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**Zasebno telekomunikacijsko omrežje (PTN) – Medcentralni signalizacijski protokol
- Vodovne osnovne storitve**

Private Telecommunication Network (PTN); Inter-exchange signalling protocol; Circuit mode basic services

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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).

The protocol defined in this ETS is the basis for the QSIG protocol for signalling at the Q reference point between Private Telecommunication Network Exchanges (PTNX). Whilst this particular ETS defines signalling for the support of circuit-mode bearer services, other ETSs specify other aspects of QSIG, e.g. generic procedures for the support of supplementary services and individual supplementary services.

QSIG is independent of the scenario used to interconnect PTNXs (see ENV 41006). These scenarios are specified in other ETSs.

QSIG is based on Digital Subscriber Signalling System No. 1 (DSS1), adapted for intra-PTN use. In particular, this ETS is based on a symmetrical form of ETS 300 102.

This ETS was produced by ECMA using the ECMA guidelines for the production of standards 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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Section I - General

1 Scope

This standard defines the Layer 3 protocol for signalling for the support of circuit mode bearer services (used either on their own or in support of teleservices) at the Q reference point between Private Telecommunication Network Exchanges (PTNX) connected together within a Private Telecommunication Network (PTN). The Q reference point is defined in ENV 41004.

Service specifications are produced in three stages and according to the method specified in ENV 41005. The definition of signalling protocols is stage 3 of the method. Stage 1 and stage 2 specifications of the basic circuit mode bearer services are to be found in ETS 300 171. The protocol defined in this standard satisfies the requirements identified by the stage 1 and stage 2 specifications in ETS 300 171.

2 Field of application

This standard is applicable to PTNXs which interconnect to form a PTN.

3 Conformance

In order to conform to this standard for a particular inter-PTNX connection scenario, a PTNX shall satisfy the requirements specified in 7, 8.1, 8.2, 8.3, 9, 10, 11 and 12 of this standard, subject to any provisions of the relevant standard for that scenario.

NOTE 1:

Under certain conditions, detailed in 7.2 (Message Segmentation Procedures), a PTNX need not meet any of the requirements of 7.2.

In addition, a PTNX claiming conformance with this standard shall:

- satisfy the requirements of 8.5 if the PTNX is capable of acting as a Transit PTNX;
- satisfy the requirements of 8.7 if the PTNX is capable of acting as an Originating PTNX;
- satisfy the requirements of 8.8 if the PTNX is capable of acting as an Terminating PTNX;
- satisfy the requirements of 8.9 if the PTNX is capable of acting as an Incoming Gateway PTNX; and
- satisfy the requirements of 8.10 if the PTNX is capable of acting as an Outgoing Gateway PTNX.

4 References

ETS 300 170	Private Telecommunication Network (PTN); Inter-exchange signalling, Data link layer protocol.
ETS 300 171	Private Telecommunication Network (PTN); Specification, functional model and information flows, Control aspects of circuit mode basic services.
ETS 300 173	Private Telecommunication Network (PTN); Specification, functional model and information flows, Identification supplementary services.
ENV 41004	Reference configuration for connectivity relations of private telecommunication network exchanges.
ENV 41005	Method for the specification of basic and supplementary services of private telecommunication networks.
ENV 41006	Scenarios for interconnections between exchanges of private telecommunication networks.
ETS 300 189	Private Telecommunication Network (PTN); Addressing.

ENV 41007-1 Definition of terms in private telecommunication networks. Part 1: Definition of general terms.

CCITT Recommendations

E.163 Numbering plan for the international telephone service.
 E.164 Numbering plan for the ISDN area.
 I.112 Vocabulary of terms for ISDNs.
 I.330 ISDN numbering and addressing principles.
 Q.930 ISDN user-network interface layer 3 - general aspects.
 Q.931 ISDN user-network interface layer 3 specification for basic call control.
 T.50 International alphabet no. 5.

5 Definitions and Acronyms

5.1 Definitions

5.1.1 General

For the purpose of this standard the special terminology defined in ENV 41007-1 and I.112 applies. If there is conflict, the definitions in ENV 41007-1 shall take precedence.

5.1.2 Side, Incoming Side and Outgoing Side (see figure 1)

The term Side is used to describe either of the two PTNXs at each end of an inter-PTNX link, and in particular to describe the protocol entity within a PTNX.

In the context of a call, the Outgoing Side is the Side which routes the call over the inter-PTNX link and the Incoming Side is the Side which receives the call.

5.1.3 Outgoing Call and Incoming Call

From the point of view of the Outgoing Side a call is an Outgoing Call.

From the point of view of the Incoming Side a call is an Incoming Call.

5.1.4 Originating PTNX, Terminating PTNX and Transit PTNX (see figure 1)

Within the context of a call, the PTNX to which the calling user is attached is known as the Originating PTNX.

Within the context of a call, the PTNX to which the called user is attached is known as the Terminating PTNX.

Within the context of a call, any PTNX through which the call passes, excluding the Originating PTNX or Incoming Gateway PTNX and the Terminating PTNX or Outgoing Gateway PTNX, is known as a Transit PTNX.

5.1.5 Gateway PTNX, Incoming Gateway PTNX and Outgoing Gateway PTNX (see figure 1)

Within the context of a call, a PTNX which performs interworking between the signalling system specified in this standard and another signalling system, either ISDN or non-ISDN, is known as a Gateway PTNX.

A Gateway PTNX which routes an incoming call from a route employing another signalling system on to an inter-PTNX link employing the signalling system specified in this standard is known as an Incoming Gateway PTNX.

A Gateway PTNX which routes an incoming call from an inter-PTNX link employing the signalling system specified in this standard on to a route employing another signalling system is known as an Outgoing Gateway PTNX.

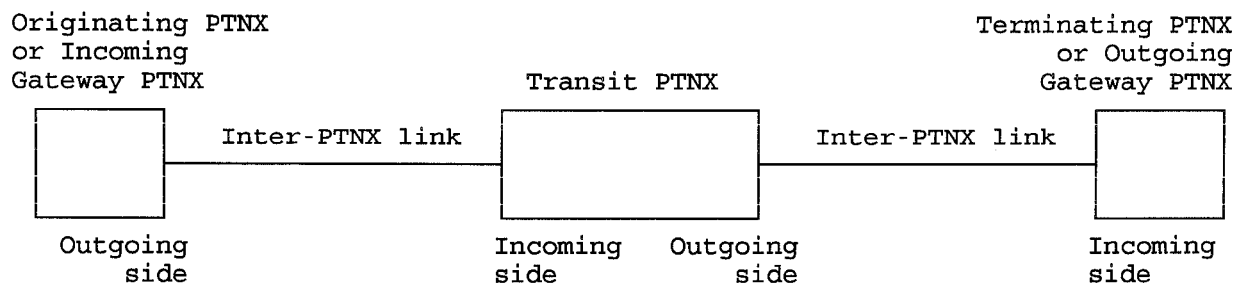


Figure 1: Illustration of Terminology through Example of a Call Routed over Two Inter-PTNX Links

5.1.6 Preceding PTNX and Subsequent PTNX

Within the context of a call, from the point of view of a PTNX acting as the Incoming Side of an inter-PTNX link, the PTNX at the other end of the link, acting as the Outgoing Side, is known as the Preceding PTNX.

Within the context of a call, from the point of view of a PTNX acting as the Outgoing Side of an inter-PTNX link, the PTNX at the other end of the link, acting as the Incoming Side, is known as the Subsequent PTNX.

5.1.7 Unrecognised Message

A message which is not specified in clause 11 of this standard or in any other standard that extends the protocol defined in this standard to which the PTNX claims conformance (e.g. a standard specifying generic procedures for supplementary services).

5.1.8 Unexpected Message

Within the context of a particular Protocol Control state, a message which is recognised, but for which no procedures are defined in 7.2, 7.4 and 8 of this standard (or in any other standard that extends the protocol defined in this standard to which the PTNX claims conformance) for receipt in that Protocol Control state.

5.1.9 Unrecognised information element

An information element received in a particular message which is not specified as part of that message in clause 11 of this standard or in any other standard that extends the protocol defined in this standard to which the PTNX claims conformance (e.g. a standard specifying generic procedures for supplementary services).

5.1.10 information elements with Invalid Contents

An information element which is recognised, but whose contents cannot be interpreted as valid using the rules specified in clause 12 of this standard, or the standard in which the information element is defined, or contains field values which are marked as 'reserved'.

5.2 Acronyms

ANF	Additional Network Feature
DSS1	Digital Subscriber Signalling System No. 1
IE	information element
ISDN	Integrated Services Digital Network
MP	Mapping (functional grouping)
MSI	Manufacturer Specific Information