
**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**

*Technologies de l'information — Télécommunications et échange
d'information entre systèmes — Réseau privé à intégration de services —
Spécifications, modèle fonctionnel et flux d'informations — Identification
d'appel et caractéristique de réseau additionnelle de liaison d'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.

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 21888 was prepared by ECMA (as ECMA-313) 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.

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Introduction

This International Standard is one of a series of Standards defining services and signalling procedures applicable to Private Integrated Services Networks (PISNs). The series uses the 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 Call Identification and Call Linkage (CIDL) additional network feature.

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.

There is currently no equivalent service specified by ITU-T or ETSI for public ISDN.

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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

1 Scope

This International Standard specifies the Additional Network Feature (ANF) Call Identification and Call Linkage (CIDL), which is applicable to various basic services supported by Private Integrated Services Networks (PISN). Basic services are specified in ISO/IEC 11574.

ANF-CIDL is an additional network feature which allows the identification and correlation of calls throughout a PISN by assigning unambiguous identifiers to each new call and also, as an option, to transformed and logically linked calls.

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.

Supplementary service specifications are produced in three stages, according to the method described in ETS 300 387. This International Standard contains the stage 1 and stage 2 specifications of ANF-CIDL. The stage 1 specification (clause 6) specifies the general feature principles and capabilities. The stage 2 specification (clause 7) identifies the Functional Entities involved in the supplementary service and the information flows between them.

2 Conformance

In order to conform to this International Standard, a stage 3 standard shall specify signalling protocols and equipment behaviour that are capable of being used in a PISN which supports the supplementary service specified in this International Standard. This means that, to claim conformance, a stage 3 standard is required to be adequate for the support of those aspects of clause 6 (stage 1) and clause 7 (stage 2) which are relevant to the interface or equipment to which the stage 3 standard applies.

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 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 13863:1998, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Path replacement additional network feature*

ISO/IEC 13865:1995, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Call transfer supplementary service*

ISO/IEC 13866:1995, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Call completion supplementary services*

ISO/IEC 13872:1995, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Call diversion supplementary services*

ISO/IEC 14841:1996, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Call offer supplementary service*

ISO/IEC 14842:1996, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Do not disturb and do not disturb override supplementary services*

ISO/IEC 14845:1996, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Call intrusion supplementary service*

ISO/IEC 15053:1997, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Call interception additional network feature*

ISO/IEC 15428:1999, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Wireless terminal location registration supplementary service and wireless terminal information exchange additional network feature*

ISO/IEC 15430:1999, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Wireless terminal call handling additional network features*

ISO/IEC 15432:1999, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Wireless terminal authentication supplementary services*

ISO/IEC 17875:2000, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Private User Mobility (PUM) — Registration supplementary service*

ISO/IEC 17877:2000, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — 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 19459:2001, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Single step call transfer supplementary service*

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)*

4 Terms and definitions

For the purposes of this International Standard the following terms and definitions apply.

4.1 External definitions

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

- | | |
|---|--------------------|
| — Basic service | (ITU-T Rec. I.210) |
| — PISN Number | (ISO/IEC 11571) |
| — Private Integrated Services Network (PISN) | (ISO/IEC 11579-1) |
| — Private Integrated Services Network Exchange (PINX) | (ISO/IEC 11579-1) |
| — Service | (ITU-T Rec. I.112) |

- Signalling (ITU-T Rec. I.112)
- Supplementary Service (ITU-T Rec. I.210)
- User (ISO/IEC 11574)

This International Standard refers to the following basic call Functional Entities (FE) defined in ISO/IEC 11574:

- Call Control (CC)
- Call Control Agent (CCA)

This International Standard refers to the following basic call inter-FE relationships defined in ISO/IEC 11574:

- r1
- r2
- r3

This International Standard refers to the following basic call information flows defined in ISO/IEC 11574:

- SETUP request/indication

4.2 Additional Network Feature (ANF) : A capability over and above that of the basic service provided by a PISN, but not directly to a user.

4.3 ANF-CIDL user : An entity, within a PISN, that requests ANF-CIDL.

4.4 Call : The term call is used within this International Standard for a Basic Call as defined in ISO/IEC 11574 or a Call Independent Signalling Connection.

4.5 Call Identification Data, CIDL-Data : The Leg ID and Call Linkage Data assigned to a specific call.

4.6 Call Linkage Data : The Global Call ID and Thread ID assigned to a specific call, as specified in ISO/IEC 18051.

4.7 Global Call Identification, Global Call ID, GID : A value assigned to a call end-to-end to uniquely identify that call throughout the PISN, without regards to its route or its history. If different calls are being transformed into a new call (i.e. due to Supplementary Service / ANF interaction), the GIDs of the old calls are updated (i.e. replaced / overwritten) with a new GID value for the new call.

4.8 Leg Identification, Leg ID, LID : A value assigned to a new call to uniquely identify that call throughout the PISN. The Leg ID does not change (i.e. is never overwritten) during the lifetime of the call, even if the call is transformed due to Supplementary Service / ANF interactions. After the transformation of two or more calls with different Leg IDs into one resulting call (e.g. after call transfer), the different parts (legs) of the resulting call retain their originally assigned Leg IDs.

4.9 Thread Identification, Thread ID, TID : A value assigned to calls which are logically linked together for the purpose of correlating them throughout the PISN. If two or more calls are logically linked together (i.e. due to Supplementary Service / ANF interaction), the Thread IDs of all these calls are updated (i.e. replaced / overwritten) with the current Thread ID of one of these calls.

5 List of acronyms

ANF	Additional Network Feature
ANF-CIDL	ANF – Call Identification and Call Linkage
CC	Call Control (Functional Entity)
CCA	Call Control Agent (Functional Entity)
FE	Functional Entity
GID	Global Call Identification
CIDL	Call Identification and Call Linkage
ID	Identification
ISDN	Integrated Services Digital Network
LID	Leg Identification
PINX	Private Integrated Services Network Exchange

PISN	Private Integrated Services Network
SDL	Specification and Description Language
SS	Supplementary Service
TID	Thread Identification

6 ANF-CIDL stage 1 specification

6.1 Description

6.1.1 General description

ANF-CIDL is an additional network feature which allows the assignment of a Global Call Identification to identify a call end-to-end. As an option, a Thread Identification 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 may be assigned, to identify the different call legs of a global call.

6.1.2 Qualifications on applicability to telecommunication services

ANF-CIDL is applicable to all basic services defined in ISO/IEC 11574.

6.2 Procedure

6.2.1 Provision/withdrawal

ANF-CIDL shall be generally available throughout the PISN.

6.2.2 Normal procedures

6.2.2.1 Activation, deactivation and interrogation

The feature shall be permanently activated.

6.2.2.2 Invocation and operation

A Global Call ID shall be assigned to each new call that is set up. Due to transformation of a call, the Global Call ID may be updated. At one time there can only be one Global Call ID assigned to a specific call. Once a Global Call ID is assigned, it shall not be re-used, even not after the call, to which it is assigned, has been cleared.

Optionally, a Thread ID may be assigned to each new call that is set up. It may be updated during the lifetime of a call. At one time there can only be one Thread ID assigned to a specific call. Once a Thread ID is assigned, it shall not be re-used, even not after the call, to which it is assigned, has been cleared.

NOTE 2 - This is guaranteed by adding a time element to the Global Call ID and the Thread ID.

Optionally, a Leg ID may be assigned to each new call that is set up. Due to supplementary service / ANF interactions, different Leg IDs may be assigned to the different parts of a transformed call. At one time there can only be one Leg ID assigned to a specific part of a call. After the call has been cleared, the Leg ID shall be available for re-use.

6.2.3 Exceptional procedures

6.2.3.1 Activation, deactivation, and interrogation

Not applicable.

6.2.3.2 Invocation and operation

When both sides of a call simultaneously attempt to update a Global Call ID or a Thread ID assigned to that call, the GID / TID with the higher value shall take precedence.

6.3 Interaction with other supplementary services and ANFs

Interactions with other supplementary services and ANFs for which PISN standards were available at the time of publication of this International Standard are specified below.

For the purpose of the Leg ID no interactions with other supplementary services apply, as it shall be unique for each new call. All interactions described in this sub-clause apply only to the Global Call ID and / or the Thread ID.

If no interactions for the Global Call ID / Thread ID are mentioned, these values shall not be updated.

If not otherwise stated, the values for Global Call ID / Thread ID shall be updated for a call, at the same time the specific Supplementary Service / ANF is completed.

6.3.1 Calling Line Identification Presentation (SS-CLIP)

No interaction.

6.3.2 Connected Line Identification Presentation (SS-COLP)

No interaction.

6.3.3 Calling/Connected Line Identification Restriction (SS-CLIR)

No interaction

6.3.4 Calling Name Identification Presentation (SS-CNIP)

No interaction.

6.3.5 Calling Name Identification Restriction (SS-CNIR)

No interaction.

6.3.6 Connected Name Identification Presentation (SS-CONP)

No interaction.

6.3.7 Completion of Call to Busy Subscriber (SS-CCBS)

The Thread ID of the unsuccessful call attempt shall be assigned to

- the connection used to invoke CCBS; and
- the call attempt used to complete the call; and
- the connection used to indicate that User B has become not busy in case the connection release option was chosen.

New and different Global Call IDs and also new and different Leg IDs shall be assigned to these calls.

6.3.8 Completion of Call on No Reply (SS-CCNR)

6.3.7 shall apply accordingly for SS-CCNR. (standards.iteh.ai)

6.3.9 Call Transfer (SS-CT)

The resulting call shall be updated with a new Global Call ID.

The resulting call shall be updated with the Thread ID of the primary call if

- the primary call is an incoming call and the secondary call is an outgoing call; or
- both calls are incoming calls and the primary call has been established before the secondary call; or
- both calls are outgoing calls and the primary call has been established before the secondary call.

The resulting call shall be updated with the Thread ID of the secondary call if

- the secondary call is an incoming call and the primary call is an outgoing call; or
- both calls are incoming calls and the secondary call has been established before the primary call; or
- both calls are outgoing calls and the secondary call has been established before the primary call.

The Leg IDs of the primary and the secondary call shall not be changed due to SS-CT invocation.

6.3.10 Call Forwarding Unconditional (SS-CFU)

The Global Call ID and Thread ID of the call from the calling user to the diverting user and a new Leg ID shall be assigned to the call from the calling user to the diverted-to user.

6.3.11 Call Forwarding Busy (SS-CFB)

6.3.10 shall apply.

6.3.12 Call Forwarding No Reply (SS-CFNR)

6.3.10 shall apply.

6.3.13 Call Deflection (SS-CD)

6.3.10 shall apply.

6.3.14 Path Replacement (ANF-PR)

The Global Call ID and the Thread ID of the old connection but a new Leg ID shall be assigned to the new connection.