INTERNATIONAL STANDARD

ISO/IEC 13866

First edition
1995-11-15

Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Specification, functional model and information flows — Call completion supplementary services

Technologies de l'information — Télécommunications et échange d'information entre systèmes — Réseau privé à intégration de services — Spécification, modèle fonctionnel et débit d'informations — Services supplémentaires de complément d'appel

Reference number
ISO/IEC 13866:1995(E)

Contents

	Page
Foreword	vi
Introduction	vii
1 Scope	1
2 Conformance	1
3 Normative references	2
4 Definitions	2
4.1 External definitions	2
4.2 Other definitions	3
5 List of acronyms	4
6 SS-CCBS Stage 1 specification	5
6.1 Description	5
6.1.1 General description	5
6.1.2 Qualifications on applicability to telecommunication services	5
6.2 Procedures	5
6.2.1 Provision / Withdrawal	5
6.2.2 Normal procedures	6
6.2.2.1 Activation/deactivation/registration/Interrogation	6
6.2.2.2 Invocation and operation	6
6.2.2.3 Cancellation	7
6.2.3 Exceptional Procedures	7
6.2.3.1 Activation/deactivation/registration/interrogation	7
6.2.3.2 Invocation and Operation	7
6.2.3.2.1 Rejection of SS-CCBS Service request	7
6.2.3.2.2 User A is busy on SS-CC recall	8
6.2.3.2.3 Network congestion	8
6.2.3.2.4 User B becomes busy after successful SS-CC recall	8
6.2.3.2.5 User B becomes busy during path reservation	8
6.2.3.2.6 Duplicate SS-CCBS requests	9
6.2.3.2.7 Other failure situations	9
6.2.3.3 Cancellation	9
6.3 Interactions with other supplementary services	9
6.3.1 Calling Line Identification Presentation (SS-CLIP)	9
6.3.2 Connected Line Identification Presentation (SS-COLP)	9
No interaction.	9

© ISO/IEC 1995
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 the publisher.

ISO/IEC Copyright Office • Case postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

6.3.3 Calling/Connected Line Identification Restriction (SS-CLIR) 9
6.3.4 Calling Name Identification Presentation (SS-CNIP) 9
6.3.5 Connected Name Identification Presentation (SS-CONP) 9
6.3.6 Calling/Connected Name Identification Restriction (SS-CNIR) 10
6.3.7 Completion of Calls on No Reply (SS-CCNR) 10
6.3.8 Call Transfer (SS-CT) 10
6.3.9 Call Forwarding Unconditional (SS-CFU) 10
6.3.10 Call Forwarding Busy (SS-CFB) 10
6.3.11 Call Forwarding on No Reply (SS-CFNR) 11
6.3.12 Path Replacement (ANF-PR) 11
6.4 Interworking considerations 11
6.5 SS-CCBS overall SDL 11

7 SS-CCNR Stage 1 description 13

7.1 Description 13
7.1.1 General description 13
7.1.2 Qualifications on applicability to telecommunication services 13
7.2 Procedures 14
7.2.1 Provision/Withdrawal 14
7.2.2 Normal Procedures 14
7.2.2.1 Activation/deactivation/registration/interrogation 14
7.2.2.2 Invocation and operation 14
7.2.2.3 Cancellation 15
7.2.3 Exceptional procedures 15
7.2.3.1 Activation/deactivation/registration and Interrogation 15
7.2.3.2 Invocation and operation 15
7.2.3.2.1 Rejection of SS-CCNR service request 15
7.2.3.2.2 User A is busy on SS-CC recall 15
7.2.3.2.3 Network congestion 15
7.2.3.2.4 User B becomes busy after successful SS-CC recall 15
7.2.3.2.5 User B becomes busy during path reservation 16
7.2.3.2.6 Duplicate SS-CCNR requests 16
7.2.3.2.7 Other failure situations 16
7.2.3.3 Cancellation 16
7.3 Interaction with other supplementary services 16
7.3.1 Calling Line Identification Presentation (SS-CLIP) 16
7.3.2 Connected Line Identification Presentation (SS-COLP) 17
7.3.3 Calling/Connected Line Identification Restriction (SS-CLIR) 17
7.3.4 Calling Name Identification Presentation (SS-CNIP) 17
7.3.5 Connected Name Identification Presentation (SS-CONP) 17
7.3.6 Calling/Connected Name Identification Restriction (SS-CNIR) 17
7.3.7 Completion of Calls to Busy Subscribers (SS-CCBS) 17
7.3.8 Call Transfer (SS-CT) 17
7.3.9 Call Forwarding Unconditional (SS-CFU) 17
7.3.10 Call Forwarding Busy (SS-CFB) 17
7.3.11 Call Forwarding on No Reply (SS-CFNR) 18
7.3.12 Path Replacement (ANF-PR) 18
7.4 Interworking considerations 18
7.5 SS-CCNR Overall SDL 18

8 SS-CC Stage 2 specification 20

8.1 Functional model 20

8.1.1 Functional model description 20
8.1.2 Description of the functional entities 20
8.1.2.1 Originating SS-CC agent FE, FE1 20
8.1.2.2 Originating SS-CC controlling FE, FE2 20
8.1.2.3 Terminating SS-CC controlling FE, FE3 20
8.1.2.4 Terminating SS-CC agent FE, FE4 20
8.1.3 Relationship to basic call functional model 20
8.2 Information flows 21
8.2.1 Definition of Information flows 21
8.2.1.1 ra_CC_cancellation_access 21
8.2.1.2 ra_CC_cancelled 21
8.2.1.3 ra_CC_failed 22
8.2.1.4 ra_CC_list 23
8.2.1.5 ra_CC_recall_accepted 23
8.2.1.6 ra_CC_rem_user_free 23
8.2.1.7 ra_CC_request 24
8.2.1.8 ra_CC_status_req 25
8.2.1.9 ra_CC_stop_recall 25
8.2.1.10 ra_CC_user_B_free 26
8.2.1.11 rb_CC_call 26
8.2.1.12 rb_CC_call_reject 26
8.2.1.13 rb_CC_cancellation 27
8.2.1.14 rb_CC_free_notification 27
8.2.1.15 rb_CC_monitor 27
8.2.1.16 rb_CC_path_reserve 28
8.2.1.17 rb_CC_resume_completion 29
8.2.1.18 rb_CC_suspend_completion 29
8.2.1.19 rb_CC_suspend_path_reservation 29
8.2.1.20 rc_CC_status_req 29
8.2.2 Relationship of Information flows to Basic Call Information flows 30
8.2.3 Examples of information flow sequences 32
8.2.3.1 Successful invocation of SS-CC 33
8.2.3.1.1 Successful invocation of SS-CCBS 33
8.2.3.1.2 Successful Invocation of SS-CCNR 34
8.2.3.2 Status request procedure, User A 35
8.2.3.3 Status request procedure, User B 35
8.2.3.4 Cancellation of previously invoked SS-CC request by User A 36
8.2.3.5 Remote cancellation of previously invoked SS-CC request for service reasons 36
8.2.3.6 Local cancellation of previously invoked SS-CC request for service reasons 37
8.2.3.7 List of SS-CC request status 37
8.2.3.8 Successful completion of SS-CC (without reservation) 38
8.2.3.9 Successful completion of SS-CC (path reservation successful) 39
8.2.3.10 Successful completion of SS-CC (path reservation attempted, fall back to non-reservation) 40
8.2.3.11 Local rejection of SS-CC by PISN 41
8.2.3.12 Remote rejection of SS-CC by PISN 41
8.2.3.13 User A busy when User B becomes not busy (without reservation, request suspended) 41
8.2.3.14 User A busy when User B becomes not busy (path reservation successful) 43
8.2.3.15 User A busy when User B becomes not busy (path reservation attempted, fall back to non-reservation) 44
8.2.3.16 No response by User A to SS-CC Recall (without reservation) 45

8.2.3.17 No response by User A to SS-CC Recall (path reservation successful) 46
8.2.3.18 No response by User A to SS-CC recall (path reservation attempted, fall back to non-reservation) 47
8.2.3.19 Successful SS-CC recall, User B busy (without reservation) 48
8.2.3.20 Successful SS-CC recall, User B busy (path reservation successful) 49
8.2.3.21 Successful SS-CC recall, no path to User B (without reservation) 50
8.2.3.22 Failure of path reservation due to network congestion 51
8.2.3.23 Failure of path reservation due to busy User B 52
8.3 Functional entity actions 52
8.3.1 Functional entity actions of FE1 52
8.3.2 Functional entity actions of FE2 53
8.3.3 Functional entity actions of FE3 56
8.3.4 Functional entity actions of FE4 57
8.4 Functional entity Behaviour 57
8.4.1 Behaviour of FE1 57
8.4.2 Behaviour of FE2 59
8.4.3 Behaviour of FE3 63
8.4.4 Behaviour of FE4 66
8.5 Allocation of functional entities to physical locations 67
8.6 Interworking considerations 67
Annex A **68**

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 13866 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

Annex A of this International Standard is 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 (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 Completion supplementary services.

Information technology - Telecommunications and information exchange between systems - Private Integrated Services Network - Specification, functional model and information flows - Call completion supplementary services

1 Scope

This International Standard, specifies supplementary services Call Completion (SS-CC), which are applicable to various basic services supported by Private Integrated Services Network (PISN). Basic services are specified in ISO/IEC 11574.

SS-CC consists of two Supplementary services: the Completion of Calls to Busy Subscribers supplementary service (SS-CCBS) and the Completion of Calls on No Reply supplementary service (SS-CCNR). SS-CCBS allows completion of a call to a subscriber that was unsuccessful because of a busy condition and SS-CCNR allows completion of a call to a subscriber that was unsuccessful because the subscriber, although alerted, did not answer.

Supplementary service specifications are produced in three stages, according to the method described in CCITT Recommendation I.130. This International Standard specifies the stage 1 and stage 2 specifications of SS-CC. The stage 1 specifications (clauses 6 and 7) specify the supplementary services as seen by the users of PISNs. The stage 2 specification (clause 8) specifies the functional entities involved in the supplementary services and the information flows between them.

2 Conformance

In order to conform to this International tandard, a Stage 3 Standard shall specify signalling protocols and equipment Behaviour that are capable of being used in a PISN which supports the supplementary services 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

the stage 1 and stage 2 clauses which are relevant to the interface or equipment to which the stage 3 standard applies. The stage 1 and stage 2 clauses which a stage 3 standard for the Completion of Calls to Busy Subscribers (CCBS) supplementary service shall support are clauses 6 and 8 respectively. The stage 1 and stage 2 clauses which a stage 3 Standard for the Completion of Calls on No Reply (CCNR) supplementary service shall support are clauses 7 and 8 respectively.

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.

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).*

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

CCITT Rec. I.130(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).*

CCITT Rec. I.221(1988), *Common specific characteristics of services (Blue Book).*

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