INTERNATIONAL STANDARDIZED PROFILE

ISO/IEC ISP 10609-27

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Information technology — International Standardized Profiles TB, TC, TD and TE — Connection-mode Transport Service over connection-mode Network Service —

Part 27:

Subnetwork-type dependent requirements for Network Layer for Call Control procedures concerning the incoming call of a packet switched mode Integrated Services Digital Network in case B using virtual calls

Technologies de l'information — Profils normalisés internationaux TB, TC, TD et TE — Service de transport en mode connexion sur service de réseau en mode connexion —

Partie 27: Prescriptions dépendantes du type de sous-réseau pour la couche réseau pour les procédures de contrôle d'appel concernant l'appel rentrant d'un réseau numérique de services intégré en mode de commutation de paquets dans le cas B employant des appels virtuels

Reference number
ISO/IEC ISP 10609-27:1995(E)

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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. In addition to developing International Standards, ISO/IEC JTC 1 has created a Special Group on Functional Standardization for the processing of International Standardized Profiles.

An International Standardized Profile is an internationally agreed, harmonized document which identifies a standard or group of standards, together with options and parameters, necessary to accomplish a function or set of functions.

Draft International Standardized Profiles are circulated to national bodies for voting. Publication as an International Standardized Profile requires approval by at least 75% of the national bodies casting a vote.

International Standardized Profile ISO/IEC ISP 10609-27 was prepared with the collaboration of

- Asia-Oceania Workshop (AOW);
- European Workshop for Open Systems (EWOS);
- Open Systems Environment Implementors' Workshop (OIW).

ISO/IEC ISP 10609 consists of the following parts, under the general title *Information technology - International Standardized Profiles TB, TC, TD and TE - Connection-mode Transport Service over connection-mode Network Service*:

Part 1: Subnetwork-type independent requirements for Group TB

Part 2: Subnetwork-type independent requirements for Group TC

Part 3: Subnetwork-type independent requirements for Group TD

Part 4: Subnetwork-type independent requirements for Group TE

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Part 5: Definition of profiles TB1111/TB1121

Part 6: Definition of profiles TC1111/TC1121

Part 7: Definition of profiles TD1111/TD1121

Part 8: Definition of profiles TE1111/TE1121

Part 9: Subnetwork-type dependent requirements for Network Layer, Data Link Layer and Physical Layer concerning permanent access to a packet switched data network using virtual calls

Part 10: LAN subnetwork-dependent, media-independent requirements

Part 11: CSMA/CD LAN subnetwork-dependent, media-dependent requirements

Part 12: Definition of profile TC51, provision of the OSI connection-mode Transport Service using the OSI connection-mode Network Service in an End System attached to a CSMA/CD LAN

Part 14: Definition of profile TC53, provision of the OSI connection-mode Transport Service using the OSI connection-mode Network Service in an End System attached to a Token Ring LAN

Part 15: Definition of profile TC54, provision of the OSI connection-mode Transport Service using the OSI connection-mode Network Service in an End System attached to an FDDI LAN

Part 20: Overview of the generalized multi-part ISP structure for TC and TD Group profiles for OSI usage of ISDN

Part 21: Subnetwork-type dependent requirements for Network Layer and Data Link Layer for ISDN B-channel X.25 DTE to DTE operation

Part 22: Subnetwork-type dependent requirements for Network Layer and Data Link Layer for ISDN B-channel X.25 DTE to DCE operation

Part 23: Subnetwork-type dependent requirements for Network Layer and Data Link Layer for Data Transfer concerning a packet switched mode Integrated Services Digital Network using virtual calls: B-channel access case

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Part 24: Subnetwork-type dependent requirements for Network Layer and Data Link Layer for Data Transfer concerning a packet switched mode Integrated Services Digital Network using virtual calls: D-channel access case

Part 25: Subnetwork-type dependent requirements for Q.931 circuit-switched operation

Part 26: Subnetwork-type dependent requirements for Network Layer for Call Control procedures concerning the outgoing call of a packet switched mode Integrated Services Digital Network in case B using virtual calls

Part 27: Subnetwork-type dependent requirements for Network Layer for Call Control procedures concerning the incoming call of a packet switched mode Integrated Services Digital Network in case B using virtual calls

Part 28: Subnetwork-type dependent requirements for Data Link Layer for end systems attached to an ISDN subnetwork

Part 30: Definition of profile TC1131

Part 31: Definition of profile TC1231

Part 32: Definition of profile TC4111

Part 33: Definition of profile TC4211

Part 34: Definition of profile TC43111

Part 35: Definition of profile TC43112

Part 36: Definition of profile TC43211

Part 37: Definition of profile TC43212

Part 38: Definition of profile TC4331

Part 40: Definition of profile TD1131

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Part 42: Definition of profile TD4111

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Part 44: Definition of profile TD43111

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Part 45: Definition of profile TD43112

Part 46: Definition of profile TD43211

Part 47: Definition of profile TD43212

Part 48: Definition of profile TD4331

Annexes A and B form an integral part of this part of ISO/IEC ISP 10609.

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Introduction

This International Standardized Profile (ISP) is defined in accordance with the principles specified by ISO/IEC Technical Report 10000, "Information Technology - Framework and taxonomy of International Standardized Profiles".

The context of Functional Standardization is one area in the overall field of Information Technology (IT) standardization activities, covering base standards, profiles, and registration mechanisms. A profile defines a combination of base standards that collectively perform a specific well-defined IT function. Profiles standardize the use of options and other variations in the base standards, and provide a basis for the development of uniform, internationally recognized system tests.

ISPs are produced not simply to 'legitimize' a particular choice of base standards and options, but to promote real system interoperability. One of the most important roles for an ISP is to serve as the basis for the development (by organizations other than ISO and IEC) of internationally recognized test methods. The development and widespread acceptance of tests based on this and other ISPs is crucial to the successful realization of this goal.

ISO/IEC ISP 10609 consists of several parts of which this is part 27. This part of ISO/IEC ISP 10609 specifies subnetwork-dependent and media-dependent requirements. There are further parts which specify the profile requirements that are subnetwork-independent. In addition, for each individual profile there is a part of ISO/IEC ISP 10609 which identifies the specific requirements of that profile, making reference to appropriate material from part 1 and from the subnetwork dependent parts of ISO/IEC ISP 10609.

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Information technology - International Standardized Profiles TB, TC, TD and TE - Connection-mode Transport Service over connection-mode Network Service

Part 27:

Subnetwork-type dependent requirements for Network Layer for Call Control procedures concerning the incoming call of a packet switched mode Integrated Services Digital Network in case B using virtual calls

1 Scope

ISO/IEC ISP 10609 is applicable to end systems concerned with operating in the Open Systems Interconnection (OSI) environment. It specifies a combination of OSI standards, which collectively provide the connection-mode Transport Service using the connection-mode Network Service.

This part of ISO/IEC ISP 10609 specifies the requirements for Network Layer for call control procedures concerning the incoming call of a packet mode ISDN in case B using virtual calls.

2 Normative References

The following documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC ISP 10609. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this part of ISO/IEC ISP 10609 are warned against automatically applying any more recent editions of the documents listed below, since the nature of references made by ISPs to such documents is that they may be specific to a particular edition. Members of IEC and ISO maintain registers of currently valid International Standards and ISPs, and ITU-T maintains published editions of its current Recommendations.

ISO/IEC 8348:1993, *Information technology - Open Systems Interconnection - Network Service Definition.*

NOTE - ISO/IEC 8348:1993 supersedes ISO 8348:1987. However, when this part of ISO/IEC ISP 10609 was under development, the previous edition was valid and this part of ISO/IEC ISP 10609 is therefore based on that edition. The new edition gives extensions and incorporates all of the amendments and corrigenda to the previous edition, which is listed below.

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ISO 8348:1987,	*Information processing systems - Data communications - Network service definition. (See also CCITT Recommendation X.213 - 1988).*
ISO/IEC 9574:1992,	*Information technology - Provision of the OSI connection-mode network service by packet mode terminal equipment connected to an integrated services digital network (ISDN). (See also CCITT Recommendation X.612-1992).*
CCITT Q.931(1988),	*ISDN user-network Layer 3 specification for basic call control.*
CCITT X.31(1992),	*Support of packet mode terminal equipment by an ISDN.*

3 Definitions

All of the terms used in this part of ISO/IEC ISP 10609 are defined in the referenced base standards (see clause 2).

4 Abbreviations

ISDN: Integrated Services Digital Network
SAPI: Service Access Point Identifier

5 Subnetwork-type dependent requirements for Network Layer

This clause specifies subnetwork-type dependent requirements for end system operation regarding Q.931 call control procedures concerning the incoming call when the end system is connected to an ISDN at the S/T reference point and supports packet mode operation in case B using virtual calls, to provide connection-mode Network Service as defined by ISO 8348:1987.

This clause covers the following three cases of case B access as defined in CCITT Recommendation X.31:

- D-channel access,
- B-channel: Permanent access, and
- B-channel: Demand access

NOTE - At the date of publication, there is no difference from a terminal point of view between "permanent" and "semi-permanent" connections. However, ITU-T may define a procedure that would allow an ISDN terminal to have a semi-permanent connection set up in support of permanent B-channel. At that time, amendments to this profile may be necessary. This profile uses the term "permanent".

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For each above access case, this clause covers the following two cases:

- a conforming implementation supports the Conditional Notification class of service as defined in CCITT Recommendation X.31, and
- a conforming implementation supports the Unconditional Notification class of service as defined in CCITT Recommendation X.31.

A conforming implementation shall support the call control procedures as described in Q.931 and provide the OSI Network Service (2.2, 2.3.1 and 2.3.2) as described in ISO/IEC 9574.

Conforming implementation's constraints on Q.931 call control procedures concerning the incoming call are specified in clause A.2.

5.1 D-channel access

5.1.1 Static Conformance Requirements

a) Call offering on SAPI = 16
Call offering procedures on SAPI = 16 is out of scope of this part of ISO/IEC ISP 10609.

5.1.2 Dynamic Conformance Requirements

a) Encoding of the field values of Information Elements
Coding standard field value of the following information elements shall be encoded "CCITT standardized coding."

Information Elements
Cause, Call state, Channel identification and Progress indicator

b) Treatment of the field values of Information Elements
On the receipt of the following information elements, the field "Coding Standard" encoded as "CCITT standardized coding" shall be accepted.

Information Elements
Cause, Call state, Channel identification and Progress indicator

c) Compatibility checking with addressing information
Where there is more than one end system attached at the S/T reference point, a conformance implementation shall use one of the Subaddressing, the Multiple Subscriber Number (MSN) and the Direct Dialling IN (DDI) to unambiguously identify a particular system uniquely.

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5.2 Permanent B-channel connection

5.2.1 Static Conformance Requirements

No additional requirements other than annex A are specified.

5.2.2 Dynamic Conformance Requirements

The specifications given in 5.1.2 for the dynamic conformance requirements in the case of D-channel access also apply to this case.

5.3 Demand access B-channel connection

5.3.1 Static Conformance requirements

No additional requirements other than annex A are specified.

5.3.2 Dynamic Conformance requirements

The specifications given in 5.1.2 for the dynamic conformance requirements in the case of D-channel access also apply to this case.

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Annex A
(normative)
International Standardized Profile Implementation Conformance Statement Requirements List (IPRL)

Introduction

This IPRL in this annex specifies the requirements for implementation of Network Layer for call control procedures concerning the incoming call of packet mode ISDN in case B using virtual calls.

A conforming implementation shall satisfy the mandatory conformance requirements of the base standard referenced in this part of ISO/IEC ISP 10609.

A.1 Notation

The following table defines the Q.931 messages and Information Elements supported for each group for which conformance is claimed, using the following keys.

a) Base Standard Status Notation for Static Requirements

O	optional
O.<n>	optional, but support of at least one of the group of options labeled by the same numeral <n> is required.

b) IPRL status
The status column of Profile Features is entered up by the one character or the two character notation. The one character notation indicates the static requirements only. On the two character notation, the first character is the static requirements and second is the dynamic requirements.

1) Static

m	Mandatory, mandatory to be implemented.

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A.2 Network Layer IPRL for Call Control Procedures

A.2.1 Implemented PDU Format

Base Standard Features				Profile Features	
Item	Protocol Features	References	Allowed Value	ISP References	Status
PF3	Call Reference	4.3	1-n octets		1-3 octets

A.2.2 Implemented Information Elements

<Implemented Bearer Capability>
<Receipt>

Base Standard Features				Profile Features	
Item	Protocol Features	References	Status	ISP References	Status
BR3.2	Octet 3 bit 6 and 7 1. Coding, CCITT	4.5.5	O.4		m
BR3.3	Octet 3 bit 1 to 5 2. Information transfer capability, unrestricted digital information	4.5.5	O.5		m

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Annex B
(normative)
Base standard PICS proformas

Introduction

This annex contains the PICS proforma information for the base standard CCITT Q.931, which does not yet have an internationally stable PICS proforma.

B.1 Notation

The following table defines the Q.931 messages and Information Elements supported for each group for which conformance is claimed, using the following keys.

a) Base Standard Status Notation for Static Requirements

M	mandatory
O	optional
O.<n>	optional, but support of at least one of the group of options labeled by the same numeral <n> is required.
<pred>:	conditional-item symbol, including predicate identification.
<pred>::	the group predicate symbol applies to the status of each of the items that follows, until another such t=group predicate occurs or until the next horizontal rule separating groups of items.
¬	Logical negation, applied to a conditional item's predicate.
–	not applicable

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B.2 PICS proforma for CCITT Q.931

B.2.1 Notification Class (CCITT X.31)

Item	Protocol Features	References	Status	Support N/A	Type/Length/Value		Note
					Allowed	Support	
		X.31					
CN	Conditional notification class	3.2.3.2	O.1	Yes [ ] No [ ]			
UN	Unconditional notification class	3.2.3.3	O.1	Yes [ ] No [ ]			

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B.2.2 Channel Type

Item	Protocol Features	References	Status	Support N/A	Type/Length/Value		Note
					Allowed	Support	
BP	B-channel packet mode	6.2.2.1 6.2.2.3	O.2	Yes [ ] No [ ]			
DP	D-channel packet mode	6.2.2.2 6.2.2.3	O.2	Yes [ ] No [ ]			

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B.2.3 Configuration

Item	Protocol Features	References	Status	Support N/A
BA	Basic Access		O.3	Yes [ ] No [ ]
PRA	Primary Rate Access		O.3	Yes [ ] No [ ]

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B.2.4 Major Capabilities

Item	Protocol Features	References	Status	Support	Type/Length/Value		Note
				N/A	Allowed	Support	
MC1	Does the implementation support call establishment at the destination interface?	5.2.1 5.2.2 5.2.7 5.2.8 6.2.2.1 e) 5.2.9	M	Yes [ ]			
MC2	Does the implementation support delivery of the Setup message by point-to-point data link?	5.2.3.1	PRA:M BA:O.3	[ ] Yes [ ] [ ] Yes [ ] No [ ]			
MC3	Does the implementation support delivery of the Setup message by broadcast data link?	5.2.3.2	PRA:N/A BA:O.3	[ ] [ ] Yes [ ] No [ ]			
MC4	Does the implementation support en-bloc receiving?	5.2.5 6.2.2.1 b) 6.2.2.1 c)	M	Yes [ ]			
MC5	Does the implementation support the sending of notification of interworking at the destination interface?	5.2.6 6.2.2.1 d)	O	Yes [ ] No [ ]			
MC6	Does the implementation support normal call clearing initiated by the user?	5.3.3 6.4.1	BP:M DP:N/A	[ ] Yes [ ] [ ]			
MC7	Does the implementation support clearing initiated by the network?	5.3.4 6.4.1	BP:M DP:N/A	[ ] Yes [ ] [ ]			
MC8	Does the implementation support the restart procedure?	5.5	CONF:M ¬CONF:O	[ ] Yes [ ] [ ] Yes [ ] No [ ]			

Predicate: CONF: (i) Primary Rate Access or (ii) Basic Access and Aware of configuration and point to point.

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Item	Protocol Features	References	Status	Support N/A	Type/Length/Value		Note
					Allowed	Support	
MC9	Does the implementation support clearing by the user in the case of error condition?	5.8	M	Yes [ ] No [ ]			
MC10	Does the implementation support clearing by the user in case of call rejection?	5.3.2 a)	M	Yes [ ]			
MC11	Does the implementation support the response to status enquiry procedure?	5.8.10	M	Yes [ ]			
MC12	Does the implementation support the sending of status enquiry?	5.8.10	O	Yes [ ] No [ ]			
MC13	Does the implementation support call offering procedure?	6.2.2.3	M	Yes [ ]			
MC14	Does the implementation support symmetric call operation?	Annex D	O	Yes [ ] No [ ]			
MC15	Does the implementation support the D-channel backup procedure?	Annex F	PRA:O BA:N/A	[ ] Yes [ ] No [ ] [ ]			
MC16	Does the implementation support the message segmentation procedure?	Annex K	O	Yes [ ] No [ ]			
MC17	Does the implementation support low layer compatibility negotiation?	Annex M	O	Yes [ ] No [ ]			

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B.2.5 Supported Call States

Item	Protocol Features	References	Status	Support	Type/Length/Value		Note
				N/A	Allowed	Support	
CS1	Null state U0	2.2.1.1	M	Yes [ ]			
CS2	Call present U6	2.2.1.4	M	Yes [ ]			
CS3	Call received U7	2.2.1.5	O	Yes [ ] No [ ]			
CS4	Connect request U8	2.2.1.6	M	Yes [ ]			
CS5	Incoming call proceeding U9	2.2.1.7	O	Yes [ ] No [ ]			
CS6	Active U10	2.2.1.8	BP:M DP:N/A	[ ] Yes [ ] [ ]			
CS7	Disconnect request U11	2.2.1.9	BP:M DP:N/A	[ ] Yes [ ] [ ]			
CS8	Disconnect indication U12	2.2.1.10	BP:M DP:N/A	[ ] Yes [ ] [ ]			
CS9	Release request U19	2.2.1.11	M	Yes [ ]			

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Item	Protocol Features	References	Status	Support N/A	Type/Length/Value		Note
					Allowed	Support	
CS10	Null REST 0	2.4.1.1	CONF:M ¬CONF:O	[ ] Yes [ ] [ ] Yes [ ] No [ ]			
CS11	Restart request REST 1	2.4.1.2	CONF:M ¬CONF:O	[ ] Yes [ ] [ ] Yes [ ] No [ ]			
CS12	Restart REST 2	2.4.1.3	CONF:M ¬CONF:O	[ ] Yes [ ] [ ] Yes [ ] No [ ]			

Predicate: CONF: (i) Primary Rate Access or (ii) Basic Access and Aware of configuration and point to point.

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B.2.6 Implemented PDU Format

Item	Protocol Features	References	Status	Support N/A	Type/Length/Value		Note
					Allowed	Support	
	Message organization						
PF1	Protocol discriminator	4.2	M	Yes [ ]	1 octet		
PF2	Call reference	4.3	M	Yes [ ]	1-n octets		
PF3	Message type	4.4	M	Yes [ ]	1 octet		
PF4	Other information elements	4.5	O	Yes [ ] No [ ]			

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B.2.7 Supported Messages

Item	Protocol Features		References	Status	Support N/A	Type/Length/Value		Note
						Allowed	Support	
MB1T	ALERTING	Transmission	3.2.1	O	Yes [ ] No [ ]			
MB2T	CALL PROCEEDING	Transmission	3.2.2	O	Yes [ ] No [ ]			
MB3T	CONNECT	Transmission	3.2.3	M	Yes [ ]			
MB4R	CONNECT ACKNOWLEDGE	Receipt	3.2.4	BP:M DP:N/A	[ ] Yes [ ] [ ]			
MB5T	PROGRESS	Transmission	3.2.6	O	Yes [ ] No [ ]			
MB6R	SETUP	Receipt	3.2.9	M	Yes [ ]			

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Item	Protocol Features		References	Status	Support N/A	Support	Type/Length/Value Allowed	Type/Length/Value Support	Note
MB7T	DISCONNECT	Transmission	3.2.5	DP:N/A BP:M	[ ] [ ]	Yes [ ]			
MB7R		Receipt		DP:N/A BP:M	[ ] [ ]	Yes [ ]			
MB8T	RELEASE	Transmission	3.2.7	BP:M DP:N/A	[ ] [ ]	Yes [ ]			Note B
MB8R		Receipt		M		Yes [ ]			
MB9T	RELEASE COMPLETE	Transmission	3.2.8	M		Yes [ ]			Note C
MB9R		Receipt		BP:M DP:N/A	[ ] [ ]	Yes [ ]			
MB10T	STATUS	Transmission	5.8.10, 5.8.11	M		Yes [ ]			
MB10R		Receipt		M		Yes [ ]			
MB11T	STATUS ENQUIRY	Transmission	3.2.11	MC12:M	[ ]	Yes [ ]			
MB11R		Receipt		M		Yes [ ]			

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Item	Protocol Features		References	Status	Support N/A	Type/Length/Value Allowed	Type/Length/Value Support	Note
MB12T	RESTART	Transmission	3.4.1	CONF:M ¬CONF:O	[ ] Yes [ ] [ ] Yes [ ] No [ ]			
MB12R		Receipt		CONF:M ¬CONF:O	[ ] Yes [ ] [ ] Yes [ ] No [ ]			
MB13T	RESTART ACKNOWLEDGE	Transmission	3.4.2	CONF:M ¬CONF:O	[ ] Yes [ ] [ ] Yes [ ] No [ ]			
MB13R		Receipt		CONF:M ¬CONF:O	[ ] Yes [ ] [ ] Yes [ ] No [ ]			

Predicate: CONF: (i) Primary Rate Access or (ii) Basic Access and Aware of configuration and point to point.

Note B: For D-channel packet mode, a RELEASE message is received during call offering. After the access connection has been awarded on the D-channel, a RELEASE message cannot be received.

Note C: For D-channel packet mode, a RELEASE COMPLETE message is transmitted during call offering. After the access connection has been awarded on the D-channel, a RELEASE COMPLETE message cannot be transmitted.

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B.2.8 Supported Information Elements

Item	Protocol Features		References	Status	Support N/A	Type/Length/Value		Note
						Allowed	Support	
	ALERTING		3.2.1	MB1T::	[ ]			
AL1	Protocol discriminator	Transmission	4.2	M	Yes [ ]	1 octet		
AL2	Call reference	Transmission	4.3	M	Yes [ ]	2-n octets		
AL3	Message type	Transmission	4.4	M	Yes [ ]	1 octet		
AL4	Channel identification	Transmission	4.5.13	O Note 1	Yes [ ] No [ ]	2-n octets		
AL5	Progress indicator	Transmission	4.5.22	O	Yes [ ] No [ ]	2-4 octets		

Note 1: Mandatory if this message is the first in response to Setup, unless the user accepts the B-channel indicated in the Setup message.

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Item	Protocol Features		References	Status	Support N/A	Type/Length/Value Allowed	Type/Length/Value Support	Note
	CALL PROCEEDING		3.2.2	MB2T::	[ ]			
CP1	Protocol discriminator	Transmission	4.2	M	Yes [ ]	1 octet		
CP2	Call reference	Transmission	4.3	M	Yes [ ]	2-n octets		
CP3	Message type	Transmission	4.4	M	Yes [ ]	1 octet		
CP4	Channel identification	Transmission	4.5.13	M	Yes [ ]	2-n octets		
CP5	Progress indicator	Transmission	4.5.22, 6.2.2.1 d)	O	Yes [ ] No [ ]	2-4 octets		

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Item	Protocol Features		References	Status	Support N/A	Type/Length/Value		Note
						Allowed	Support	
	CONNECT		3.2.3	MB3T::				
CN1	Protocol discriminator	Transmission	4.2	M	Yes [ ]	1 octet		
CN2	Call reference	Transmission	4.3	M	Yes [ ]	2-n octets		
CN3	Message type	Transmission	4.4	M	Yes [ ]	1 octet		
CN4	Channel identification	Transmission	4.5.13	O Note 1	Yes [ ] No [ ]	2-n octets		
CN5	Progress indicator	Transmission	4.5.22, 6.2.2.1 d)	O	Yes [ ] No [ ]	2-4 octets		

Note 1: Mandatory if this message is the first in response to Setup, unless the user accepts the B-channel indicated in the Setup message.

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Item	Protocol Features		References	Status	Support N/A	Type/Length/Value Allowed	Type/Length/Value Support	Note
	CONNECT ACKNOWLEDGE		3.2.4	MB4R::	[ ]			
CA1	Protocol discriminator	Receipt	4.2	M	Yes [ ]	1 octet		
CA2	Call reference	Receipt	4.3	M	Yes [ ]	2-n octets		
CA3	Message type	Receipt	4.4	M	Yes [ ]	1 octet		
CA4	Display	Receipt	4.5.15	O	Yes [ ] No [ ]	2-34 or 82 octets		

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Item	Protocol Features		References	Status	Support N/A	Type/Length/Value Allowed	Type/Length/Value Support	Note
	PROGRESS		3.2.6	MB5T::	[ ]			
PR1	Protocol discriminator	Transmission	4.2	M	Yes [ ]	1 octet		
PR2	Call reference	Transmission	4.3	M	Yes [ ]	2-n octets		
PR3	Message type	Transmission	4.4	M	Yes [ ]	1 octet		
PR4	Cause	Transmission	4.5.12	O	Yes [ ] No [ ]	2-32 octets		
PR5	Progress indicator	Transmission	4.5.22	M	Yes [ ]	4 octets		

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Item	Protocol Features		References	Status	Support N/A	Type/Length/Value		Note
						Allowed	Support	
	SETUP		3.2.9	MB6R::	[ ]			
SU1	Protocol discriminator	Receipt	4.2	M	Yes [ ]	1 octet		
SU2	Call reference	Receipt	4.3	M	Yes [ ]	2-n octets		
SU3	Message type	Receipt	4.4	M	Yes [ ]	1 octet		
SU4	Bearer capability	Receipt	4.5.5	M	Yes [ ]	4-13 octets		
SU5	Channel identification	Receipt	4.5.13	M	Yes [ ]	2-n octets		
SU6	Display	Receipt	4.5.15	O	Yes [ ] No [ ]	2-34 or 82 octets		
SU7	Information rate	Receipt	4.7.1	O	Yes [ ] No [ ]	2-6 octets		
SU8	End-to-end transit delay	Receipt	4.7.2	O	Yes [ ] No [ ]	2-11 octets		

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Item	Protocol Features		References	Status	Support N/A	Type/Length/Value		Note
						Allowed	Support	
SU9	Transit delay selection and indication	Receipt	4.7.7	O	Yes [ ] No [ ]	2-5 octets		
SU10	Packet layer binary parameters	Receipt	4.7.3	O	Yes [ ] No [ ]	2-3 octets		
SU11	Packet layer window size	Receipt	4.7.4	O	Yes [ ] No [ ]	2-4 octets		
SU12	Calling party number	Receipt	4.5.10	O	Yes [ ] No [ ]	2-n octets		
SU13	Calling party subaddress	Receipt	4.5.11	O	Yes [ ] No [ ]	2-23 octets		
SU14	Called party number	Receipt	4.5.8	O	Yes [ ] No [ ]	2-n octets		
SU15	Called party subaddress	Receipt	4.5.9	O	Yes [ ] No [ ]	2-23 octets		
SU16	Redirecting number	Receipt	4.7.6	O	Yes [ ] No [ ]	2-n octets		
SU17	User-user	Receipt	4.5.29	O	Yes [ ] No [ ]	Note 1		
SU18	Packet size	Receipt	4.7.5	O	Yes [ ] No [ ]	2-4 octets		

Note 1: The minimum length is 2 octets; the standard default maximum length is 131 octets.

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Item	Protocol Features		References	Status	Support N/A	Type/Length/Value Allowed	Type/Length/Value Support	Note
	DISCONNECT		3.2.5					
DC1	Protocol discriminator	Transmission	4.2	MB7T:M	[ ] Yes [ ]	1 octet		
		Receipt		MB7R:M	[ ] Yes [ ]			
DC2	Call reference	Transmission	4.3	MB7T:M	[ ] Yes [ ]	2-n octets		
		Receipt		MB7R:M	[ ] Yes [ ]			
DC3	Message type	Transmission	4.4	MB7T:M	[ ] Yes [ ]	1 octet		
		Receipt		MB7R:M	[ ] Yes [ ]			
DC4	Cause	Transmission	4.5.12	MB7T:M	[ ] Yes [ ]	4-32 octets		
		Receipt		MB7R:M	[ ] Yes [ ]			
DC5	Display	Receipt	4.5.15	MB7R:O	[ ] Yes [ ] No [ ]	2-34 or 82 octets		
DC6	User-user	Transmission	4.5.29	MB7T:O	[ ] Yes [ ] No [ ]	Note 1		

Note 1: The minimum length is 2 octets; the standard default maximum length is 131 octets.

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Item	Protocol Features		References	Status	Support N/A	Type/Length/Value Allowed	Type/Length/Value Support	Note
	RELEASE		3.2.7					
RE1	Protocol discriminator	Transmission	4.2	MB8T:M	[ ] Yes [ ]	1 octet		
		Receipt		MB8R:M	[ ] Yes [ ]			
RE2	Call reference	Transmission	4.3	MB8T:M	[ ] Yes [ ]	2-n octets		
		Receipt		MB8R:M	[ ] Yes [ ]			
RE3	Message type	Transmission	4.4	MB8T:M	[ ] Yes [ ]	1 octet		
		Receipt		MB8R:M	[ ] Yes [ ]			
RE4	Cause	Transmission	4.5.12	MB8T:O Note 1	[ ] Yes [ ] No [ ]	2-32 octets		
		Receipt		MB8R:O Note 1	[ ] Yes [ ] No [ ]			
RE5	Display	Receipt	4.5.15	MB8R:O	[ ] Yes [ ] No [ ]	2-34 or 82 octets		
RE6	User-user	Transmission	4.5.29	MB8T:O	[ ] Yes [ ] No [ ]	Note 2		

Note 1: Mandatory if this message is the first call clearing message

Note 2: The minimum length is 2 octets; the standard default maximum length is 131 octets.

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Item	Protocol Features		References	Status	Support N/A	Type/Length/Value		Note
						Allowed	Support	
	RELEASE COMPLETE		3.2.8					
RC1	Protocol discriminator	Transmission	4.2	MB9T:M	[ ] Yes [ ]	1 octet		
		Receipt		MB9R:M	[ ] Yes [ ]			
RC2	Call reference	Transmission	4.3	MB9T:M	[ ] Yes [ ]	2-n octets		
		Receipt		MB9R:M	[ ] Yes [ ]			
RC3	Message type	Transmission	4.4	MB9T:M	[ ] Yes [ ]	1 octet		
		Receipt		MB9R:M	[ ] Yes [ ]			
RC4	Cause	Transmission	4.5.12	MB9T:O Note 1	[ ] Yes [ ] No [ ]	2-32 octets		
		Receipt		MB9R:O Note 1	[ ] Yes [ ] No [ ]			
RC5	Display	Receipt	4.5.15	MB9R:O	[ ] Yes [ ] No [ ]	2-34 or 82 octets		
RC6	User-user	Transmission	4.5.29	MB9T:O	[ ] Yes [ ] No [ ]	Note 2		

Note 1: Mandatory if this message is the first call clearing message

Note 2: The minimum length is 2 octets; the standard default maximum length is 131 octets.

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Item	Protocol Features		References	Status	Support N/A	Type/Length/Value Allowed	Type/Length/Value Support	Note
	STATUS		3.2.10, 3.4.3					
ST1	Protocol discriminator	Transmission	4.2	MB10T:M	[ ] Yes [ ]	1 octet		
		Receipt		MB10R:M	[ ] Yes [ ]			
ST2	Call reference	Transmission	4.3	MB10T:M	[ ] Yes [ ]	2-n octets		
		Receipt		MB10R:M	[ ] Yes [ ]			
ST3	Message type	Transmission	4.4	MB10T:M	[ ] Yes [ ]	1 octet		
		Receipt		MB10R:M	[ ] Yes [ ]			
ST4	Cause	Transmission	4.5.12	MB10T:M	[ ] Yes [ ]	4-32 octets		
		Receipt		MB10R:M	[ ] Yes [ ]			
ST5	Call state	Transmission	4.5.7	MB10T:M	[ ] Yes [ ]	3 octets		
		Receipt		MB10R:M	[ ] Yes [ ]			
ST6	Display	Receipt	4.5.15	MB10R:O	[ ] Yes [ ] No [ ]	2-34 or 82 octets		

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Item	Protocol Features		References	Status	Support N/A	Type/Length/Value		Note
						Allowed	Support	
	STATUS ENQUIRY		3.2.11					
SE1	Protocol discriminator	Transmission	4.2	MB11T:M	[ ] Yes [ ]	1 octet		
		Receipt		MB11R:M	[ ] Yes [ ]			
SE2	Call reference	Transmission	4.3	MB11T:M	[ ] Yes [ ]	2-n octets		
		Receipt		MB11R:M	[ ] Yes [ ]			
SE3	Message type	Transmission	4.4	MB11T:M	[ ] Yes [ ]	1 octet		
		Receipt		MB11R:M	[ ] Yes [ ]			
SE4	Display	Receipt	4.5.15	MB11R:O	[ ] Yes [ ] No [ ]	2-34 or 82 octets		

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Item	Protocol Features		References	Status	Support N/A	Type/Length/Value		Note
						Allowed	Support	
	RESTART		3.4.1					
RS1	Protocol discriminator	Transmission	4.2	MB12T:M	[ ] Yes [ ]	1 octet		
		Receipt		MB12R:M	[ ] Yes [ ]			
RS2	Call reference	Transmission	4.3	MB12T:M	[ ] Yes [ ]	2-n octets		
		Receipt		MB12R:M	[ ] Yes [ ]			
RS3	Message type	Transmission	4.4	MB12T:M	[ ] Yes [ ]	1 octet		
		Receipt		MB12R:M	[ ] Yes [ ]			
RS4	Channel identification	Transmission	4.5.13	MB12T:M	[ ] Yes [ ]	2-n octets		
		Receipt		MB12R:M	[ ] Yes [ ]			
RS5	Display	Receipt	4.5.15	MB12R:O	[ ] Yes [ ] No [ ]	2-34 or 82 octets		
RS6	Restart indicator	Transmission	4.5.24	MB12T:M	[ ] Yes [ ]	3 octets		
		Receipt		MB12R:M	[ ] Yes [ ]			

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Item	Protocol Features		References	Status	Support N/A	Type/Length/Value		Note
						Allowed	Support	
	RESTART ACKNOWLEDGE		3.4.2					
RA1	Protocol discriminator	Transmission	4.2	MB13T:M	[ ] Yes [ ]	1 octet		
		Receipt		MB13R:M	[ ] Yes [ ]			
RA2	Call reference	Transmission	4.3	MB13T:M	[ ] Yes [ ]	2-n octets		
		Receipt		MB13R:M	[ ] Yes [ ]			
RA3	Message type	Transmission	4.4	MB13T:M	[ ] Yes [ ]	1 octet		
		Receipt		MB13R:M	[ ] Yes [ ]			
RA4	Channel identification	Transmission	4.5.13	MB13T:O	[ ] Yes [ ]	2-n octets		
		Receipt		MB13R:M	[ ] Yes [ ]			
RA5	Display	Receipt	4.5.15	MB13R:O	[ ] Yes [ ] No [ ]	2-34 or 82 octets		
RA6	Restart indicator	Transmission	4.5.24	MB13T:M	[ ] Yes [ ]	3 octets		
		Receipt		MB13R:M	[ ] Yes [ ]			

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B.2.9 Supported Timer

Item	Protocol Features	References	Status	Support	Type/Length/Value		Note
				N/A	Allowed	Support	
TM1	T305 (DISCONNECT sent)	Table 9.2	MC6:M	[ ] Yes [ ]	30s		
TM2	T308 (RELEASE sent)	Table 9.2	M	Yes [ ]	4s (Note 1)		
TM3	T309 (Data Link disconnection)	Table 9.2	O	Yes [ ] No [ ]	90s		
TM4	T313 (CONNECT sent)	Table 9.2	M	Yes [ ]	4s (Note 1)		
TM5	T314 (Message segment received)	Table 9.2 Annex K	MC13:M	[ ] Yes [ ]	4s		
TM6	T316 (RESTART sent)	Table 9.2 5.5	MC8:M	[ ] Yes [ ]	2min		
TM7	T317 (RESTART received)	Table 9.2 5.5	MC8:M	[ ] Yes [ ]	(Note 2)		
TM8	T321(D-channel failure)	Table 9.2 Annex F	MC15:M	[ ] Yes [ ]	30s		
TM9	T322 (STATUS-ENQUIRY sent)	Table 9.2 5.8.10	MC11:M	[ ] Yes [ ]	4s		

Note 1: This default value assumes the use of default values at layer 2; i.e., (N200+1) times T200.
Whether these values should be modified when layer 2 default values are modified by an automatic negotiation procedure is for further study.

Note 2: The value of this timer is implementation dependent, but should be less than the value of T316.

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B.2.10 Implemented Information Elements

<Implemented Bearer Capability> -Receipt-

Item	Protocol Features	References	Status	Support	Type/Length/Value		Note
				N/A	Allowed	Support	
BR1	Octet 1	4.5.5	M	Yes [ ]			
BR2	Octet 2 length of bearer capability contents	4.5.5	M	Yes [ ]			
BR3.1	Octet 3 bit 8 length is 1 octet	4.5.5	M	Yes [ ]			
BR3.2	Octet 3 bit 6 and 7	4.5.5					
	1. Coding, CCITT		O.4	Yes [ ] No [ ]			
	2. Coding Standard, international		O.4	Yes [ ] No [ ]			
	3. Coding Standard, national		O.4	Yes [ ] No [ ]			
	4. Coding Standard, network		O.4	Yes [ ] No [ ]			
BR3.3	Octet 3 bit 1 to 5	4.5.5					
	1. Information transfer capability, speech		–	[ ]			
	2. Information transfer capability, unrestricted digital information		O.5	Yes [ ] No [ ]			
	3. Information transfer capability, restricted digital information		O.5	Yes [ ] No [ ]			
	4. Information transfer capability, 3.1KHz audio		–	[ ]			
	5. Information transfer capability, 7KHz audio		–	[ ]			
	6. Information transfer capability, video		–	[ ]			

Item	Protocol Features	References	Status	Support		Type/Length/Value		Note
				N/A		Allowed	Support	
BR4.1	Octet 4 bit 8	4.5.5						
	1. length is 1 octet		M		Yes [ ]			
	2. length is 2/3 octets		–	[ ]				
BR4.2	Octet 4 bit 6 and 7	4.5.5						
	1. Transfer mode circuit		–	[ ]				
	2. Transfer mode packet		M		Yes [ ]			
BR4.3	Octet 4 bit 1 to 5, Information transfer rate, origination to destination	4.5.5						
	1. packet mode		M		Yes [ ]			
	2. 64kbit/s		–	[ ]				
	3. 2 x 64kbit/s		–	[ ]				
	4. 384kbit/s		–	[ ]				
	5. 1536kbit/s		–	[ ]				
	6. 1920kbit/s		–	[ ]				
BR6	Existence of octet 6	4.5.5	M		Yes [ ]			
BR6.1	Octet 6 bit 8, no extension	4.5.5	M		Yes [ ]			
BR6.2	Octet 6 bit 6 and 7, layer 2 identity	4.5.5	M		Yes [ ]			
BR6.3	Octet 6 bit 1 to 5c	4.5.5						
	1. Q.921		DP:M	[ ]	Yes [ ]			
	2. X.25 link level		BP:M	[ ]	Yes [ ]			

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Item	Protocol Features	References	Status	Support N/A	Type/Length/Value Allowed	Type/Length/Value Support	Note
BR7	Existence of octet 7	4.5.5	M	Yes [ ]			
BR7.1	Octet 7 bit 8, no extension	4.5.5	M	Yes [ ]			
BR7.2	Octet 7 bit 6 and 7, layer 3 identity	4.5.5	M	Yes [ ]			
BR7.3	Octet 7 bit 1 to 5c 1. Q.931 2. X.25 packet level	4.5.5	– M	[ ] Yes [ ]			

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