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Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Name identification supplementary services

Technologies de l'information — Télécommunications et échange d'information entre systèmes — Réseau privé à intégration de services — Protocole de signalisation d'interéchange — Services supplémentaires d'identification de nom

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 13868 was prepared by ECMA (as ECMA-164) and was adopted, under a special "fast-track procedure", by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

This second edition cancels and replaces the first edition (ISO/IEC 13868:1995), which has been technically revised.

Introduction

This International Standard is one of a series of Standards defining services and signalling protocols applicable to Private Integrated Services Networks (PISNs). The series uses ISDN concepts as developed by ITU-T and conforms to the framework of International Standards for Open Systems Interconnection as defined by ISO/IEC.

This International Standard specifies the signalling protocol for use at the Q reference point in support of the Calling Name Identification Presentation (CNIP) and Connected Name Identification Presentation (CONP) supplementary services. The protocol defined in this International Standard forms part of the PSS1 protocol (informally known as QSIG).

This International Standard is based upon the practical experience of ECMA member companies and the results of their active and continuous participation in the work of ISO/IEC JTC 1, ITU-T, ETSI and other international and national standardization bodies. It represents a pragmatic and widely based consensus.

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Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Name identification supplementary services

1   Scope

This International Standard specifies the signalling protocol for the support of name identification supplementary services at the Q reference point between Private Integrated services Network eXchanges (PINXs) connected together within a Private Integrated Services Network (PISN). The name identification supplementary services are Calling Name Identification Presentation (SS-CNIP) and Connected Name Identification Presentation (SS-CONP).

Calling Name Identification Presentation (CNIP) is a supplementary service which is offered to the called user and which provides the name of the calling user (calling party name) to the called user.

Connected Name Identification Presentation (CONP) is a supplementary service which is offered to the calling user and which provides to the calling user the following:

-    the name of the user who answers the call (connected party name);

-    optionally the name of the alerting user (called party name);

-    optionally the name of the called user who cannot be reached (busy party name).

The supplementary service Calling/Connected Name Identification Restriction (CNIR) has no impact on the signalling at Q reference point.

Provision of a user's name to the PISN is outside the scope of this International Standard.

The Q reference point is defined in ISO/IEC 11579-1.

Service specifications are produced in three stages according to the method specified in ETS 300 387. This International Standard contains the stage 3 specification for the Q reference point and satisfies the requirements identified by the stage 1 and stage 2 specifications in ISO/IEC 13864.

The signalling protocol for SS-CNIP and SS-CONP operates on top of the signalling protocol for basic circuit switched call control, as specified in ISO/IEC 11572, and uses certain aspects of the generic procedures for the control of supplementary services specified in ISO/IEC 11582.

This International Standard also specifies additional signalling protocol requirements for the support of interactions at Q reference point between name identification supplementary services and other supplementary services and ANFs.

This International Standard is applicable to PINXs which can be interconnected to form a PISN.

2   Conformance

In order to conform to this International Standard, a PINX shall satisfy the requirements identified in the Protocol Implementation Conformance Statement (PICS) proforma in annex A.

3   Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 8859-1:1998, *Information technology - 8-bit single-byte coded graphic character sets - Part 1: Latin alphabet No. 1*

ISO/IEC 8859-2:1999, *Information technology - 8-bit single-byte coded graphic character sets - Part 2: Latin alphabet No. 2*

ISO/IEC 8859-3:1999, *Information technology - 8-bit single-byte coded graphic character sets - Part 3: Latin alphabet No. 3*

ISO/IEC 8859-4:1998, *Information technology - 8-bit single-byte coded graphic character sets - Part 4: Latin alphabet No. 4*

ISO/IEC 8859-5:1999, *Information technology - 8-bit single-byte coded graphic character sets - Part 5: Latin/Cyrillic alphabet*

ISO 8859-7:1987, *Information processing - 8-bit single-byte coded graphic character sets - Part 7: Latin/Greek alphabet*

ISO/IEC 10646-1:2000, *Information technology - Universal Multiple-Octet Coded Character Set (UCS) - Part 1: Architecture and Basic Multilingual Plane*

ISO/IEC 11572:2000, *Information technology - Telecommunications and information exchange between systems - Private Integrated Services Network - Circuit mode bearer services - Inter-exchange signalling procedures and protocol*

ISO/IEC 11574:2000, *Information technology - Telecommunications and information exchange between systems - Private Integrated Services Network - Circuit-mode 64 kbit/s bearer services - Service description, functional capabilities and information flows*

ISO/IEC 11579-1:1994, *Information technology - Telecommunications and information exchange between systems - Private integrated services network - Part 1: Reference configuration for PISN Exchanges (PINX)*

ISO/IEC 11582:2002, *Information technology - Telecommunications and information exchange between systems - Private Integrated Services Network - Generic functional protocol for the support of supplementary services - Inter-exchange signalling procedures and protocol*

ISO/IEC 13864:1995, *Information technology - Telecommunications and information exchange between systems - Private Integrated Services Network - Specification, functional model and information flows - Name identification supplementary services*

ISO/IEC 13869:2003, *Information technology - Telecommunications and information exchange between systems - Private Integrated Services Network - Inter-exchange signalling protocol - Call Transfer supplementary service*

ISO/IEC 13873:2003, *Information technology - Telecommunications and information exchange between systems - Private Integrated Services Network - Inter-exchange signalling protocol - Call Diversion supplementary services*

ETS 300 387:1994, *Private Telecommunication Network (PTN); Method for the specification of basic and supplementary services*

ITU-T Rec. I.112:1993, *Vocabulary of terms for ISDNs*

ITU-T Rec. I.210:1993, *Principles of telecommunication services supported by an ISDN and the means to describe them*

ITU-T Rec. Z.100:1999, *Specification and description language (SDL)*

ANSI T1.641-1995, *American National Standard for Telecommunications - Calling Name Identification Presentation*

4   Terms and definitions

For the purposes of this document, the following terms and definitions apply.

4.1   External definitions

This International Standard uses the following terms defined in other documents:

-	Application Protocol Data Unit (APDU)	(ISO/IEC 11582)
-	Basic Service	(ITU-T Rec. I.210)
-	Call, Basic Call	(ISO/IEC 11582)
-	Coordination Function	(ISO/IEC 11582)
-	Incoming Gateway PINX	(ISO/IEC 11572)
-	Integrated Services Digital Network	(ITU-T Rec. I.112)
-	Originating PINX	(ISO/IEC 11572)
-	Outgoing Gateway PINX	(ISO/IEC 11572)
-	Private Integrated Services Network (PISN)	(ISO/IEC 11579-1)
-	Private Integrated services Network eXchange (PINX)	(ISO/IEC 11579-1)
-	Signalling	(ITU-T Rec. I.112)

-	Supplementary Service	(ITU-T Rec. I.210)
-	Supplementary Service Control Entity	(ISO/IEC 11582)
-	Terminating PINX	(ISO/IEC 11572)
-	Transit PINX	(ISO/IEC 11572)
-	User	(ISO/IEC 11574)

4.2   Name

A string of maximum 50 characters which is used for the name identification of the PISN user of a call.

5   Acronyms

APDU	Application Protocol Data Unit
ASN.1	Abstract Syntax Notation One
ISDN	Integrated Services Digital Network
NFE	Network Facility Extension
PICS	Protocol Implementation Conformance Statement
PISN	Private Integrated Services Network
PINX	Private Integrated services Network eXchange
SDL	Specification and Description Language
SSCE	Supplementary Service Control Entity
SS-CNIP	Calling Name Identification Presentation supplementary service
SS-CONP	Connected Name Identification Presentation supplementary service

6 SS-CNIP and SS-CONP Coding Requirements

6.1 Operations

The operations defined in Abstract Syntax Notation number 1 (ASN.1) in table 1 shall apply. The notation is in accordance with ITU-T Rec. X.680 and X.690. The ITU-T Rec. X.208 and X.209 superseded version is in annex C.

Table 1 - Operations in Support of SS-CNIP and SS-CONP

```
Name-Operations-asn1-97
                        { iso ( 1)  standard ( 0) pss1-name (13868) name-operations-asn1-97( 1)  }


DEFINITIONS   ::=

BEGIN

IMPORTS

OPERATION                   FROM           Remote-Operations-Information-Objects
                            {joint-iso-itu-t remote-operations(4) informationObjects(5) version1(0)}

EXTENSION, Extension{}       FROM          Manufacturer-specific-service-extension-class-asn1-97
                    { iso standard pss1-generic-procedures (11582)  msi-class-asn1-97 ( 11) };

Name-Operations OPERATION ::= { callingName | calledName | connectedName | busyName }

callingName    OPERATION ::= {
                ARGUMENT            NameArg
                RETURN RESULT       FALSE
                ALWAYS RESPONDS     FALSE
                CODE                local: 0
                }

calledName     OPERATION  ::= {
                ARGUMENT            NameArg
                RETURN RESULT       FALSE
                ALWAYS RESPONDS     FALSE
                CODE                local: 1
                }

connectedName OPERATION ::= {
                ARGUMENT            NameArg
                RETURN RESULT       FALSE
                ALWAYS RESPONDS     FALSE
                CODE                local: 2
                }

busyName       OPERATION ::= {
                ARGUMENT            NameArg
                RETURN RESULT       FALSE
                ALWAYS RESPONDS     FALSE
                CODE                local: 3
                }
```

Table 1 - Operations in Support of SS-CNIP and SS-CONP (continued)

```
NameArg          ::=      CHOICE {
                              name              Name,
                              nameSequence      SEQUENCE {
                                                    name              Name,
                                                    extension         NameExtension OPTIONAL
                                                    }
                              }

NameExtension ::=    CHOICE {
                         single    [5] IMPLICIT Extension{{NameExtensionSet}},
                         multiple  [6] IMPLICIT SEQUENCE OF Extension{{NameExtensionSet}}
                         }

NameExtensionSet     EXTENSION ::= {...}

Name                 ::= CHOICE
                         {        namePresentationAllowed       NamePresentationAllowed,
                                  namePresentationRestricted    NamePresentationRestricted,
                                  nameNotAvailable              NameNotAvailable }

NamePresentationAllowed ::= CHOICE
                         {        namePresentationAllowedSimple        [0] IMPLICIT NameData,
                                  namePresentationAllowedExtended      [1] IMPLICIT NameSet }
                         -- iso8859-1 is implied in namePresentationAllowedSimple.

NamePresentationRestricted ::= CHOICE
                         {        namePresentationRestrictedSimple     [2] IMPLICIT NameData,
                                  namePresentationRestrictedExtended   [3] IMPLICIT NameSet,
                                  namePresentationRestrictedNull       [7] IMPLICIT NULL}
                         -- iso8859-1 is implied in namePresentationRestrictedSimple.
                         -- namePresentationRestrictedNull shall only be used in the
                         -- case of interworking where the other network provides an
                         -- indication that the name is restricted without the name itself.

NameNotAvailable     ::= [4] IMPLICIT NULL

NameData             ::= OCTET STRING (SIZE (1..50))
                         -- The maximum allowed size of the name field is 50 octets.
                         -- The minimum required size of the name field is 1 octet.

NameSet              ::= SEQUENCE
                         {        nameData      NameData,
                                  characterSet  CharacterSet OPTIONAL }
                         -- If characterSet is not included, iso8859-1 is implied.

CharacterSet    ::= INTEGER
                    {    unknown (0),
                         iso8859-1 (1),
                              -- The character set "iso8859-1" is specified in International
                              -- Standard ISO 8859-1
                              -- The value 2 was assigned for CCITT Rec. T.61
                              -- which has been withdrawn by ITU-T.
                         iso8859-2 (3),
                              -- The character set "iso8859-2" is specified in International
                              -- Standard ISO 8859-2
```

Table 1 - Operations in Support of SS-CNIP and SS-CONP (concluded)

```
                iso8859-3 (4),
                        --The character set "iso8859-3" is specified in International
                        -- Standard ISO 8859-3
                iso8859-4 (5),
                        --The character set "iso8859-4" is specified in International
                        -- Standard ISO 8859-4
                iso8859-5 (6),
                        --The character set "iso8859-5" is specified in International
                        -- Standard ISO 8859-5
                iso8859-7 (7),
                        --The character set "iso8859-7" is specified in International
                        -- Standard ISO 8859-7
                iso10646-BmpString (8),
                        -- The character set "iso10646-BmpString" is specified in International
                        -- Standard ISO 10646-1 and in ITU-T Rec. X.680
                        -- with this character set, each character occupies 2 octets in NameData
                iso10646-utf-8String (9)
                        -- The character set "iso10646-utf-8String" is specified in International
                        -- Standard ISO 10646-1
                        -- UTF-8-String is defined in Annex R of ISO 10646-1
                        -- with this character set, each character occupies a variable
                        -- number of octets (1…6) in NameData
                } (0..255)
                        -- Other character sets might be added in further editions of
                        -- this International Standard

END             -- of Name-Operations-asn1-97
```

6.2 Information Elements

The operations defined in 6.1 for the support of SS-CNIP and SS-CONP shall be coded in the Facility information element in accordance with ISO/IEC 11582.

When conveying the invoke APDU of the operations defined in 6.1, the destinationEntity data element of the NFE shall contain value endPINX. The Interpretation APDU in the Facility information element shall be included and shall have the value "discardAnyUnrecognisedInvokeAPDU (0)".

6.3 Messages

Basic call messages ALERTING, CONNECT, DISCONNECT, FACILITY, RELEASE, RELEASE COMPLETE, PROGRESS and SETUP shall be used for conveying the Facility information element in support of SS-CNIP and SS-CONP as specified in ISO/IEC 11582.

7 Signalling Protocol for the Support of SS-CNIP

7.1 SS-CNIP Description

Calling Name Identification Presentation (SS-CNIP) is a supplementary service which is offered to the called user and which provides the name of the calling user to the called user.

The PISN provides the calling user's name and delivers the calling user's name to the called user whenever an incoming call is presented.

The presentation of the calling user's name may be restricted as specified in SS-CNIR. Some users may have a service profile which permits the override of calling name identification restriction.

This supplementary service is applicable to all basic services, defined in ISO/IEC 11574.