

INTERNATIONAL
STANDARD

ISO/IEC
13869

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

[ISO/IEC 13869:1995](https://standards.iso.org/iso/13869/1995)

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



Reference number
ISO/IEC 13869:1995(E)

Contents

Foreword	vi
Introduction	vii
1 Scope	1
2 Conformance	2
3 Normative references	2
4 Definitions	3
4.1 External definitions	3
4.2 Other definitions	4
5 List of acronyms	4
6 Signalling protocol for the support of SS-CT	4
6.1 SS-CT description	4
6.2 SS-CT operational requirements	5
6.2.1 Provision/Withdrawal	5
6.2.2 Requirements on a Transferring PINX	5
6.2.3 Requirements on a Primary PINX	5
6.2.4 Requirements on a Secondary PINX	5
6.2.5 Requirements on a Transit PINX	5
6.3 SS-CT coding requirements	6
6.3.1 Operations	6
6.3.2 Information elements	13
6.3.2.1 Facility information element	13
6.3.2.2 Information elements embedded in the Facility information element	14
6.3.2.3 Other information elements	14
6.3.3 Messages	14
6.4 SS-CT state definitions	14
6.4.1 States at a Transferring PINX	14
6.4.1.1 CT-Idle	15
6.4.1.2 CT-Await-Answer-From-User-C	15

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6.4.1.3	CT-Await-Identify-Response	15
6.4.1.4	CT-Await-Initiate-Response	15
6.4.2	States at a Primary PINX	15
6.4.2.1	CT-Idle	15
6.4.2.2	CT-Await-Setup-Response	15
6.4.2.3	CT-Await-Connect	15
6.4.3	States at a Secondary PINX	15
6.4.3.1	CT-Idle	15
6.4.3.2	CT-Await-Setup	15
6.5	SS-CT signalling procedures	16
6.5.1	Actions at a Transferring PINX	16
6.5.1.1	Normal procedures for transfer by join	16
6.5.1.2	Exceptional procedures for transfer by join	17
6.5.1.3	Normal procedures for transfer by rerouting	18
6.5.1.4	Exceptional procedures for transfer by rerouting	18
6.5.2	Actions at a Primary PINX	19
6.5.2.1	Normal procedures for transfer by join	19
6.5.2.2	Exceptional procedures for transfer by join	19
6.5.2.3	Normal procedures for transfer by rerouting	19
6.5.2.4	Exceptional procedures for transfer by rerouting	20
6.5.3	Actions at a Secondary PINX	21
6.5.3.1	Normal procedures for transfer by join	21
6.5.3.2	Exceptional procedures for transfer by join	21
6.5.3.3	Normal procedures for transfer by rerouting	21
6.5.3.4	Exceptional procedures for transfer by rerouting	22
6.5.4	Actions at a Transit PINX	23
6.5.5	Subsequent actions at a Primary and a Secondary PINX	23
6.6	SS-CT impact of interworking with public ISDNs	24
6.6.1	Actions at a Gateway PINX	24
6.6.1.1	Impact of interworking if User A is in the PISN	24
6.6.1.2	Impact of interworking if a PISN User is transferred by the public ISDN	24
6.6.2	Actions at other types of PINX	24
6.7	SS-CT impact of interworking with non-ISDNs	25
6.7.1	Actions at a Gateway PINX	25
6.7.1.1	Transfer within the PISN	25
6.7.1.2	Transfer within the non-ISDN	25
6.7.1.3	Cooperation with a non-ISDN in providing transfer by rerouting	26
6.7.2	Actions at other types of PINX	26
6.8	Protocol Interactions between SS-CT and other supplementary services and ANFs	26

6.8.1	Calling Name Identification Presentation (SS-CNIP)	26
6.8.2	Connected Name Identification Presentation (SS-CONP)	26
6.8.3	Completion of Calls to Busy Subscribers (SS-CCBS)	27
6.8.4	Completion of Calls on No Reply (SS-CCNR)	27
6.8.5	Call Forwarding Unconditional (SS-CFU)	27
6.8.6	Call Forwarding Busy (SS-CFB)	27
6.8.7	Call Forwarding No Reply (SS-CFNR)	27
6.8.7.1	Actions at a Transferring PINX for rerouteing and SS-CFNR Originating PINX	27
6.8.7.2	Actions at a Transferring PINX for join or rerouteing and SS-CFNR Originating PINX	27
6.8.7.3	Actions at a Secondary PINX for rerouteing and SS-CFNR Served User PINX	27
6.8.7.4	Actions at a Secondary PINX for rerouteing and SS-CFNR Served User and Rerouteing PINX	28
6.8.7.5	Actions at a Secondary PINX for join and SS-CFNR Served User and Rerouteing PINX	28
6.8.7.6	Actions at a Transferring PINX for join	28
6.8.7.7	Actions at a Primary PINX for join	28
6.8.8	Call Deflection (SS-CD)	28
6.8.9	Path Replacement (ANF-PR)	29
6.8.9.1	Actions at an ANF-PR Requesting PINX	29
6.8.9.1.1	Invocation of Call transfer	29
6.8.9.1.2	Initiation of ANF-PR during Call Transfer	29
6.8.9.2	Actions at an ANF-PR Cooperating PINX	29
6.8.9.2.1	Invocation of Call Transfer	29
6.8.9.2.2	Initiation of ANF-PR during Call Transfer	30
6.9	SS-CT Parameter values (Timers)	30
6.9.1	Timer T1	30
6.9.2	Timer T2	30
6.9.3	Timer T3	31
6.9.4	Timer T4	31
Annex A		32
A.1	Introduction	32
A.2	Instructions for completing the PICS proforma	32
A.2.1	General structure of the PICS proforma	32
A.2.2	Additional information	33
A.2.3	Exceptional information	33
A.3	PICS proforma	34

A.3.1	Implementation identification	34
A.3.2	Protocol summary	34
A.3.3	General	35
A.3.4	Procedures for SS-CT-Join	35
A.3.5	Additional procedures for SS-CT-Rerouteing	36
A.3.6	Coding	37
A.3.7	Interactions between SS-CT and SS-CFNR/SS-CD	38
A.3.8	Interactions between SS-CT and ANF-PR	39
A.3.9	Timers	39
Annex B		40
Annex C		42
C.1	Example message sequence for normal operations of call transfer by join, both calls active	43
C.2	Example message sequence for call transfer by join, one call alerting	44
C.3	Example message sequence for normal operation of call transfer by rerouteing	45
C.4	Example message sequence for normal operation of call transfer by rerouteing, one call alerting	47
Annex D		49
D.1	SDL Representation of SS-CT at a Transferring PINX	50
D.2	SDL Representation of SS-CT at a Primary PINX	55
D.3	SDL Representation of SS-CT at a Secondary PINX	58
Annex E		60

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

International Standard ISO/IEC 13869 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC6, *Telecommunications and information exchange between systems*.

Annex A forms an integral part of this International Standard. Annexes B to E are for information only.

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Introduction

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

This particular International Standard specifies the Call Transfer supplementary service.

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1 Scope

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

SS-CT is a supplementary service which enables a User to transform two of that User's calls (at least one of which must be answered) into a new call between the two other users in the two calls.

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 CCITT Recommendation I.130. 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 13865.

The signalling protocol for SS-CT 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 Transfer 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.

3 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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ISO/IEC 11571:1994 *Information technology - Telecommunications and information exchange between systems - Numbering and sub-addressing in private integrated services networks.*

ISO/IEC 11572:1994, *Information technology - Telecommunications and information exchange between systems - Private Integrated Services Network - Circuit-mode bearer services - Inter-exchange signalling procedures and protocol.*

ISO/IEC 11574:1994, *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 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 13868:1995, *Information technology - Telecommunications and information exchange between systems - Private Integrated Services Network - Inter-exchange signalling protocol - Name identification supplementary services.*

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

ISO/IEC 13874:1995, *Information technology - Telecommunications and information exchange between systems - Private Integrated Services Network - Inter-exchange signalling protocol - Path replacement additional network feature.*

CCITT Rec. I.112(1988), *Vocabulary of terms for ISDNs (Blue Book).*

CCITT Rec. I.13(1988), *Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN (Blue Book).*

CCITT Rec. I.210(1988), *Principles of telecommunications services supported by an ISDN and the means to describe them (Blue Book).*

ITU-T Rec. Q.950(1993), *Digital Subscriber Signalling System No. 1 (DSS1) - Supplementary services protocols, structure and general principles.*

CCITT Rec. Z.100(1988), *Specification and Description Language (Blue Book).*

4 Definitions

For the purposes of this International Standard, the following definitions apply.

4.1 External definitions

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

Alerting	(ISO/IEC 13865)
Answered	(ISO/IEC 13865)
Application Protocol Data Unit (APDU)	(ISO/IEC 11582)
Basic Service	(CCITT Rec. I.210)
Gateway PINX	(ISO/IEC 11572)
Complete Number	(ISO/IEC 11571)
Interpretation APDU	(ISO/IEC 11582)
Network Facility Extension (NFE)	(ISO/IEC 11582)
Originating PINX	(ISO/IEC 11582)
Primary Call	(ISO/IEC 13865)
Private Integrated Services Network (PISN)	(ISO/IEC 11579-1)
Private Integrated Services Network Exchange (PINX)	(ISO/IEC 11579-1)
Secondary Call	(ISO/IEC 13865)
Signalling	(CCITT Rec. I.112)
Supplementary Service	(CCITT Rec. I.210)
Supplementary Service Control Entity	(ISO/IEC 11582)
Terminating PINX	(ISO/IEC 11582)
Transfer by join	(ISO/IEC 13865)
Transfer by rerouting	(ISO/IEC 13865)

Transit PINX	(ISO/IEC 11582)
User	(ISO/IEC 11574)
User A	(ISO/IEC 13865)
User B	(ISO/IEC 13865)
User C	(ISO/IEC 13865)

4.2 Other definitions

4.2.1 End PINX: Within the context of a call, a PINX which is not acting as a Transit PINX, i.e. an Originating PINX, a Terminating PINX, or a Gateway PINX.

4.2.2 Primary PINX: The End PINX which is on the end of the Primary Call nearest to User B.

4.2.3 redirection number: The number of a transferred User, as provided to the PINX of the other transferred User.

4.2.4 Secondary PINX: The End PINX which is on the end of the Secondary Call nearest to User C.

4.2.5 Transferring PINX: The End PINX which initiates the call transfer procedures on behalf of User A.

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5 List of acronyms ISO/IEC 13869:1995

APDU	Application Protocol Data Unit <small>https://standards.iteh.ai/catalog/standards/sist/1b224c6b-5139-4a49-8714-34c50f6c084e/iso-iec-13869-1995</small>
ASN.1	Abstract Syntax Notation no. 1
ISDN	Integrated Services Digital Network
NFE	Network Facility Extension
PNP	Private Numbering Plan
PICS	Protocol Implementation Conformance Statement
PISN	Private Integrated Services Network
PINX	Private Integrated Services Network Exchange
SDL	Specification and Description Language
SS-CT	Supplementary Service Call Transfer

6 Signalling protocol for the support of SS-CT

6.1 SS-CT description

Call Transfer (CT) is a supplementary service which enables a user to transform two of that user's calls (at least one of which must be answered) into a new call between the two other users in the two calls.

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

Call transfer can be achieved by using one of two methods; transfer by join and transfer by rerouteing. Support of transfer by join is mandatory. Support of transfer by rerouteing is an option, which, if not supported by all PINXs involved in the operation of call transfer, allows fall back to using transfer by join.

NOTE - When an active call has been transferred to an alerting call, the supervision during the alerting phase and the possible procedures to be followed in case the alerting call remains unanswered are outside the scope of this International Standard.

6.2 SS-CT operational requirements

6.2.1 Provision/Withdrawal

Provision and withdrawal shall be in accordance with 6.2.1 of ISO/IEC 13865.

6.2.2 Requirements on a Transferring PINX

The basic call procedures specified in ISO/IEC 11572 shall be supported. Generic procedures for the call-related control of supplementary services, as specified in ISO/IEC 11582 for an End PINX, shall apply.

6.2.3 Requirements on a Primary PINX

The basic call procedures specified in ISO/IEC 11572 shall be supported.

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

6.2.4 Requirements on a Secondary PINX

The basic call procedures specified in ISO/IEC 11572 shall be supported.

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

6.2.5 Requirements on a Transit PINX

The basic call procedures specified in ISO/IEC 11572 shall be supported.

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

For SS-CT 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 PINX.

6.3 SS-CT coding requirements

6.3.1 Operations

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

Table 1 - Operations in support of SS-CT

Call-Transfer-Operations {iso(1) standard(0) pss1-call-transfer(13869) call-transfer-operations (0)}

DEFINITIONS EXPLICIT TAGS ::=

BEGIN

IMPORTS

OPERATION, **STANDARD PREVIEW**
 ERROR **(standards.iteh.ai)**

FROM Remote-Operation-Notation {joint-iso-ccitt(2) remote-operations(4) notation(0)}

Extension <https://standards.iteh.ai/catalog/standards/sist/1b224c6b-5139-4a49-8714-34c50f6e084e/iso-iec-13869-1995>

FROM Manufacturer-specific-service-extension-definition {iso(1) standard(0)}

pss1-generic-procedures (11582) msi-definition(0)}

Name

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

supplementaryServiceInteractionNotAllowed,

notAvailable,

invalidCallState

FROM General-Error-List {ccitt (0) recommendation (0) q 950 general-error-list (1)}

PresentedAddressScreened,

PresentedNumberScreened,

PartyNumber,

PartySubaddress

FROM Addressing-Data-Elements {iso(1) standard (0) pss1-generic-procedures (11582) addressing-data-elements (9)}

PSS1InformationElement

FROM pss1-generic-parameters-definition { iso(1) standard (0) pss1-generic-procedures (11582) pss1-generic-parameters (6)};

-- TYPE DEFINITIONS FOR CT OPERATIONS FOLLOW

CallTransferIdentify ::= OPERATION

ARGUMENT

DummyArg

RESULT

CTIdentifyRes

ERRORS{

notAvailable,

invalidCallState,

unspecified,

supplementaryServiceInteractionNotAllowed

} ISO/IEC 13869:1995

CallTransferAbandon ::= OPERATION

ARGUMENT

DummyArg

CallTransferInitiate ::= OPERATION

ARGUMENT

CTInitiateArg

RESULT

DummyRes

ERRORS{

notAvailable,

invalidCallState,

invalidReroutingNumber,

unrecognizedCallIdentity,

establishmentFailure,

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