INTERNATIONAL STANDARD

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Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network (PISN) — Inter-exchange signalling protocol — Make call request supplementary service

Technologies de l'information — Télécommunications et échange d'information entre systèmes — Réseau privé à intégration de services — Protocole de signalisation d'échange — Service supplémentaire de demande par appel

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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 20114 was prepared by ECMA (as ECMA-344) 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.

Introduction

This International Standard is one of a series 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 Make Call Request supplementary service. 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 JTC1, 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 (PISN) — Inter-exchange signalling protocol — Make call request supplementary service

1 Scope

This International Standard specifies the signalling protocol for the support of the Make Call Request supplementary service (SS-MCR) at the Q reference point between Private Integrated services Network eXchanges (PINXs) connected together within a Private Integrated Services Network (PISN).

Supplementary service MCR enables a Requesting User to request a Co-operating User to establish a new Requested Call to a Destination User. This new Requested Call between the Co-operating and Destination User can be either a Basic call or a Call Independent Signalling Connection.

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

Service specifications are produced in three stages and 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 20113.

The signalling protocol for SS-MCR 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 the Q reference point between SS-MCR and other supplementary services and ANFs.

This International Standard is applicable to PINXs, which can interconnect 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.

Conformance to this International Standard includes conforming to those clauses that specify protocol interactions between SS-MCR and other supplementary services and ANFs for which signalling protocols at the Q reference point are supported in accordance with the stage 3 standards concerned.

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 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 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 20113:2004, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Make call request supplementary service*

ISO/IEC 20115:2004, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Use of QSIG for Message Centre Access (MCA) profile standard*

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. Q.950:2000, *Digital Subscriber Signalling System No. 1 (DSS 1) — Supplementary services protocols, structure and general principles*

ITU-T Rec. Z.100:1999, *Specification and Description Language*

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)

— Call, Basic call   (ISO/IEC 11582)

— Call Independent Signalling Connection   (ISO/IEC 11582)

— Call-Independent   (ISO/IEC 11582)

— Gateway PINX   (ISO/IEC 11582)

— Originating PINX   (ISO/IEC 11582)

— 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 11582)
— Transit PINX	(ISO/IEC 11582)

4.2   Other definitions

4.2.1
Co-operating PINX
The PINX where the Co-operating User is located.

4.2.2
Co-operating User
The user who receives a Make Call Request and who shall set up a new Requested Call to the Destination User.

4.2.3
Destination PINX
The PINX where the Destination User is located.

4.2.4
Destination User
The called user of the Requested Call i.e. the user to whom the Co-operating User shall establish a Requested Call.

4.2.5
Make Call Request
A request from the Requesting User for a new call (i.e. Requested Call) between a Co-operating User and a Destination User.

4.2.6
Original Call
The call between the Requesting User and the Co-operating User. The Original Call can be either a Basic call or a Call Independent Signalling Connection and is correlated with the Requested Call.

4.2.7
Requested Call
The call between the Co-operating User and the Destination User that is established by the Co-operating User due to a Make Call Request from the Requesting User. The Requested Call can either be a Basic call (with a specific Basic Service) or a Call Independent Signalling Connection and is correlated with the Original Call.

4.2.8
Requesting PINX
The PINX where the Requesting User is located.

4.2.9
Requesting User
The User who sends a Make Call Request to the Co-operating User with the request to establish a specific Requested Call to the Destination User.

5   Acronyms

ANF	Additional Network Feature
APDU	Application Protocol Data Unit
ASN.1	Abstract Syntax Notation One
CISC	Call Independent Signalling Connection
ISDN	Integrated Services Digital Network
NFE	Network Facility Extension
PICS	Protocol Implementation Conformance Statement
PINX	Private Integrated services Network eXchange
PISN	Private Integrated Services Network
SDL	Specification and Description Language
SS	Supplementary Service
SS-MCR	Supplementary Service Make Call Request

6   Signalling Protocol for the support of SS-MCR

6.1   SS-MCR description

The supplementary service MCR enables a Requesting User to request a Co-operating User to establish a new Requested Call to a Destination User. This new Requested Call between the Co-operating User and the Destination User can either be a Basic call or a Call Independent Signalling Connection. The new Requested Call is correlated to the Original Call between the Requesting and Co-operating User.

6.2   SS-MCR operational requirements

6.2.1   Requirements on a Requesting PINX

Call establishment procedures for the incoming and outgoing side of an inter-PINX link and call release procedures, as specified in ISO/IEC 11572, shall apply.

Generic procedures for call-related control of supplementary services, as specified in ISO/IEC 11582 for an End PINX, shall apply.

Generic procedures for the call-independent control (connection-oriented) of supplementary services, as specified in ISO/IEC 11582 for an Originating PINX and for a Terminating PINX, shall apply.

6.2.2   Requirements on a Co-operating PINX

Call establishment procedures for the incoming and outgoing side of an inter-PINX link and call release procedures, as specified in ISO/IEC 11572, shall apply.

Generic procedures for call-related control of supplementary services, as specified in ISO/IEC 11582 for an End PINX, shall apply.

Generic procedures for the call-independent control (connection-oriented) of supplementary services, as specified in ISO/IEC 11582 for a Terminating PINX and for an Originating PINX, shall apply.

6.2.3 Requirements on a Destination PINX

Call establishment procedures for the incoming and outgoing side of an inter-PINX link and call release procedures, as specified in ISO/IEC 11572, shall apply.

Generic procedures for call-related control of supplementary services, as specified in ISO/IEC 11582 for an End PINX, shall apply.

Generic procedures for the call-independent control (connection-oriented) of supplementary services, as specified in ISO/IEC 11582 for a Terminating PINX and for an Originating PINX, shall apply.

6.2.4 Requirements on a Transit PINX

Basic call procedures specified in ISO/IEC 11572 for a Transit PINX shall apply.

Generic procedures for call-related control of supplementary services, as specified in ISO/IEC 11582 for a Transit PINX, shall apply.

Generic procedures for the call-independent control (connection-oriented) of supplementary services, as specified in ISO/IEC 11582 for a Transit PINX, shall apply.

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6.3 SS-MCR 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-MCR

```
SS-MCR-Operations-asn97
{iso (1) identified-organization (3) icd-ecma (12) standard (0)
 qsig-make-call-request (344) make-call-request-operations (0)}


DEFINITIONS EXPLICIT TAGS ::=


BEGIN


IMPORTS


OPERATION,
ERROR
FROM Remote-Operations-Information-Objects
{ joint-iso-itu-t (2) remote-operations (4) informationObjects (5) version1 (0) }


EXTENSION,
Extension {}
FROM Manufacturer-specific-service-extension-class-asn1-97
{ iso (1) standard (0) pss1-generic-procedures (11582) msi-class-asn1-97 (11) }


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


BasicService
FROM Call-Diversion-Operations-asn1-97
{ iso (1) standard (0) pss1-call-diversion (13873)
  call-diversion-operations-asn1-97 (1) }


basicServiceNotProvided,
supplementaryServiceInteractionNotAllowed,
userNotSubscribed
FROM General-Error-List
{itu-t (0) recommendation (0) q (17) 950 (950) general-error-list (1)}


PresentedAddressUnscreened
FROM Addressing-Data-Elements-asn1-97
{ iso (1) standard (0) pss1-generic-procedures (11582)
  addressing-data-elements-asn1-97 (20) }


CallIdentity, establishmentFailure
FROM Path-Replacement-Operations-asn1-97
{iso (1) standard (0) pss1-path-replacement (13874) pr-operations-asn1-97(1)}
;


Make-Call-Request-Operations OPERATION::= {
 mCRequest | mCAlerting | mCInform }
```