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Zasebno telekomunikacijsko omrežje (PTN) – Medcentralni signalizacijski protokol - Dopolnilna storitev: ponudba klica

Private Telecommunication Network (PTN); Inter-exchange signalling protocol; Call offer supplementary service

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Private Telecommunication Network (PTN); Inter-exchange signalling protocol Call offer supplementary service

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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).

This ETS is one of a series of standards defining services and signalling protocols applicable to Private Telecommunication Networks (PTNs). The series uses the ISDN concepts as developed by the ITU-T(formerly CCITT) and is also within the framework of standards for open systems interconnection as defined by ISO.

This ETS specifies the signalling protocol for use at the Q reference point in support of the Call Offer supplementary service.

The ETS is based upon the practical experience of ECMA member companies and the results of their active and continuous participation in the work of ISO, ITU-T(formerly CCITT), ETSI and other international and national standardisation bodies. It represents a pragmatic and widely based consensus.

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 approval process for this ETS it has been agreed that this ETS will not be converted to the ETSI stylesheet.

Transposition dates	
Date of latest announcement of this ETS (doa):	28 February 1995
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 August 1995
Date of withdrawal of any conflicting National Standard (dow):	31 August 1995

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1 Scope

This European Telecommunication Standard (ETS) specifies the signalling protocol for the support of the Call Offer supplementary service (SS-CO) at the Q reference point between Private Telecommunication Network Exchanges (PTNXs) connected together within a Private Telecommunication Network (PTN).

SS-CO is a supplementary service which, on request from the calling user (or on that user's behalf), enables a call to be offered to a busy called user and to wait for that called user to accept this call.

The Q reference point is defined in IS 11579.

Service specifications are produced in three stages and according to the method specified in ETS 300 387. This ETS contains the stage 3 specification for the Q reference point and satisfies the requirements identified by the stage 1 and stage 2 specifications in ETS 300 361.

The signalling protocol for SS-CO operates on top of the signalling protocol for basic circuit switched call control, as specified in ETS 300 172, and uses certain aspects of the generic procedures for the control of supplementary services specified in ETS 300 239.

The impact on the protocol of interactions between the Call Offer supplementary service and other supplementary services is outside the scope of this ETS.

This ETS is applicable to PTNXs which can interconnect to form a PTN.

2 Conformance

In order to conform to this ETS, a PTNX shall satisfy the requirements identified in the Protocol Implementation Conformance Statement (PICS) proforma in annex B.

3 References

IS 11579	Information Technology - Telecommunications and Information Exchange Between Systems - Private Integrated Services Network - Reference Configurations for PISN Exchanges (1993).
ETS 300 171	Private Telecommunication Network (PTN); Specification, functional model and information flows, control aspects of circuit mode basic services (1993).
ETS 300 172	Private Telecommunication Network (PTN); Inter-exchange signalling protocol, circuit mode basic services (1993).
ETS 300 196	Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services Digital Subscriber Signalling System No. one (DSS1) protocol.
ETS 300 239	Private Telecommunication Network (PTN); Inter-exchange signalling protocol, generic functional protocol for the support of supplementary services (1993).
ETS 300 361	Private Telecommunication Network (PTN); Specification, functional model and information flows Call offer supplementary service (1994).
ETS 300 387	Private Telecommunications Network (PTN); Method for the specification of basic and supplementary services (1994).
ENV 41007-1	Definition of terms in private telecommunication networks (1989).
CCITT Rec. I.112	Vocabulary of terms for ISDNs (1988).
CCITT Rec. I.210	Principles of telecommunication services supported by an ISDN and the means to describe them (1988).
CCITT Rec. Z.100	Specification and description language (1988).

4 Definitions

For the purpose of this ETS the following definitions apply.

4.1 External definitions

This ETS uses the following terms defined in other documents:

- Application Protocol Data Unit (APDU) (ETS 300 239);
- Basic Service (CCITT Recommendation I.210);
- Call, Basic Call (ETS 300 239);
- Coordination Function (ETS 300 239);
- Notification (ETS 300 239);
- Originating PTNX (ETS 300 172);
- Private (ENV 41007-1);
- Private Telecommunication Network Exchange (ENV 41007-1);
- Public ISDN (ENV 41007-1);
- Signalling (CCITT Recommendation I.112);
- Supplementary Service (CCITT Recommendation I.210);
- Supplementary Service Control Entity (ETS 300 239);
- Telecommunication Network (ENV 41007-1);
- Terminal (ENV 41007-1);
- Terminating PTNX. (ETS 300 172);
- Transit PTNX (ETS 300 172);
- User (ETS 300 171).

4.2 Inter-PTNX link

The totality of a signalling channel and a number of user information channels at the Q reference point.

4.3 Path retention

The retaining of the network connection between the Originating PTNX and the Terminating PTNX so that a supplementary service (such as SS-CO) can be invoked without establishing a new connection.

5 List of acronyms

APDU	Application Protocol Data Unit
ASN.1	Abstract Syntax Notation no. 1
ISDN	Integrated Services Digital Network
NFE	Network Facility Extension
PICS	Protocol Implementation Conformance Statement
PTN	Private Telecommunication Network
PTNX	Private Telecommunication Network Exchange
SDL	Specification and Description Language
SS-CO	Call Offer supplementary service

6 Signalling protocol for the support of SS-CO

6.1 SS-CO description

Call Offer (SS-CO) is a supplementary service which, on request from the calling user (or on that user's behalf), enables a call to be offered to a busy called user and to wait for that called user to accept this call.

SS-CO is applicable to all circuit mode basic services defined in ETS 300 171.

6.2 SS-CO operational requirements

6.2.1 Requirements on the Originating PTNX

Call establishment procedures for the outgoing side of an inter-PTNX link and call release procedures, as specified in ETS 300 172, shall apply.

Generic procedures for the call-related control of supplementary services, as specified in ETS 300 239 for an End PTNX, shall apply.

6.2.2 Requirements on the Terminating PTNX

Call establishment procedures for the incoming side of an inter-PTNX link and call release procedures, as specified in ETS 300 172, shall apply.

Generic procedures for the call-related control of supplementary services, as specified in ETS 300 239 for an End PTNX, shall apply.

6.2.3 Requirements on a Transit PTNX

Basic call procedures specified in ETS 300 172 for a Transit PTNX shall apply.

Generic procedures for the call-related control of supplementary services, as specified in ETS 300 239 for a Transit PTNX, shall apply.

For SS-CO the requirements are limited to the passing on of Facility information elements for which the destination, as indicated in the NFE, is not the Transit PTNX.

6.3 SS-CO coding requirements

6.3.1 Operations

The operations defined in Abstract Syntax Notation number 1 (ASN.1) in table 1 shall apply.

Table 1 - Operations in support of SS-CO

```
Call-Offer-Operations
                        {iso(1) identified-organization(3) icd-ecma(0012) standard(0)
                        qsig-call-offer(192) call-offer-operations (0) }

DEFINITIONS EXPLICIT TAGS ::=

BEGIN

IMPORTS                 OPERATION, ERROR FROM Remote-Operation-Notation
                            {joint-iso-ccitt(2) remote-operations(4) notation(0)}
                        Extension FROM ECMA-manufacturer-specific-service-extension-definition
                            {iso(1) identified-organization(3) icd-ecma(0012) standard(0)
                            qsig-generic-procedures(165) msi-definition(0)}
                        notAvailable, supplementaryServiceInteractionNotAllowed FROM General-Errors
                            {ccitt(0) identified-organization(3) etsi (0) 196 general-errors (2)};

ptn OBJECT IDENTIFIER
                        ::=     { iso(1) identified-organization(3) icd-ecma(0012)
                                private-isdn-signalling-domain (9)}

PathRetain              ::=     OPERATION
                                ARGUMENT        PathRetainArg
                                -- this operation may be used by other supplementary services
                                -- using other values of argument

ServiceAvailable        ::=     OPERATION
                                ARGUMENT        ServiceAvailableArg
                                -- this operation may be used by other supplementary services
                                -- using other values of argument

CallOfferRequest        ::=     OPERATION
                                    ARGUMENT        DummyArg
                                    RESULT          DummyRes
                                    ERRORS      { notAvailable, notBusy, temporarilyUnavailable,
                                        supplementaryServiceInteractionNotAllowed, unspecified}

PathRetainArg           ::=     CHOICE      {serviceList ServiceList,
                                            extendedServiceList SEQUENCE{
                                                serviceList ServiceList,
                                                extension Extension
                                                    }
                                            }
```

```
ServiceAvailableArg      ::=    CHOICE      {serviceList ServiceList,
                                                      extendedServiceList SEQUENCE{
                                                            serviceList ServiceList,
                                                            extension Extension
                                                                     }
                                                      }

ServiceList              ::=    BIT STRING (SIZE(1..32)) {callOffer(0)}
                         -- bits other than callOffer(0) are reserved for
                         -- other supplementary services

DummyArg                 ::=    CHOICE{
                                            null    NULL,
                                            extension          [1] IMPLICIT Extension,
                                            sequenceOfExtn     [2] IMPLICIT SEQUENCE OF Extension}

DummyRes                 ::=    CHOICE{
                                            null    NULL,
                                            extension          [1] IMPLICIT Extension,
                                            sequenceOfExtn     [2] IMPLICIT SEQUENCE OF Extension}

callOfferRequest         CallOfferRequest   ::= {ptn co-request(34)}
pathRetain               PathRetain         ::= {ptn path-retain(41)}
serviceAvailable         ServiceAvailable   ::={ptn service-available(42)}

notBusy                  ERROR      ::= {ptn 1009}
                         -- used when an SS-CO request is received in
                         -- a Terminating PTNX and the called user is not busy

temporarilyUnavailable   ERROR      ::={ptn 1000}
                         -- used when conditions for invocation of SS-CO
                         -- are momentarily not met

Unspecified              ::=    ERROR PARAMETER Extension

unspecified              Unspecified  ::= {ptn 1008}

END                      -- of Call-Offer-Operations
```