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Information technology — Telecommunications and information exchange between systems — Broadband Private Integrated Services Network — Inter-exchange signalling protocol — Basic call/connection control

Technologies de l'information — Télécommunications et échange d'information entre systèmes — Réseau privé à large bande à intégration de services — Protocole de signalisation d'échange — Appel de base/contrôle de connexion

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Contents

	Page
Foreword	viii
Introduction	ix
1. Scope	1
2. Conformance	2
3. Normative references	2
3.1 References from ISO, IEC or ITU-T	2
3.2 References from other sources	3
4. Definitions	3
4.1 Definitions in PNNI 1.0	3
4.2 Other external definitions	3
4.3 Other definitions	3
5. List of acronyms	5
6. General Principles	6
6.1 Protocol model	7
6.2 Services provided to CCH	8
6.3 Services required of the SAAL	9
6.4 Protocol Control states	9
6.4.1 Call/connection states	9
6.4.2 Additional call/connection states relating to the provision of N-PISN services	9
6.4.3 States for restart initiation	9
6.4.4 States for restart response	9
6.5 CCH states at a Transit PINX	9
6.5.1 TCC_Idle (0)	10
6.5.2 TCC_Incoming_Call_Proceeding (4)	10
6.5.3 TCC_Transit_Call_Proceeding (5)	10
6.5.4 TCC_Call_Alerting (6)	10
6.5.5 TCC_Call_Active (7)	10
6.5.6 TCC_Await_Incoming_Release (8)	10
6.5.7 TCC_Await_Outgoing_Release (9)	10

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6.5.8 TCC_Await_Two-Way_Release (10) 10
6.6 Additional CCH states relating to the provision of N-PISN services at a Transit PINX 10
6.6.1 TCC_Await_Digits (1) 10
6.6.2 TCC_Await_Additional_Digits (2) 10
6.6.3 TCC_Overlap (3) 10

7. Message functional definitions and content 10
7.1 Messages for B-QSIG call/ connection control 11
7.1.1 ALERTING 11
7.1.2 CALL PROCEEDING 11
7.1.3 CONNECT 11
7.1.4 RELEASE 11
7.1.5 RELEASE COMPLETE 11
7.1.6 SETUP 11
7.1.7 NOTIFY 12
7.1.8 PROGRESS 12
7.2 Additional or modified messages related to the support of 64 kbit/s based PISN circuit-mode services 13
7.2.1 ALERTING 13
7.2.2 CONNECT 13
7.2.3 PROGRESS 14
7.2.4 RELEASE 14
7.2.5 SETUP 14
7.2.6 INFORMATION 14
7.2.7 SETUP ACKNOWLEDGE 15
7.3 Messages for point-to-multipoint call/connection control 15
7.3.1 ADD PARTY 15
7.3.2 ADD PARTY ACKNOWLEDGE 16
7.3.3 PARTY ALERTING 16
7.3.4 ADD PARTY REJECT 16
7.3.5 DROP PARTY 16
7.3.6 DROP PARTY ACKNOWLEDGE 16
7.4 Messages used with the global call reference 16

8. General message format and information elements coding 16
8.1 Overview 16
8.2 Protocol discriminator 16
8.3 Call reference 17
8.4 Message type, and message length 17
8.4.1 Message type 17
8.4.2 Message length 17
8.5 Variable length information elements for B-ISDN environment 17
8.5.1 Coding rules 17

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8.5.2 Extensions of codesets 17
8.5.3 Broadband-locking shift procedure 17
8.5.4 Broadband-non-locking shift procedure 18
8.5.5 ABR additional parameters 18
8.5.6 ABR setup parameters 18
8.5.7 Alternative ATM traffic descriptor 18
8.5.8 ATM adaptation layer parameters 18
8.5.9 ATM traffic descriptor 18
8.5.10 Broadband bearer capability 18
8.5.11 Broadband high layer information (B-HLI) 18
8.5.12 Broadband low layer information (B-LLI) 18
8.5.13 Broadband repeat indicator 18
8.5.14 Broadband sending complete 18
8.5.15 Call state 18
8.5.16 Called party number 19
8.5.17 Called party subaddress 20
8.5.18 Calling party number 20
8.5.19 Calling party subaddress 20
8.5.20 Cause 20
8.5.21 Connected number 20
8.5.22 Connected subaddress 21
8.5.23 Connection identifier 21
8.5.24 Connection scope selection 21
8.5.25 End-to-end transit delay 21
8.5.26 Extended Quality of service (QOS) parameter 21
8.5.27 Minimum acceptable ATM traffic descriptor 21
8.5.28 Notification indicator 21
8.5.29 Quality of service (QOS) parameter 21
8.5.30 Restart indicator 21
8.5.31 Transit network selection 21
8.5.32 OAM traffic descriptor 22
8.5.33 Progress indicator 22
8.5.34 Calling party soft PVPC or PVCC 22
8.5.35 Called party soft PVPC or PVCC 22
8.6 Information Elements for the support of 64 kbit/s based ISDN circuit mode services 22
8.6.1 Narrow-band bearer capability 22
8.6.2 Narrow-band high layer compatibility 22
8.6.3 Narrow-band low layer compatibility 22
8.6.4 Progress indicator 22
8.7 Information Elements for Point-to-Multipoint Call/connection control 22

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9. Protocol control procedures for B-QSIG point-to-point calls/connections 22
9.1 Establishment of a signalling AAL 23
9.2 Call/Connection establishment 23
9.2.1 Handling of a PROGRESS message 23
9.2.2 Call/connection failure 23
9.3 Call/Connection clearing 24
9.4 Call/connection collisions 24
9.5 Restart procedure 24
9.6 Handling of error conditions 24
9.6.1 Sending a STATUS message 24
9.6.2 Determination of protocol state compatibility on receipt of a STATUS message containing a call reference other than the global call reference 24
9.7 Error procedures with explicit action indication 25
9.8 Handling of messages with insufficient information 25
9.9 Notification procedures 25
9.10 Notification of interworking 25
9.11 List of Timers 25

10. Call/connection Control Procedures for Point-to-Multipoint Calls 26

11. Procedures for the support of 64 kbit/s based circuit mode basic services in B-PISN and interworking between N-PISNs and B-PISNs 26
11.1 Introduction 26
11.2 Use of information elements for N-PISN services 27
11.2.1 General aspects 27
11.2.2 Bearer service related information 27
11.2.3 Low layer related information 29
11.2.4 Higher layer related information 31
11.2.5 Handling of inconsistent combination of service parameters 31
11.3 Interworking PINX procedures for the succeeding side 31
11.3.1 Mapping of service related information 31
11.3.2 Mapping of cause information 32
11.4 Interworking PINX procedures for the preceding side 32
11.4.1 General aspects 32
11.4.2 Mapping of service related information 32
11.4.3 Mapping of cause information 32
11.5 Overlap sending 33
11.5.1 Preceding side procedures 33
11.5.2 Succeeding side procedures 33
11.6 Notification of interworking 34
11.7 Tones and announcements 34
11.7.1 Tones and announcements during call establishment 34
11.7.2 Clearing when tones and announcements are provided 34

This document is a preview generated by EVS

12. Call/connection handling requirements **34**
12.1 Transit PINX call/connection handling requirements 34
12.1.1 Receipt of SETUP message 35
12.1.2 Channel through connection procedures 35
12.1.3 State TCC_Incoming_Call_Proceeding 35
12.1.4 State TCC_Transit_Call_Proceeding 35
12.1.5 State TCC_Call_Alerting 36
12.1.6 State TCC_Call_Active 36
12.1.7 Clearing at a Transit PINX 36
12.1.8 Additional procedures for N-PISN interworking 37
12.1.9 Handling of basic call information elements at a Transit PINX 39
12.1.10 Notifications 41
12.2 Originating PINX call/connection handling requirements 41
12.2.1 Transmission of the SETUP message 41
12.2.2 Connection to the user plane virtual channel 42
12.2.3 Receipt of an ALERTING message 42
12.2.4 Receipt of a CONNECT message 42
12.2.5 Receipt of PROGRESS message 42
12.2.6 Notifications 42
12.2.7 Call/connection clearing initiated by the Originating PINX 42
12.2.8 Receipt of an indication of call/connection clearing 42
12.3 Terminating PINX call/connection handling requirements 43
12.3.1 Receipt of the SETUP message 43
12.3.2 Transmission of an ALERTING message 43
12.3.3 Transmission of a CONNECT message 43
12.3.4 Notifications 43
12.3.5 Call/connection clearing initiated by the Terminating PINX 43
12.3.6 Receipt of an indication of call/connection clearing 44
12.4 Incoming Gateway PINX call/connection handling requirements 44
12.4.1 Transmission of the SETUP message 44
12.4.2 Connection of the user plane virtual channel 44
12.4.3 Receipt of ALERTING imessage 45
12.4.4 Receipt of CONNECT message 45
12.4.5 Receipt of PROGRESS message 45
12.4.6 Notifications 45
12.4.7 Call/connection clearing initiated by the Gateway PINX 45
12.4.8 Receipt of an indication of call/connection clearing 45
12.5 Outgoing Gateway PINX call/connection handling requirements 45
12.5.1 Receipt of the SETUP message 45
12.5.2 Connection of the user plane virtual channel 46
12.5.3 Transmission of ALERTING message 46

This document is a preview generated by EVS

12.5.4 Transmission of CONNECT message 46
12.5.5 Transmission of PROGRESS message 46
12.5.6 Notifications 46
12.5.7 Call/connection clearing initiated by the Gateway PINX 46
12.5.8 Receipt of an indication of call/connection clearing 47
12.6 Interworking PINX call/connection handling requirements for N-PISN -> B-PISN interworking 47
12.6.1 Transmission of the SETUP message 47
12.6.2 Connection of the user plane virtual channel 47
12.6.3 Receipt of progress indicators 47
12.6.4 Receipt of CONNECT message 47
12.6.5 Call/connection clearing initiated by the interworking PINX 47
12.7 Interworking PINX call/connection handling requirements for B-PISN -> N-PISN interworking 48
12.7.1 Receipt of the SETUP message 48
12.7.2 Transmission of progress indications 48
12.7.3 Transmission of CONNECT message 48
12.7.4 Call/connection clearing initiated by the Interworking PINX 48

Annex A - Protocol Implementation Conformance Statement (PICS) proforma 50

Annex B - Soft permanent virtual connection procedures 72

Annex C - Mapping functions to support 64 kbit/s based circuit-mode PISN services in B-PISNs and interworking between N-PISNs and B-PISNs (QSIG/B-QSIG) 73

Annex D - Specification and Description Language (SDL) representation of protocol control procedures 78

Annex E - Guidelines for the use of instruction indicators 117

Annex F - Description of the capabilities supported by the protocol defined in this International Standard 119

Annex G - Specification and Description Language (SDL) representation of CCH at a Transit PINX and at an Interworking PINX 122

Annex H - Manufacturer specific information 135

Annex I - Possible strategies for avoidance of IPVCI collisions 136

Annex J - Differences between this International Standard and PNNI 1.0 137

Annex K - Specification and Description Language (SDL) representation of point-to-multipoint procedures 138

Annex L - Guidelines for interworking with ATM Forum PNNI 1.0 140

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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. 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.

International Standard ISO/IEC 13247 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems.*

Annexes A and B form an integral part of this International Standard. Annexes C to L are for information only.

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Introduction

This International Standard is one of a series of International Standards defining services and signalling protocols applicable to Broadband Private Integrated Services Networks (B-PISNs). The series uses B-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 particular International Standard specifies the signalling protocol for use at the Q reference point for basic call/connection control (B-QSIG-BC).

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Information technology — Telecommunications and information exchange between systems — Broadband Private Integrated Services Network — Inter-exchange signalling protocol — Basic call/connection control

1 Scope

This International Standard defines the signalling protocol for the purpose of basic call/connection control at the Q reference point between Private Integrated Services Network Exchanges (PINXs) connected together within a Broadband Private Integrated Services Network (B-PISN) employing Asynchronous Transfer Mode (ATM). This International Standard is part of the B-QSIG signalling system.

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

This International Standard is an application of the signalling protocol that forms part of the ATM Forum's PNNI 1.0 specification, which in turn is based on ITU-T Recommendation Q.2931, including the provisions for symmetrical operation described in annex H of recommendation Q.2931. Technical differences compared with the signalling protocol specified in PNNI 1.0 are summarized in annex J. Guidelines for interworking between a network employing the signalling protocol specified in this International Standard and a network employing the ATM Forum's PNNI 1.0 specification are given in annex L.

This International Standard is applicable to PINXs which interconnect to form a B-PISN using static hop-by-hop routeing. It therefore complements the ATM Forum's PNNI 1.0 specification, which is applicable to networks that employ dynamic source routeing.

The basic capabilities supported by the protocol specified in this International Standard are listed below and described in more detail in annex F:

- demand (switched) virtual channel and virtual path connections;
- point-to-point switched virtual channel and virtual path connections;
- point-to-multipoint virtual channel connections;
- connections with symmetric or asymmetric bandwidth requirements;
- single-connection (point-to-point) calls;
- basic signalling functions via protocol messages, information elements, and procedures;
- CBR, VBR (realtime and non-realtime), UBR and ABR service categories;
- negotiation of certain signalling parameters;
- inter-PINX virtual channel identifier (IPVCI) negotiation;
- out-of-band signalling for all signalling messages;
- error recovery;
- B-PISN addressing formats;
- end-to-end compatibility parameter identification;
- signalling interworking with N-PISN and provision of N-PISN services;
- forward compatibility;
- call/connection handling at different types of PINX, including Transit PINX, Originating PINX, Terminating PINX, Incoming Gateway PINX, Outgoing Gateway PINX and Interworking PINX;
- Signalling of individual Q0S parameters
- ATM anycast addresses
- Negotiation of ATM traffic descriptors

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- Soft PVPC and PVCC support
- Generic Identifier Transport

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

3.1 References from ISO, IEC or ITU-T

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 8348:1996, *Information technology — Open Systems Interconnection — Network Service Definition.*

ISO/IEC 9646-1:1994, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 1: General concepts.*

ISO/IEC 9646-7:1995, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 7: Implementation Conformance Statements.*

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

ISO/IEC 11572:1997, *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 11584:1996, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Circuit-mode multi-rate 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 13246:1997, *Information technology — Telecommunications and information exchange between systems — Broadband Private Integrated Services Network — Inter-exchange signalling protocol — Signalling ATM adaptation layer.*

CCITT Rec. E.164:1991, *Numbering plan for the ISDN era.*

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

CCITT Rec. I.330:1988, *ISDN numbering and addressing principles (Blue Book).*

CCITT Rec. Q.9:1988, *Vocabulary of switching and signalling terms (Blue Book).*

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

ITU-T Rec. I.321:1991, *B-ISDN protocol reference model and its application.*

ITU-T Rec. I.363:1996, B-ISDN ATM adaptation layer (AAL) specification.

ITU-T Rec. I.371:1996, *Traffic control and congestion control in B-ISDN.*

ITU-T Rec. I.610:1994, *B-ISDN operation and maintenance principles and functions.*

ITU-T Rec. Q.2931:1995, *Broadband Integrated Services Digital Network (B-ISDN) — Digital Subscriber Signalling System No. 2 (DSS2) — User-Network Interface (UNI) layer 3 specification for basic call/connection control.*

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