.2 Implicit Numbering Plan

A numbering plan in which each number is not accompanied by an indication to which (sub)-domain it applies. Instead the identification has to be determined from the number digits themselves.

NOTE 2: The relationship between a Dialling Plan and an Implicit Numbering Plan is explained in annex E.

4.3.3 Native Numbering Plan

A numbering plan employed by a given domain in a way that it unambiguously identifies the addressable entities of that domain.

4.3.4 Foreign Numbering Plan

A numbering plan not native to a given domain, however, supported by it in so far as that it is known to the given domain.

4.3.5 Private Telecommunication Network Numbering Plans (PTN NP)

The generic designation for the numbering plan(s) chosen as native by a PTN Authority for its particular PTN.

4.3.5.1 ISDN Numbering Plan (ISDN NP)

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

4.3.5.2 Private Numbering Plan (PNP)

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

4.3.5.2.1 PNP Number

A number belonging to a PNP.

4.3.5.2.2 Region

The entire domain or a defined sub-domain of a PNP.

NOTE 3: A region does not necessarily correspond to a geographical area of a PTN.

4.3.5.2.3 Region Code (RC)

An RC comprises those leading digits of a PNP Number which identify a region.

NOTE 4: The RC may be omitted to yield a shortened form of a PNP Number for use internally to that region.

4.3.5.2.4 Regional Number (RN)

A particular form of a PNP Number which is unambiguous in the region concerned.

4.3.5.2.5 Complete Number (CN)

A number which is unambiguous in the entire PTN, i.e. which corresponds to the highest level employed in that PTN.

4.3.5.3 Unknown Numbering Plan (Unknown NP)

The numbering plan reflecting a dialling plan which is implicitly based on a particular private numbering domain as defined by the Authority.

4.3.6 Dialling Plan

A plan according to which a user can identify addressable entities by means of numbers and, if applicable, of prefixes indicating the (sub)-domain to which the addressable entity belongs.

4.4 Numbering Plan Identifier (NPI)

An indication of the numbering plan to which a number belongs; it is separate from the number itself.

4.5. Type of Number (TON)

An indication which distinguishes the various complete and shortened forms of number; it is separate from the number itself.

4.6 Selection Address/Number

An address or a number used to select an addressable entity to which a call is to be established.

NOTE 5: This term also applies to addresses in general, i.e. also to subaddresses.

4.7 Identification Address/Number

An address or a number which is used for the identification of an entity.

NOTE 6: This term also applies to addresses in general, i.e. also to subaddresses.

4.8 Multiple Subscriber Number (MSN)

A full or a partial number assigned to a user-to-network access for which an arrangement has been established in the context of the MSN supplementary service ("MSN arrangement").

4.9 External References

This standard uses the following terms defined in other documents.

Escape Code	CCITT Recommendation E.160
Prefix	ENV 41007-1
Private	ENV 41007-1
Private Telecommunication Network Exchange	ENV 41007-1
Public	ENV -141007
Public ISDN	ENV 41007-1
Signalling	CCITT Recommendation 1.112
Telecommunication Network	ENV 41007-1
Terminal, Terminal Equipment	ENV 41007-1
User	ETS 300 171

5 List of acronyms

AFI	Addressing plan and Format Identifier
CN	Complete Number
DDI	Direct Dialling In supplementary service
DSS1	Digital Subscriber Signalling system No. 1
ISDN	Integrated Services Digital Network
MSN	Multiple Subscriber Number supplementary service
NP	Numbering Plan
NPI	Numbering Plan Identifier
NSAP	Network Layer Service Access Point
OSI	Open Systems Interconnection
PNP	Private Numbering Plan
PSTN	Public Switched Telephony Network
PTN	Private Telecommunication Network
PTNX	Private Telecommunication Network Exchange
Q	Q reference point
RC	Regional Code
RN	Regional Number
S	S reference point
SA	Subaddress
SPNP	Support of Private Numbering Plans supplementary service
T	T reference point
TON	Type of Number
TOS	Type of Subaddress