

INTERNATIONAL STANDARD

ISO/IEC 21889

First edition
2001-09-01

Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter- exchange signalling protocol — Call Identification and Call Linkage Additional Network Feature

*Technologies de l'information — Télécommunications et échange
d'information entre systèmes — Réseau privé à intégration de services —
Protocole de signalisation d'échange — Identification d'appel et
caractéristique de réseau additionnelle de liaison d'appel*

Reference number
ISO/IEC 21889:2001(E)



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO/IEC 2001

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Conformance	1
3	Normative references	1
4	Definitions	3
4.1	External definitions	3
4.2	Other definitions	3
4.2.1	CIDL PINX	3
4.2.2	CIDL Transit PINX	4
5	Acronyms	4
6	Signalling protocol for the support of ANF-CIDL	4
6.1	ANF-CIDL description	4
6.2	ANF-CIDL operational requirements	4
6.2.1	Provision/Withdrawal	4
6.2.2	Requirements on an Originating PINX	4
6.2.3	Requirements on a CIDL PINX	4
6.2.4	Requirements on a CIDL Transit PINX	4
6.3	ANF-CIDL coding requirements	5
6.3.1	Operations	5
6.3.2	Information elements	6
6.3.3	Messages	6
6.4	ANF-CIDL state definitions	6
6.4.1	States at a Originating PINX	6
6.4.2	States at a CIDL PINX	7
6.4.3	States at a CIDL Transit PINX	7
6.5	ANF-CIDL signalling procedures	7
6.5.1	Actions at a Originating PINX	7
6.5.2	Procedures at the CIDL PINX	7
6.5.3	Actions at a CIDL Transit PINX	9
6.6	ANF-CIDL impact of interworking with public ISDNs	10
6.7	ANF-CIDL impact of interworking with non-ISDNs	10
6.8	Protocol Interactions between ANF-CIDL and other supplementary services and ANFs	10
6.8.1	Calling Name Identification Presentation (SS-CNIP)	10
6.8.2	Connected Name Identification Presentation (SS-CONP)	10
6.8.3	Completion of Calls to Busy Subscribers (SS-CCBS)	10
6.8.4	Completion of Calls on No Reply (SS-CCNR)	10
6.8.5	Call Forwarding Unconditional (SS-CFU)	10
6.8.6	Call Forwarding Busy (SS-CFB)	11
6.8.7	Call Forwarding No Reply (SS-CFNR)	11
6.8.8	Call Deflection (SS-CD)	11
6.8.9	Call Transfer (SS-CT)	11

6.8.10	Path Replacement (ANF-PR)	12
6.8.11	Advice Of Charge (SS-AOC)	12
6.8.12	Call Offer (SS-CO)	12
6.8.13	Do Not Disturb (SS-DND)	12
6.8.14	Do Not Disturb Override (SS-DNDO)	12
6.8.15	Recall (SS-RE)	12
6.8.16	Call Intrusion (SS-CI)	12
6.8.17	Call Interception (ANF-CINT)	12
6.8.18	Transit Counter (SS-TC)	12
6.8.19	Route Restriction Class (ANF-RRC)	12
6.8.20	Authentication of the PISN (SS-WTAN)	13
6.8.21	Authentication of a WTM user (SS-WTAT)	13
6.8.22	Wireless Terminal Location Registration (SS-WTLR)	13
6.8.23	Wireless Terminal Mobility Incoming Call (ANF-WTMI)	13
6.8.24	Wireless Terminal Mobility Outgoing Call (ANF-WTMO)	13
6.8.25	Message Waiting Indication (SS-MWI)	13
6.8.26	Private User Mobility Incoming Call (ANF-PUMI)	13
6.8.27	Private User Mobility Outgoing Call (ANF-PUMO)	13
6.8.28	Common Information (ANF-CMN)	14
6.8.29	Call Priority Interruption (Protection) (SS-CPI(P))	14
6.8.30	Private User Mobility - Registration (SS-PUMR)	14
6.8.31	Single Step Call Transfer (SSCT)	14
6.8.32	Simple Dialog (SD)	14
6.9	ANF-CIDL parameter values (timers)	14
6.9.1	Timer T1	14
Annexes		
A	Protocol Implementation Conformance Statement (PICS) proforma	15
B	Examples of message sequences	24
C	Specification and Description Language (SDL) representation of procedures	28
D	Imported definitions	34
E	ASN.1 definitions according to ITU-T Recs. X.208 / X.209	38

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. 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 International Standard may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 21889 was prepared by ECMA (as ECMA-314) 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.

Annex A forms a normative part of this International Standard. Annexes B, C, D and E are for information only.

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 Call Identification and Call Linkage Additional Network Feature. 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.

Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Call Identification and Call Linkage Additional Network Feature

1 Scope

This International Standard specifies the signalling protocol for the support of the Call Identification and Call Linkage Additional Network Feature (ANF-CIDL) at the Q reference point between Private Integrated Network Services Exchanges (PINXs) connected together within a Private Integrated Services Network (PISN).

ANF-CIDL is an additional network feature which allows the assignment of a Global Call Identification (GID) to identify a call end-to-end over the call route (i.e. between the two end PINXs). As an option, a Thread Identification (TID) may be assigned to different calls which are logically linked together due to the operation of other supplementary services and/or ANFs. Additionally a Leg Identification (LID) may be assigned, to identify the different legs of a call.

NOTE 1 - This ANF has been developed to support the use of CSTA (ISO/IEC 18051) in a networked environment, i.e. in a PISN. Use of this ANF for other applications is not precluded.

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

Supplementary 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 21888.

The signalling protocol for ANF-CIDL 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 Call Identification and Call Linkage 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.

Conformance to this International Standard includes conforming to those clauses that specify protocol interactions between ANF-CIDL 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 normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/IEC 11571:1998, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Networks — Addressing*

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 11582:1995, *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 13869:1995, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Call transfer supplementary service*

ISO/IEC 13870:1995, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Call completion supplementary services*

ISO/IEC 13873:1995, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Call diversion supplementary services*

ISO/IEC 13874:1999, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Path replacement additional network feature*

ISO/IEC 14843:1996, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Call offer supplementary service*

ISO/IEC 14844:1996, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Do not disturb and do not disturb override supplementary services*

ISO/IEC 14846:1996, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Call intrusion supplementary service*

ISO/IEC 15054:1997, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Call interception additional network feature*

ISO/IEC 15429:1999, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Wireless Terminal Location Registration supplementary service and Wireless Terminal Information exchange additional network feature*

ISO/IEC 15431:1999, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Wireless terminal call handling additional network features*

ISO/IEC 15433:1999, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Wireless Terminal Authentication supplementary services*

ISO/IEC 15992:1998, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Call priority interruption and call priority interruption protection supplementary services*

ISO/IEC 17876:2000, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Private User Mobility (PUM) — Registration supplementary service*

ISO/IEC 17878:2000, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Private User Mobility (PUM) — Call handling additional network features*

ISO/IEC 18051:2000, *Information technology — Telecommunications and information exchange between systems — Services for Computer Supported Telecommunications Applications (CSTA) Phase III*

ISO/IEC 19460:2001, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Inter-exchange signalling protocol — Single Step Call Transfer Supplementary Service*

ISO/IEC 21888:2001, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Call Identification and Call Linkage Additional Network Feature*

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

ITU-T Rec. H.225:2000, *Call signalling protocols and media stream packetization for packet-based multimedia communication systems*

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, *Supplementary services protocols, structure and general principles*

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