3 Message functional definitions and content

This subclause provides an overview of the Q.931 message structure, which highlights the functional definition and information content (i.e. semantics) of each message. Each definition includes:

a) A brief description of the message direction and use, including whether the message has:

1) Local significance, i.e. relevant only in the originating or terminating access;

2) Access significance, i.e. relevant in the originating and terminating access, but not in the network; 3) Dual significance, i.e. relevant in either the originating or terminating access and in the network; or 4) Global significance, i.e. relevant in the originating and terminating access and in the network.

b) A table listing the codeset 0 information elements in the order of their appearance in the message (same relative order for all message types). For each information element the table indicates:

1) the clause of this Specification describing the information element;

2) the direction in which it may be sent; i.e. user to network ("u → n"), network to user ("n → u"), or both;

NOTE 1 – The user-network terminology in 3 refers to the TE-ET, TE-NT2, and NT2-ET interface structures. Annex D contains a description of the information element usage for symmetric NT2-NT2 interfaces.

3) whether inclusion is mandatory ("M") or optional ("O"), with a reference to Notes explaining the circumstances under which the information element shall be included;

4) the length of the information element (or permissible range of lengths), in octets, where "*" denotes an information element that is not currently implemented by Telecom or a maximum length that is dependent on the interface type. In the latter case refer to the description of the information element for details.;

NOTE 2 – All messages may contain information elements from codesets 5, 6 and 7 and corresponding locking and non-locking shift information elements which comply with the coding rules specified in 4.5.2-4.5.4. None of these information elements, however, are listed in any of the tables in clause 3 No information elements from codesets 5, 6 and 7 are currently used on Telecom's public or Centrex ISDN interface.

c) further explanatory Notes, as necessary

3.1 Messages for circuit mode connection control

Table 3-1/B summarizes the messages for circuit-mode connection control.

TABLE 3-1/B

Messages for circuit-mode connection control

	Reference (subclauses)
Call establishment messages:	
ALERTING	3.1.1
CALL PROCEEDING	3.1.2
CONNECT	3.1.3
CONNECT ACKNOWLEDGE	3.1.4
PROGRESS	3.1.8
SETUP	3.1.14
SETUP ACKNOWLEDGE	3.1.15
Call information phase messages:	
RESUME	3.1.11
RESUME ACKNOWLEDGE	3.1.12
RESUME REJECT	3.1.13
SUSPEND	3.1.18
SUSPEND ACKNOWLEDGE	3.1.19
SUSPEND REJECT	3.1.20
Call clearing messages:	
DISCONNECT	3.1.5
RELEASE	3.1.9
RELEASE COMPLETE	3.1.10
Miscellaneous messages:	
INFORMATION	3.1.6
NOTIFY	3.1.7
STATUS	3.1.16
STATUS ENQUIRY	3.1.17
NOTE – In ITU-T Recommendation Q.931 (1988) [53], support of user-user signalling was included for a number of reasons, including support of additional compatibility checking upon bilateral agreement with other users or in accordance with other standards (e.g. ITU-T Recommendation X.213 [23]). To utilize this capability, the User-user information element can be included in the ALERTING, CONNECT, DISCONNECT, PROGRESS, RELEASE, RELEASE COMPLETE and SETUP messages. Details on this capability (explicit and implicit Type 1 user-user signalling) are given in ITU-T Recommendation Q.957 [54].	

3.1.1 ALERTING

This message is sent by the called user to the network and by the network to the calling user, to indicate that called user

TABLE 3-2/B
ALERTING message content

Message type: ALERTING
Significance: global
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
~~Bearer capability~~	~~4.5~~	~~Both~~	~~O (Note 1)~~	~~4-12~~
Channel identification	4.5	Both (Note 2)	O (Note 3)	2-*
Progress indicator	4.5	Both	O (Note 4)	2-4
Display	4.5	n → u	O (Note 5)	2-82
Signal	4.5	n → u	O (Note 7)	2-3
~~High layer compatibility~~	~~4.5~~	~~Both~~	~~O (Note 8)~~	~~2-5~~
User-user	4.7	Both	O (Note 9)	2-131

NOTES

1 The Bearer capability information element is included when the procedures of 5.11 for bearer capability selection apply. When present, progress description No. 5, *interworking has occurred and has resulted in a telecommunication service change* shall also be present. Not currently used by Telecom.

2 Included in the network to user direction for support of the procedures in Annex D. Not currently used by Telecom.

3 Mandatory if this message is the first message in response to a SETUP, unless the user accepts the B-channel indicated in the SETUP message.

4 Included in the event of interworking. Included in the network-to-user direction in connection with the provision of in-band information/patterns. Included in the user-to-network direction in connection with the provision of in-band information/patterns if Annex K is implemented or in accordance with the procedures of 5.11.3 and 5.12.3. 5 Included if the network provides information that can be presented to the user.

6 Not used

7 Included if the network optionally provides information describing tones or alerting signals.

8 The High layer compatibility information element is included when the procedures of 5.12 for high layer compatibility selection apply. When present, progress description No. 5, *interworking has occurred and has resulted in a telecommunication service change* shall also be present. Not currently used by Telecom.

9 May be included for User-to-user supplementary service 1. Permitted on point-to-point configurations only.

3.1.2 CALL PROCEEDING

This message is sent by the called user to the network or by the network to the calling user to indicate that requested call establishment has been initiated and no more call establishment information will be accepted. See Table 3-3/B.

TABLE 3-3/B

CALL PROCEEDING message content

Message type: CALL PROCEEDING
Significance: local
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
~~Bearer capability~~	~~4.5~~	~~Both~~	~~O (Note 5)~~	~~4-12~~
Channel identification	4.5	Both	O (Note 1)	2-*
Progress indicator	4.5	Both	O (Note 2)	2-4
Display	4.5	n → u	O (Note 3)	2-82
~~High layer compatibility~~	~~4.5~~	~~Both~~	~~O (Note 6)~~	~~2-5~~

NOTES

1 Mandatory in the network-to-user direction if this message is the first message in response to a SETUP message. It is mandatory in the user-to-network direction if this message is the first message in response to a SETUP message, unless the user accepts the B-channel indicated in the SETUP message.

2 Included in the event of interworking. Included in the network to user direction in connection with the provision of in-band information/patterns. Included in the user to network direction in connection with the provision of in-band information/patterns if Annex K is implemented or in accordance with the procedures of 5.11.3 and 5.12.3. 3 Included if the network provides information that can be presented to the user.

4 Not used.

5 The Bearer capability information element is included when the procedures of 5.11 for bearer capability selection apply. When present, progress indication No. 5, *interworking has occurred and has resulted in a telecommunication service change* shall also be present. Not currently used by Telecom.

6 The High layer compatibility information element is included when the procedures of 5.12 for high layer compatibility selection apply. When present, progress description No. 5, *interworking has occurred and has resulted in a telecommunication service change* shall also be present. Not currently used by Telecom.

3.1.3 CONNECT

This message is sent by the called user to the network and by the network to the calling user, to indicate call acceptance by the called user. See Table 3-4/B.

TABLE 3-4/B

CONNECT message content

Message type: CONNECT
Significance: global
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
~~Bearer capability~~	~~4.5~~	~~Both~~	~~O (Note 1)~~	~~4-12~~
Channel identification	4.5	Both (Note 2)	O (Note 3)	2-*
Progress indicator	4.5	Both	O (Note 4)	2-4
Display	4.5	n → u	O (Note 5)	2-82
Date/time	4.5	n → u	O (Note 7)	8
Signal	4.5	n → u	O (Note 8)	2-3
Connected number	4.7	Both	O (Note 11)	2-21
Connected sub-address	4.7	Both	O (Note 12)	2-23
Low layer compatibility	4.5	Both	O (Note 9)	2-16
~~High layer compatibility~~	~~4.5~~	~~Both~~	~~O (Note 10)~~	~~2-5~~
User-user	4.7	Both	O (Note 13)	2-131

NOTES

1 The Bearer capability information element is included when the procedures of 5.11 for bearer capability selection apply. Not currently used by Telecom.

2 Included in the network-to-user direction for support of the procedures in Annex D.

3 Mandatory if this is the first message in response to a SETUP, unless the user accepts the B-channel indicated in the SETUP message.

4 Included in the event of interworking or in connection with the provision of in-band information/patterns.

5 Included if the network provides information that can be presented to the user.

6 Note not used.

7 Included if the calling user has subscribed to the Date/time issue to provide date and time information to the calling user for all circuit-switched calls.

8 Included if the network optionally provides additional information describing tones.

9 Included in the user-to-network when the answering user wants to return low layer compatibility information to the calling user. Included in the network-to-user direction if the user awarded the call included a Low layer compatibility information element in the CONNECT message. Optionally included for low layer compatibility negotiation, but some networks may not transport this information element to the calling user (see Annex J). Telecom does support this function.

10 The High layer compatibility information element is included when the procedures of 5.12 for high layer compatibility selection apply. Not currently used by Telecom.

11 Included in the network-to-user direction if the calling user has subscribed to the Connected line presentation service. Included in the user-to-network direction if the user wishes to identify the DDI number that answered the call. 12 Included if connected subaddress information is associated with Connected line presentation service.

13 May be included for User-to-user supplementary service 1.

3.1.4 CONNECT ACKNOWLEDGE

This message is sent by the network to the called user to indicate the user has been awarded the call. It may also be sent by the calling user to the network to allow symmetrical call control procedures. See Table 3-5/B.

TABLE 3-5/B

CONNECT ACKNOWLEDGE message content

Message type: CONNECT ACKNOWLEDGE
Significance: local
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Display	4.5	n → u	O (Note 1)	2-82
Signal	4.5	n → u	O (Note 3)	2-3

NOTES

1 Included if the network provides information that can be presented to the user.

2 Note not used.

3 Included if the network optionally provides additional information describing tones.

3.1.5 DISCONNECT

This message is sent by the user to request the network to clear an end-to-end connection or is sent by the network to indicate that the end-to-end connection is cleared. See Table 3-6/B.

TABLE 3-6/B

DISCONNECT message content

Message type: DISCONNECT
Significance: global
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Cause	4.5	Both	M	4-32
Progress indicator	4.5	(Note 1)	O (Note 2)	2-4
Display	4.5	n → u	O (Note 3)	2-82
Signal	4.5	n → u	O (Note 5)	2-3
User-user	4.7	Both	O (Note 6)	2-131

NOTES

1 Included in the network-to-user direction if the network provides in-band tones. See Annex D for usage in the user-to-network direction.

2 Included by the network if in-band tones are provided. However, the user may include the progress indicator and provide inband tones. See Annex D. In such cases the network will ignore this information element and will not convey the in-band tones.

3 Included if the network provides information that can be presented to the user.

4 Note not used.

5 Included if the network optionally provides additional information describing tones.

6 May be included for User-to-user supplementary service 1 where the DISCONNECT is the first clearing message.

3.1.6 INFORMATION

This message is sent by the user or the network to provide additional information. It may be used to provide information for call establishment (e.g. overlap sending) or miscellaneous call-related information. See Table 3-7/B.

TABLE 3-7/B

INFORMATION message content

Message type: INFORMATION
Significance: local (Note 1)
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M (Note 2)	2-*
Message type	4.4	Both	M	1
Sending complete	4.5	Both	O (Note 3)	1
Display	4.5	n → u	O (Note 4)	2-82
Keypad facility	4.5	u → n	O (Note 6)	2-34
Information request	4.7	n → u	O (Note 9)	3
Signal	4.5	n → u	O (Note 7)	2-3
Feature activation	4.7	u → n	O (Note 10)	2-4
Called party number	4.5	u → n	O (Note 8)	2-27

NOTES

1 This message has local significance, but may carry information of global significance.

2 This message may be sent with the dummy call reference defined in 4.3 when feature key management procedures are used (see ITU-T Recommendation Q.932); otherwise the minimum length is 2 octets.

3 Included if the user optionally indicates completion of overlap sending to the network, or if the network optionally indicates completion of overlap receiving to the user.

4 Included if the network provides information that can be presented to the user.

5 Note not used.

6 Either the Called party number or the Keypad facility information element is included by the user to transfer called party number information to the network during overlap sending. The Keypad facility information element may also be included if the user wants to convey other call establishment information to the network, or to convey supplementary service information.

7 Included if the network optionally provides additional information describing tones.

8 Either the Called party number or the Keypad facility information element is included by the user to convey called party number information to the network during overlap sending. The Called party number information element is included by the network to convey called party number information to the user during overlap receiving.

9 Used by the network to request additional information from the user.

10 Used by the user to invoke a supplementary service.

3.1.7 NOTIFY

This message is sent by the user or the network to indicate information pertaining to a call, such as user suspended. See Table 3-8/B.

TABLE 3-8/B

NOTIFY message content

Message type: NOTIFY
Significance: access
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
~~Bearer capability~~	~~4.5~~	~~n → u~~	~~O (Note 1)~~	~~2-12~~
Notification indicator	4.5	Both	M	3
Display	4.5	n → u	O (Note 2)	2-82

NOTES

1 Included by the network to indicate a change of the bearer capability (see Annex L). Not currently used by Telec ɔm.

2 Included if the network provides information that can be presented to the user.

3.1.8 PROGRESS

This message is sent by the user or the network to indicate the progress of a call in the event of interworking or in relation with the provision of in-band information/patterns. See Table 3-9/B.

TABLE 3-9/B

PROGRESS message content

Message type: PROGRESS
Significance: global
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
~~Bearer capability~~	~~4.5~~	~~Both~~	~~O (Note 1)~~	~~4-12~~
Cause	4.5	Both	O (Note 2	2-32
Progress indicator	4.5	Both	M	4
Display	4.5	n → u	O (Note 3)	2-82
~~High layer compatibility~~	~~4.5~~	~~Both~~	~~O (Note 5)~~	~~2-5~~
User-user	4.7	n → u	O (Note 6)	2-131

NOTES

1 The Bearer capability information element is included when the procedures of 5.11 for bearer capability selection apply. The Bearer capability information element indicates the bearer service now being used for the call. Not currently used by Telecom. 2 Included by the user or the network to provide additional information concerning the provision of in-band information/patterns.

3 Included if the network provides information that can be presented to the user.

4 Note not used.

5 The High layer compatibility information element is included when the optional procedures of 5.12 for high layer compatibility selection apply. The High layer compatibility information element indicates the high layer compatibility now being used for the call. Not currently used by Telecom.

6 Included (e.g. in conjunction with in-band tones or announcements) for user-user signalling service 1 when the PROGRESS message is sent by the network to indicate that the call has been cleared before reaching the active state by the remote user, and a User-user information element was present in the clearing message.

3.1.9 RELEASE

This message is sent by the user or the network to indicate that the equipment sending the message has disconnected the channel (if any) and intends to release the channel and the call reference. Thus, the receiving equipment should release the channel and prepare to release the call reference after sending a RELEASE COMPLETE. See Table 3-10/B.

TABLE 3-10/B

RELEASE message content

Message type: RELEASE
Significance: local (Note 1)
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Cause	4.5	Both	O (Note 2	2-32
Display	4.5	n → u	O (Note 3)	2-82
Signal	4.5	n → u	O (Note 5)	2-3
User-user	4.7	n → u	O (Note 6)	2-131

NOTES

1 This message has local significance; however, it may carry information of global significance when used as the first call clearing message.

2 Mandatory in the first call clearing message, including when the RELEASE message is sent as a result of an error handling condition.

3 Included if the network provides information that can be presented to the user.

4 Note not used.

5 Included if the network optionally provides additional information describing tones.

6 May be included for UUS service 1 where RELEASE is the first clearing message. Not included otherwise.

3.1.10 RELEASE COMPLETE

This message is sent by the user or the network to indicate that the equipment sending the message has released the channel (if any) and call reference, the channel is available for reuse, and the receiving equipment shall release the call reference. See Table 3-11/B.

TABLE 3-11/B

RELEASE COMPLETE message content

Message type: RELEASE COMPLETE
Significance: local (Note 1)
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Cause	4.5	Both	O (Note 2	2-32
Display	4.5	n → u	O (Note 3)	2-82
Signal	4.5	n → u	O (Note 5)	2-3
User-user	4.7	n → u	O (Note 6)	2-131

NOTES

1 This message has local significance; however, it may carry information of global significance when used as the first call clearing message.

2 Mandatory in the first call clearing message, including when the RELEASE COMPLETE message is sent as a result of an error handling condition.

3 Included if the network provides information that can be presented to the user.

4 Note not used.

5 Included if the network optionally provides additional information describing tones.

6 May be included for UUS service 1 where a RELEASE COMPLETE message is sent by the user to reject an incoming SETUPmessage. Not included otherwise.

3.1.11 RESUME

This message is sent by the user to request the network to resume a suspended call. See Table 3-12/B.

TABLE 3-12/B

RESUME message content

Message type: RESUME Significance: local Direction: user to network				
Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	u → n	M	1
Call reference	4.3	u → n	M	2-*
Message type	4.4	u → n	M	1
Call identity	4.5	u → n	O (Note)	2-10
NOTE – Included when the SUSPEND message used to suspend the call included a Call identity information element .				

3.1.12 RESUME ACKNOWLEDGE

This message is sent by the network to the user to indicate completion of a request to resume a suspended call. See Table 3-13/B.

TABLE 3-13/B

RESUME ACKNOWLEDGE message content

Message type: RESUME ACKNOWLEDGE Significance: local Direction: network to user				
Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	n → u	M	1
Call reference	4.3	n → u	M	2-*
Message type	4.4	n → u	M	1
Channel identification	4.5	n → u	M	3-*
Display	4.5	n → u	O (Note 1)	2-82
NOTES 1 Included if the network provides information that can be presented to the user.				

3.1.13 RESUME REJECT

This message is sent by the network to the user to indicate failure of a request to resume a suspended call. See Table 3-14/B.

TABLE 3-14/B

RESUME REJECT message content

Message type: RESUME REJECT Significance: local Direction: network to user				
Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	n → u	M	1
Call reference	4.3	n → u	M	2-*
Message type	4.4	n → u	M	1
Cause	4.5	n → u	M	4-32
Display	4.5	n → u	O (Note 1)	2-82
NOTES 1 Included if the network provides information that can be presented to the user.				

3.1.14 SETUP

This message is sent by the calling user to the network and by the network to the called user to initiate call establishment. See Table 3-15/B.

TABLE 3-15/B

SETUP message content

Message type: SETUP Significance: global Direction: both				
Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Sending complete	4.5	Both	O (Note 1)	1
~~Repeat indicator~~	~~4.5~~	~~Both~~	~~O (Note 2)~~	~~1~~
Bearer capability	4.5	Both	M (Note 3)	4-12
Channel identification	4.5	Both	O (Note 4)	2-*
Progress indicator	4.5	Both	O (Note 5)	2-4
~~Network specific facilities~~	~~4.5~~	~~Both~~	~~O (Note 6)~~	~~2-*~~
Display	4.5	n → u	O (Note 7)	2-82
Date/time	4.5	n → u	O (Note 21)	8
Keypad facility	4.5	u → n	O (Note 9)	2-34
Signal	4.5	n → u	O (Note 10)	2-3
Calling party number	4.5	Both	O (Note 11)	2-21
Calling party subaddress	4.5	Both	O (Note 12)	2-23
Called party number	4.5	Both	O (Note 13)	2-27
Called party subaddress	4.5	Both	O (Note 14)	2-23
Redirecting number	4.6.7	n → u	O(Note 19)	2-29
Transit network selection	4.5	u → n	O (Note 15)	2-6
~~Repeat indicator~~	~~4.5~~	~~Both~~	~~O (Note 16)~~	~~1~~
Low layer compatibility	4.5	Both	O (Note 17)	2-16
High layer compatibility	4.5	Both	O (Note 18)	2-5
User-user	4.7	Both	O (Note 20)	2-131

NOTES

1 Included if the user or the network optionally indicates that all information necessary for call establishment is included in the SETUP message. Will always be included by the network when the Called party number information element is included.

2 The Repeat indicator information element is included immediately before the first Bearer capability information element when the bearer capability negotiation procedure is used (see Annex L). Not currently used by Telecom.

3 May be repeated if the bearer capability negotiation procedure is used (see Annex L). For bearer capability negotiation, two Bearer capability information elements may be included in descending order of priority, i.e., highest priority first. Although support of multiple Bearer capability information elements may not be supported on all networks, on networks that do support it, and through suitable subscription arrangements, two Bearer capability information elements may be included (see 5.11). When they are not preceded by a Repeat indicator information element, they are included in ascending order of priority. Currently only one Bearer capability information element is supported by Telecom.

4 Mandatory in the network-to-user direction. Included in the user-to-network direction when a user wants to indicate a channel. If not included, its absence is interpreted as “any channel acceptable”.

5 Included in the event of interworking or in connection with the provision of in-band information/patterns.

6 Included by the calling user or the network to indicate network specific facilities information (see Annex E). Not currently used by Telecom.

7 Included if the network provides information that can be presented to the user.

8 Note not used.

9 Either the Called party number or the Keypad facility information element is included by the user to convey called party number information to the network. The Keypad facility information element may also be included by the user to convey other call establishment information to the network.

10 Included if the network optionally provides additional information describing tones.

11 May be included by the calling user or the network to identify the calling user. Not included in the network-to-user direction for basic call control, but may be included for some supplementary services. Included in the network-to-user direction for Calling Line Identification Presentation (Caller Display).

12 Included in the user-to-network direction when the calling user wants to indicate the calling party subaddress. Not included in the network-to-user direction for basic call control, but may be included for some supplementary services. May be included in the network-to-user direction for Calling Line Identification Presentation (Caller Display).

13 Either the Called party number or the Keypad facility information element is included by the user to convey called party number information to the network. The Called party number information element is included by the network when called party number information is to be conveyed to the user.

14 Included in the user-to-network direction when the calling user wants to indicate the called party subaddress. Included in the network-to-user direction if the calling user included a Called party subaddress information element in the SETUP message.

15 Included by the calling user to select a particular transit network (see Annex C).

16 Included when two or more Low layer compatibility information elements are included for low layer compatibility negotiation. Not currently used by Telecom.

17 Included in the user-to-network direction when the calling user wants to pass low layer compatibility information to the called user. Included in the network-to-user direction if the calling user included a Low layer compatibility information element in the SETUP message. ~~Two, three or four information elements may be included in descending order of priority, i.e. highest priority first, if the low layer compatibility negotiation procedures are used (see Annex J).~~ Only one Low layer compatibility information element is supported.

18 Included in the user-to-network direction when the calling user wants to pass high layer compatibility information to the called user. Included in the network-to-user direction if the calling user included a High layer compatibility information element in the SETUP message. Although support of multiple High layer compatibility information elements may not be supported on all networks, on networks that do support it, and through suitable subscription arrangements, two High layer compatibility information elements may be included (see 5.12). When they are not preceded by a Repeat indicator information element, they are included in ascending order of priority. Only one High layer compatibility information element is supported.

19 Included if the called user has subscribed to the Dialled Number Information Service and the call has been diverted. Two information elements will be included identifying the last and first diverting numbers.

20 Always included for implicit User-user service 1 activation; the length must be at least three octets. Not included otherwise.

21 Included if the called user has subscribed to the Date/time service to provide date and time information to the called user for allcircuit-switched calls.

3.1.15 SETUP ACKNOWLEDGE

This message is sent by the network to the calling user, or by the called user to the network, to indicate that call establishment has been initiated, but additional information may be required. See Table 3-16/B.

TABLE 3-16/B

SETUP ACKNOWLEDGE message content

Message type: SETUP ACKNOWLEDGE
Significance: local
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Channel identification	4.5	Both	O (Note 1)	2-*
Progress indicator	4.5	Both	O (Note 2)	2-4
Display	4.5	n → u	O (Note 3)	2-82
Signal	4.5	n → u	O (Note 5)	2-3

NOTES

1 Mandatory in all cases, except when the user accepts the specific B-channel indicated in the SETUP message.

2 Included in the event of interworking or in connection with the provision of in-band information/patterns.

3 Included if the network provides information that can be presented to the user.

4 Note not used.

5 Included if the network optionally provides information describing tones (e.g. activate dial tone).

3.1.16 STATUS

This message sent is by the user or the network in response to a STATUS ENQUIRY message or at any time during a call to report certain error conditions listed in 5.8. See Table 3-17/B.

TABLE 3-17/B

STATUS message content

Message type: STATUS Significance: local Direction: both				
Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Cause	4.5	Both	M	4-32
Call state	4.5	Both	M	3
Display	4.5	n → u	O (Note 1)	2-82

NOTES 1 Included if the network provides information that can be presented to the user.

3.1.17 STATUS ENQUIRY

The STATUS ENQUIRY message is sent by the user or the network at any time to solicit a STATUS message from the peer layer 3 entity. Sending a STATUS message in response to a STATUS ENQUIRY message is mandatory. See Table 3-18/B.

TABLE 3-18/B

STATUS ENQUIRY message content

Message type: STATUS ENQUIRY Significance: local Direction: both				
Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Display	4.5	n → u	O (Note 1)	2-82
NOTES 1 Included if the network provides information that can be presented to the user.				

3.1.18 SUSPEND

This message is sent by the user to request the network to suspend a call. See Table 3-19/B.

TABLE 3-19/B

SUSPEND message content

Message type: SUSPEND Significance: local Direction: user to network				
Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	u → n	M	1
Call reference	4.3	u → n	M	2-*
Message type	4.4	u → n	M	1
Call identity	4.5	u → n	O (Note)	2-10
NOTE – Included if the user wants to identify the suspended call explicitly.				

3.1.19 SUSPEND ACKNOWLEDGE

This message is sent by the network to the user to indicate completion of a request to suspend a call. See Table 3-20/B.

TABLE 3-20/B

SUSPEND ACKNOWLEDGE message content

Message type: SUSPEND ACKNOWLEDGE
Significance: local
Direction: network to user

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	n → u	M	1
Call reference	4.3	n → u	M	2-*
Message type	4.4	n → u	M	1
Display	4.5	n → u	O (Note 1)	2-82

NOTES

1 Included if the network provides information that can be presented to the user.

3.1.20 SUSPEND REJECT

This message is sent by the network to the user to indicate failure of a request to suspend a call. See Table 3-21/B.

TABLE 3-21/B

SUSPEND REJECT message content

Message type: SUSPEND REJECT
Significance: local
Direction: network to user

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	n → u	M	1
Call reference	4.3	n → u	M	2-*
Message type	4.4	n → u	M	1
Cause	4.5	n → u	M	4-32
Display	4.5	n → u	O (Note 1)	2-82

NOTES

1 Included if the network provides information that can be presented to the user.

3.2 Messages for packet mode connection control

Table 3-22/B summarizes the messages for packet-mode access connection control. The message tables in this subclause should be used for Case B (packet switched access to an ISDN virtual circuit service) as defined in clause 6. For Case A (circuit switched access to PSPDN services) the message tables in 3.1 should be used. Telecom supports Case A packet access.

TABLE 3-22/B

Messages for packet-mode access connection control

	Reference (subclause)
Access connection establishment messages:	
ALERTING	3.2.1
CALL PROCEEDING	3.2.2
CONNECT	3.2.3
CONNECT ACKNOWLEDGE	3.2.4
PROGRESS	3.2.6
SETUP	3.2.9
Access connection clearing messages:	
DISCONNECT	3.2.5
RELEASE	3.2.7
RELEASE COMPLETE	3.2.8
Miscellaneous messages:	
STATUS	3.2.10
STATUS ENQUIRY	3.2.11

3.2.1 ALERTING

This message is sent by the called user to the network to indicate that called user alerting has been initiated. See Table 3-23/B.

TABLE 3-23/B

ALERTING message content

Message type: ALERTING
Significance: local
Direction: user to network

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	u → n	M	1
Call reference	4.3	u → n	M	2-*
Message type	4.4	u → n	M	1
Channel identification	4.5	u → n	O (Note 1)	2-*
Progress indicator	4.5	u → n	O (Note 2)	2-4

NOTES

1 Mandatory if this message is the first message in response to SETUP, unless the user accepts the channel indicated in the SETUP message.

2 Included in the event of interworking within a private network.

3.2.2 CALL PROCEEDING

This message is sent by the called user or by the network to the calling user to indicate that requested access connection establishment has been initiated. See Table 3-24/B.

TABLE 3-24/B

CALL PROCEEDING message content

Message type: CALL PROCEEDING
Significance: local
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Channel identification	4.5	Both	O (Note 1)	2-*
Progress indicator	4.5	u → n	O (Note 2)	2-4
Display	4.5	n → u	O (Note 3)	2-82

NOTES

1 Mandatory in the network-to-user direction if this message is the first message in response to a SETUP. Mandatory in the user-to-network direction if this message is the first message in response to SETUP message, unless the user accepts the channel indicated in the SETUP message.

2 Included in the event of interworking. Included in the network-to-user direction in connection with the provision of in-band information/patterns. Included in the user-to-network direction in connection with in-band information/patterns if Annex K is implemented or in accordance with the procedures of 5.11.3 and 5.12.3.

3 Included if the network provides information that can be presented to the user.

3.2.3 CONNECT

This message is sent by the called user to the network, and by the network to the calling user, to indicate acceptance of the access connection. See Table 3-25/B.

TABLE 3-25/B

CONNECT message content

Message type: CONNECT
Significance: global
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Channel identification	4.5	u → n	O (Note 1)	2-*
Progress indicator	4.5	u → n	O (Note 4)	2-4
Display	4.5	n → u	O (Note 2)	2-82

NOTES

1. Mandatory if this message is the first message in response to SETUP, unless the user accepts the channel indicated in the SETUP message.
2. Included in the network provides information that can be presented to the user.

3.2.4 CONNECT ACKNOWLEDGE

This message is sent by the network to the called user to indicate that the user has been awarded the access connection. It may also be sent by the calling user to the network to allow symmetrical access connection control procedures. See Table 3-26/B.

TABLE 3-26/B

CONNECT ACKNOWLEDGE message content

Message type: CONNECT ACKNOWLEDGE
Significance: local
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Display	4.5	n → u	O (Note 1)	2-82

NOTES 1 Included if the network provides information that can be presented to the user.

3.2.5 DISCONNECT

This message is sent by the user to request the network to clear an access connection or is sent by the network to the user to indicate clearing of the access connection. See Table 3-27/B.

TABLE 3-27/B

DISCONNECT message contents

Message type: DISCONNECT
Significance: local
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Cause	4.5	Both	M	4-32
Display	4.5	n → u	O (Note 1)	2-82
~~User-user~~	~~4.5~~	~~u → n~~	~~O (Note 3)~~	

NOTES

1 Included if the network provides information that can be presented to the user.

2 Note not used.

3 May be sent if the access connection has not yet reached the active state. However, user-user information is not sent after the access connection has reached the active state since X.25 procedures would be used for this information transfer. Not currently used by Telecom.

3.2.6 PROGRESS

This message is sent by the called user or the network to indicate the progress of an access connection establishment in the event of interworking within a private network. See Table 3-28/B.

TABLE 3-28/B

PROGRESS message content

Message type: PROGRESS
Significance: local
Direction: user to network

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	u → n	M	1
Call reference	4.3	u → n	M	2-*
Message type	4.4	u → n	M	1
Cause	4.5	u → n	O (Note)	2-32
Progress indicator	4.5	u → n	M	4

NOTE – Included by the called user to provide additional information.

3.2.7 RELEASE

This message is sent by the user or the network to indicate that the equipment sending the message has disconnected the channel (if any) and intends to release the channel and the call reference, and that the receiving equipment should release the channel and prepare to release the call reference after sending RELEASE COMPLETE. The RELEASE message is sent by the network to the user to indicate that the access connection is awarded on either the D-channel or an existing channel and that the network intends to release the call reference. See Table 3-29/B.

TABLE 3-29/B

RELEASE message content

Message type: RELEASE
Significance: local (Note 1)
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Cause	4.5	Both	O (Note 2)	2-32
Display	4.5	n → u	O (Note 3)	2-82
~~User-user~~	~~4.5~~	~~u → n~~	~~O (Note 5)~~	

NOTES

1 This message has local significance; however, it may carry information of global significance when used as the first call clearing message.

2 Mandatory in the first clearing message, including when the RELEASE message is sent as a result of an error handling condition.

3 Included if the network provides information that can be presented to the user.

4 Note not used.

5 User-user information may be sent if RELEASE is the first clearing message and the access connection has not yet reached the active state and Q.931/X.25 mapping service is provided by the network. However, user-user information is not sent if the access connection has reached the active state since X.25 procedures would be used for this information transfer. Not currently used by Telecom.

3.2.8 RELEASE COMPLETE

This message is sent by the user or the network to indicate that the equipment sending the message has released the channel (if any) and call reference. The channel is available for reuse, and the receiving equipment shall release the call reference. See Table 3-30/B.

TABLE 3-30/B

RELEASE COMPLETE message content

Message type: RELEASE COMPLETE
Significance: local (Note 1)
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Cause	4.5	Both	O (Note 2)	2-32
Display	4.5	n → u	O (Note 3)	2-82
~~User-user~~	~~4.5~~	~~u → n~~	~~O (Note 5)~~	

NOTES

1 This message has local significance; however, it may carry information of global significance when used as the first call clearing message.

2 Mandatory in the first call clearing message, including when the RELEASE COMPLETE message is sent as a result of an error handling condition.

3 Included if the network provides information that can be presented to the user.

4 Note not used.

5 User-user information may be sent if RELEASE COMPLETE is the first clearing message and the access connection has not yet reached the active state and Q.931/X.25 mapping service is provided by the network. However, user-user information is not sent if the access connection has reached the active state since X.25 [5] procedures would be used for this information transfer. Not used by Telecom.

3.2.9 SETUP

This message is sent by the calling user to the network and by the network to the called user to initiate access connection establishment. See Table 3-31/B.

TABLE 3-31/B

SETUP message content

Message type: SETUP Significance: global Direction: both				
Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Bearer capability	4.5	Both	M (Note 1)	4-12
Channel identification	4.5	Both	O (Note 2)	2-*
Progress indicator	4.5	u → n	O (Note 3)	2-4
Display	4.5	n → u	O (Note 4)	2-82
~~Information rate~~	~~4.7~~	~~n → u~~	~~O (Note 6)~~	~~2-6~~
~~End-end transit delay~~	~~4.7~~	~~n → u~~	~~O (Note 8)~~	~~2-11~~
~~Transit delay selection and indication~~	~~4.7~~	~~n → u~~	~~O (Note 7)~~	~~2-5~~
~~Packet layer binary parameters~~	~~4.7~~	~~n → u~~	~~O (Note 9)~~	~~2-3~~
~~Packet layer window size~~	~~4.7~~	~~n → u~~	~~O (Note 10)~~	~~2-4~~
~~Packet size~~	~~4.7~~	~~n → u~~	~~O (Note 11)~~	~~2-4~~
~~Closed user group~~	~~4.7~~	~~n → u~~	~~O (Note 12)~~	~~4-7~~
~~Reverse charging indication~~	~~4.7~~	~~n → u~~	~~O (Note 13)~~	~~3~~
Calling party number	4.5	Both	O (Note 14)	2-21
Calling party subaddress	4.5	Both	O (Note 15)	2-23
Called party number	4.5	n → u	O (Note 16)	2-27
Called party subaddress	4.5	n → u	O (Note 17)	2-23
~~Redirecting number~~	~~4.7~~	~~n → u~~	~~O (Note 18)~~	~~2-4~~
User-user	4.5	n → u	O (Note 19)	2-131

TABLE 3-31/B *(cont.)*

NOTES

1 May be used to describe a CCITT telecommunication service involving packet-mode access connections, if appropriate.

2 Mandatory in the network-to-user direction. Included in the user-to-network direction when the user wants to indicate a channel. If not included, its absence is interpreted as “any channel acceptable”.

3 Included in the event of interworking within a private network.

4 Included if the network provides information that can be presented to the user.

5 Note not used.

6 Included in the network-to-user direction if the network implements X.25 [5]/Q.931 information element mapping and provides indication to the called user of the information rate for the call.

7 Included in the network-to-user direction if the network implements X.25/Q.931 information element mapping and provides indication to the called user of the maximum permissible transit delay for the call. Not currently used by Telecom.

8 Included in the network-to-user direction if the network implements X.25/Q.931 information element mapping and provides indication to the called user of the end-end transit delay for the call. Not currently used by Telecom.

9 Included in the network-to-user direction if the network implements X.25/Q.931 information element mapping and provides indication to the called user of the packet layer binary parameters for the call. Not currently used by Telecom.

10 Included in the network-to-user direction if the network implements X.25/Q.931 information element mapping and provides indication to the called user of the packet layer window size for the call. Not currently used by Telecom.

11 Included in the network-to-user direction if the network implements X.25/Q.931 information element mapping and provides indication to the called user of the packet size for the call. Not currently used by Telecom.

12 Included in the network-to-user direction if the network implements X.25/Q.931 information element mapping and provides indication to the called party of the closed user group that belongs for that call. Not currently used by Telecom. 13 Included in the network-to-user direction if the network implements X.25/Q.931 information element mapping and provides indication to the called party of the reverse charging request that applies for that call. Not currently used by Telecom.

14 Included in the user-to-network direction depending on the user/network identification requirements. Included in the network-to-user direction if the network implements X.25/Q.931 information element mapping and provides indication to the called user of the calling party number.

15 Included in the user-to-network direction depending on the user/network identification requirements. Included in the network-to-user direction if the network implements X.25/Q.931 information element mapping and provides indication to the called user of the calling party subaddress.

16 Included in the network-to-user direction if the network implements X.25/Q.931 information element mapping and provides indication to the called user of the called party number.

17 Included in the network-to-user direction if the network implements X.25/Q.931 information element mapping and provides indication to the called user of the called party subaddress.

18 Included in the network-to-user direction if the network implements X.25/Q.931 information element mapping and provides indication to the called user of the number from which a call diversion or transfer was invoked. Not currently used by Telecom.

19 Included in the network-to-user direction if the calling user included user information and the network implements X.25/Q.931 information element mapping.

3.2.10 STATUS

This message is sent by the user or the network in response to a STATUS ENQUIRY message or at any time to report certain error conditions listed in 5.8. See Table 3-32/B.

TABLE 3-32/B

STATUS message content

Message Type: STATUS
Significance: local
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Cause	4.5	Both	M	4-32
Call state	4.5	Both	M	3
Display	4.5	n → u	O (Note 1)	2-82

NOTES

1 Included if the network provides information that can be presented to the user.

3.2.11 STATUS ENQUIRY

The STATUS ENQUIRY message is sent by the user or the network at any time to solicit a STATUS message from the peer layer 3 entity. Sending a STATUS message in response to a STATUS ENQUIRY message is mandatory. See Table 3-33/B.

TABLE 3-33/B

STATUS ENQUIRY message content

Message type: STATUS ENQUIRY
Significance: local
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M	2-*
Message type	4.4	Both	M	1
Display	4.5	n → u	O (Note 1)	2-82

NOTES 1 Included if the network provides information that can be presented to the user.

3.3 Messages for user signalling bearer service control

User signalling bearer service is not currently implemented by Telecom. This section has not been reproduced.

3.4 Messages with the global call reference

Table 3-34/B summarizes the messages which may use the global call reference defined in 4.3.

TABLE 3-34/B

Messages used with the global call reference

Messages	Reference (subclause)
RESTART	3.4.1
RESTART ACKNOWLEDGE	3.4.2
STATUS	3.4.3

3.4.1 RESTART

This message is sent by the user or network to request the recipient to restart (i.e. return to an idle condition) the indicated channel(s) or interface. See Table 3-35/B.

TABLE 3-35/B

RESTART message content

Message type: RESTART
Significance: local
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M (Note 1)	2-*
Message type	4.4	Both	M	1
Channel identification	4.5	Both	O (Note 2)	2-*
Display	4.5	n → u	O (Note 3)	2-82
Restart indicator	4.5	Both	M	3

NOTES

1 This message is sent with the global call reference defined in 4.3.

2 Included when necessary to indicate the particular channel(s) to be restarted.

3 Included if the network provides information that can be presented to the user.

3.4.2 RESTART ACKNOWLEDGE

This message is sent to acknowledge the receipt of the RESTART message and to indicate that the requested restart is complete. See Table 3-36/B.

TABLE 3-36/B

RESTART ACKNOWLEDGE message content

Message type: RESTART ACKNOWLEDGE
Significance: local
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M (Note 1)	2-*
Message type	4.4	Both	M	1
Channel identification	4.5	Both	O (Note 2)	2-*
Display	4.5	n → u	O (Note 3)	2-82
Restart indicator	4.5	Both	M	3

NOTES

1 This message is sent with the global call reference defined in 4.3.

2 Included when necessary to indicate the particular channel(s) which have been restarted. May be repeated in the case ofnon-associated signalling that controls two or more interfaces.

3 Included if the network provides information that can be presented to the user.

3.4.3 STATUS

This message is sent by the user or the network at any time during a call to report certain error conditions listed in 5.8. See Table 3-37/B.

TABLE 3-37/B

STATUS message content

Message type: STATUS
Significance: local
Direction: both

Information element	Reference (subclause)	Direction	Type	Length
Protocol discriminator	4.2	Both	M	1
Call reference	4.3	Both	M (Note 1)	2-*
Message type	4.4	Both	M	1
Cause	4.5	Both	M	4-32

Call state	4.5	Both	M	3
Display	4.5	n → u	O (Note 2)	2-82

NOTES

1 This message may be sent with the global call reference defined in 4.3.

2 Included if the network provides information that can be presented to the user.