
ISDN MESSAGE SET (NT_S208-4)

Reference Manual

IDACOM

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**ISDN MESSAGE SET
(NT_S208-4)**

Reference Manual

November 1990
R01

SUPPORTED MESSAGE SETS

A number of ISDN D-Channel Layer 3 Message Sets are available to support all application monitor and simulation tests. CCITT is the international message set and is provided as the default to all ISDN users.

Contact your IDACOM/HP sales representative to either purchase additional sets and/or update existing message sets.

The following table contains a complete list of all currently available message sets and the corresponding release dates and numbers.

Message Set	Description	Release Date	Release #
International			
CCITT_1988	CCITT Q.931/I.451 Network Layer, Blue Book (1988)	November 1990	R01
North America			
ATT_5E6	AT&T 5D5-900-321, 5E6 Generic Program (03/89)	November 1990	R01
ATT_41449	AT&T Primary Rate Interface Spec, TR41449 (07/89)	November 1990	R01
NT_S208-4	Northern Telecom NIS S208-4 (1988), Functional	November 1990	R01
NT_S208-2	Northern Telecom NIS S208-2 (1986), Stimulus	November 1990	R01
NT_A211-1	Northern Telecom NIS A211-1, Issue AB01 (03/87)	November 1990	R01
Europe			
VN2_133e	CNET Tech Spec ST/LAA/RSM/ 133, Ed 3 (07/88) English	November 1990	R01
VN2_133f	CNET Tech Spec ST/LAA/RSM/ 133, Ed 3 (07/88) French	November 1990	R01
1TR6_MGK	FTZ 1TR6 ISDN-D-Kanal-Protokoll (Ausgabe 1.90) - MGK	November 1990	R01
1TR6_NSA	FTZ 1TR6 ISDN-D-Kanal-Protokoll (Ausgabe 1.90) - NStAnI	November 1990	R01
Asia			
NTT_INS-89	NTT INS Net 64/1500 Service Interface (1989)	November 1990	R01

PREFACE

This manual is intended to provide a list of message identifiers, information element identifiers, and information element structures for the NT_S208-4 Message Set. Refer to the ISDN Programmer's Manual for a list of identifiers and structures for the CCITT (default) message set.

This manual is not intended to provide basic user instruction, but rather provides examples which apply standard techniques for writing layer 3 test scripts using the Interactive Test Language (ITL). Refer to the Programmer's Reference Manual for general programming information, and the ISDN Programmer's Manual for more information and examples regarding ISDN test scripts. Refer to the machine specific User Manual for a quick reference to the basic operation of the protocol tester and for instructions to load and operate the software.

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INTRODUCTION

This message set is implemented in accordance with: Northern Telecom NIS S208-4, Issue 1, ISDN Basic Rate Access User-Network Interface Specification, October 1988.

The message set name (NT_S208-4) is used with the LOAD_MESSAGE_SET command or the *Load Message Set* function key under the **MessageSet** topic. This name is also displayed on various menus, and is used to identify the message set variation when layer 3 complete report format is selected. The corresponding entry on the Message Set Selection Menu identifies the message set name, description, and release number:

NT_S208-4 Northern Telecom NIS S208-4 (1988), Functional R01

This message set contains unique identifiers which can be used in ISDN test scripts to reference received and transmitted messages. These identifiers are listed in three sections:

- Message Type Identifiers
- Information Element Identifiers
- Information Element Structures (including parameter field selectors and associated field values constants)

The following subsections provide some examples illustrating the use of each of these types of identifiers. Refer to the ISDN Programmer's Manual for more information and detailed examples.

1.1 Using Message Identifiers

Message identifiers uniquely identify a message type in both received and transmitted messages, and are expressed in the following form:

M#xxxx (eg. M#SETUP)

In addition, the following default identifiers (specific received messages only) are also included with each message set:

- M#ANY (any valid message)
- M#INVALID (an invalid message)
- M#UNDEF (an unknown/undefined message type)

Example 1:

After receiving a Setup message, perform an action (eg. send a Setup Acknowledge response, increment a counter, etc.).

```
M#SETUP ?L3_MSG
ACTION{
    ( code specifying action taken if Setup message received )
}ACTION
```

Example 2:

Send an Alert message in an I frame complete with desired information elements.

```
M#ALERT MESSAGE>
    I#DISPLAY
    I#SIGNAL
<SEND
```

Message identifiers can also be used for filter/trigger management from within a script.

Example 3:

Set the display/report filter to only pass Setup and Connect messages.

```
R_FILTER          ( Select the display filter )
F3=NONE           ( Block all message types )
M#SETUP F+MSG     ( Pass Setup messages )
M#CONN F+MSG      ( Pass Connect messages )
```



1.2 Using IE Identifiers

IE identifiers uniquely identify an information element in both received and transmitted messages, and are expressed in the following form:

I#xxxx (eg. I#CAUSE)

Example 1:

Determine if the Cause IE appears in the last received message at least once.

```
I#CAUSE 1 ?L3_IE
IF
    ( code specifying action taken if the first Cause IE is found )
ELSE
    ( code specifying action taken if the first Cause IE is not found;
      ie: none present )
ENDIF
```

Example 2:

Prepare a Cause IE for later inclusion and transmission within a message.

```
I#CAUSE ELEMENT>
  ALL_EXCLUDED
  OCTET_3 INCLUDED
  OCTET_4 INCLUDED
  OCTET_5 INCLUDED
<ELEMENT
```

Also in this group are octet identifiers which uniquely identify an octet number that can be used for any IE that contains that octet number. Octet identifiers are used in both received and transmitted messages and are expressed in the following form:

OCTET_xx (eg. OCTET_3.1)

Example 1:

Determine if Octet 3A is present in the Cause IE of the latest message received.

```
I#CAUSE OCTET_3A ?L3_OCTET
IF
  ( code specifying action taken if the octet is present;
    ie: process the specified Recommendation )
ENDIF
```

1.3 Using IE Structures

Information element structures consist of the information element parameter field selectors and the associated field value identifiers.

The parameter field selectors are expressed in the following form:

->xxx_yyyy (eg. ->BC_CODING_STANDARD)

where: xxx = the information element associated with that parameter field
 (eg: Bearer Capability)
 yyy = the parameter field (either a string or a bit field)

The field value identifiers are expressed in the following form:

#xxxxx (eg. #INTERNATIONAL = 0b00000001)

All parameter field selectors are used with the *DEC and *COD structure indicators. *DEC provides the base address of the decoder parameter structure. When used with a field selector, decoded parameter values can be accessed. *COD complements *DEC and provides the base address of the coder parameter structure for the current connection. The contents of specific parameter fields can then be changed prior to transmission.

Example 1:

Depending on the contents of the received Bearer Capability Coding Standard parameter field (Octet 3, 2 bits), perform one of two different actions.

```
*DEC ->BC_CODING_STANDARD @      ( Obtain the received value )
#CCITT =                          ( Compare with identifier )
IF
    T." Coding Standard is CCITT" TCR
ELSE
    T." Coding Standard is not CCITT" TCR
ENDIF
```

 **NOTE**

The preceding example uses a bit field and @ (fetch); ! (store) and T. (print value) can also be used. If the parameter is a string (a sequence of one or more characters), !STRING or T.TYPE can be used.

Example 2:

Set the appropriate values of the two parameter fields of Octet 4 of the Bearer Capability IE prior to transmission.

```
#CIRCUIT_MODE *COD ->BC_TRANSFER_MODE !
#384KBIT/S    *COD ->BC_TRANSFER_RATE !
```

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MESSAGE IDENTIFIERS

2.1 Q.931 Protocol Discriminator

M#ALERT	Alerting
M#CALL_PROC	Call Proceeding
M#CONN	Connect
M#CONN_ACK	Connect Acknowledge
M#DISC	Disconnect
M#HOLD	Hold
M#HOLD_ACK	Hold Acknowledge
M#HOLD_REJ	Hold Reject
M#INFO	Information
M#KEY_HOLD	Key Hold
M#KEY_REL	Key Release
M#KEY_SETUP	Key Setup
M#KEY_S_ACK	Key Setup Acknowledge
M#NOTIFY	Notify
M#PROG	Progress
M#REL	Release
M#REL_COM	Release Complete
M#REST	Restart
M#REST_ACK	Restart Acknowledge
M#RETR	Retrieve
M#RETR_ACK	Retrieve Acknowledge
M#RETR_REJ	Retrieve Reject
M#SETUP	Setup
M#SETUP_ACK	Setup Acknowledge
M#STATUS	Status
M#STATUS_ENQ	Status Enquiry

3**IE IDENTIFIERS**

3.1 Codeset 0

I#BEARER_CAP	Bearer Capability
I#CALLED_NUM	Called Party Number
I#CALLING_NUM	Calling Party Number
I#CALL_STATE	Call State
I#CAUSE	Cause
I#CHANNEL_ID	Channel Identification
I#CONNECTED_NUM	Connected Number
I#DISPLAY	Display
I#ENDPOINT_ID	Endpoint Identifier
I#INFO_REQ	Information Request
I#KEYPAD	Keypad
I#NOTIFIC_IND	Notification Indicator
I#NTL_FEAT_ACT	Feature Activation
I#NTL_FEAT_IND	Feature Indicator
I#PROGRESS_IND	Progress Indicator
I#REDIRING_NUM	Redirecting Number
I#REDIRION_NUM	Redirection Number
I#RESTART_IND	Restart Indicator
I#SHIFT	Shift
I#SIGNAL	Signal
I#SPID	Service Profile Identification

3.2 Codeset 6

I#CALL_APPEAR	Call Appearance
I#SHIFT	Shift

4

IE STRUCTURES

4.1 Bearer Capability IE (I#BEARER_CAP)

Possible octet inclusions/exclusions:

OCTET_3, OCTET_4, OCTET_5, OCTET_5A

->BC_CODING_STANDARD	Coding standard, Octet 3
#CCITT	<i>CCITT</i>
#NETWORK_SPECIFIC	<i>network specific</i>
->BC_TRANSFER_CAP	Info. trans. cap., Octet 3
#SPEECH	<i>speech</i>
#UNRESTRICTED	<i>unrestricted digital information</i>
#RESTRICTED	<i>restricted digital information</i>
#3.1KHZ_AUDIO	<i>3.1 kHz audio</i>
->BC_TRANSFER_MODE	Transfer mode, Octet 4
#CIRCUIT_MODE	<i>circuit mode</i>
->BC_TRANSFER_RATE	Info. transfer rate, Octet 4
#64KBIT/S	<i>64 kbit/s circuit-mode</i>
->BC_LAYER1_ID	Layer identifier, Octet 5
(numeric value)	<i>valid value: 1</i>
->BC_L1_PROTOCOL	Layer 1 protocol, Octet 5
#RATE_ADAPTION	<i>CCITT rate adaption V.110/X.30</i>
#G.711_ULAW	<i>Rec. G.711 u-law</i>
->BC_USER_RATE	User rate, Octet 5a
#56KBIT/S	<i>56 kbit/s</i>

4.2 Call Appearance IE (I#CALL_APPEAR)

Possible octet inclusions/exclusions:

OCTET_3, OCTET_3A

->CA_CALL_APPEAR	Call Appearance, Octet 3 & 3a
(numeric value)	<i>range 0 through 16383</i>

4.3 Call State IE (I#CALL_STATE)

Possible octet inclusions/exclusions:

OCTET_3

->CS_CALL_STATE	Call state, Octet 3
#NULL	<i>Null</i>
#CALL_INIT	<i>Call Initiated</i>
#OUTGOING_CALL_PROC	<i>Outgoing Call Proceeding</i>
#CALL_DELIVERED	<i>Call Delivered</i>
#CALL_PRESENT	<i>Call Present</i>
#CALL_RECEIVED	<i>Call Received</i>
#CONNECT_REQUEST	<i>Connect Request</i>
#INCOMING_CALL_PROC	<i>Incoming Call Proceeding</i>
#ACTIVE	<i>Active</i>
#DISC_REQUEST	<i>Disconnect Request</i>
#DISC_INDICATION	<i>Disconnect Indication</i>
#RELEASE_REQUEST	<i>Release Request</i>

4.4 Called Party Number IE (I#CALLED_NUM)

Possible octet inclusions/exclusions:

OCTET_3, OCTET_4

->CLDN_NUMBER_TYPE	Type of number, Octet 3
#UNKNOWN	<i>unknown</i>
#INTERNATIONAL	<i>international number</i>
#NATIONAL	<i>national number</i>
#NETWORK_SPECIFIC	<i>network specific</i>
#LOCAL_DIRECTORY	<i>subscriber number</i>
#ABBREVIATED	<i>abbreviated number</i>
->CLDN_NUMBERING_PLAN	Numbering plan, Octet 3
#UNKNOWN_PLAN	<i>unknown</i>
#ISDN_PLAN	<i>ISDN numbering plan Rec. E.164</i>
#DATA_PLAN	<i>data numbering plan Rec.X.121</i>
#PRIVATE_PLAN	<i>private numbering plan</i>
->CLDN_NUMBER (IA5 characters)	Number, Octet 4 * <i>max. length 24 octets</i>

4.5 Calling Party Number IE (I#CALLING_NUM)

Possible octet inclusions/exclusions:

OCTET_3, OCTET_3A, OCTET_4

->CLGN_NUMBER_TYPE	Type of number, Octet 3
#UNKNOWN	<i>unknown</i>
#INTERNATIONAL	<i>international number</i>
#NATIONAL	<i>national number</i>
#NETWORK_SPECIFIC	<i>network specific</i>
#LOCAL_DIRECTORY	<i>subscriber number</i>
#ABBREVIATED	<i>abbreviated number</i>
->CLGN_NUMBERING_PLAN	Numbering plan, Octet 3
#UNKNOWN_PLAN	<i>unknown</i>
#ISDN_PLAN	<i>ISDN numbering plan Rec. E.164</i>
#DATA_PLAN	<i>data numbering plan Rec.X.121</i>
#PRIVATE_PLAN	<i>private numbering plan</i>
->CLGN_PRESENTATION	Presentation ind., Octet 3a
#PRESENT_ALLOWED	<i>presentation allowed</i>
#PRESENT_RESTRICTED	<i>presentation restricted</i>
#NUMBER_UNAVAIL	<i>not available due to interworking</i>
->CLGN_SCREENING	Screening indicator, Octet 3a
#UNSCREENED	<i>user-provided, not screened</i>
#VERIFY_PASSED	<i>user-provided, verified and passed</i>
#VERIFY_FAILED	<i>user-provided, verified and failed</i>
#NETWORK_PROVIDED	<i>network provided</i>
->CLGN_NUMBER	Number, Octet 4 *
(IA5 characters)	<i>max. length 12 octets</i>

4.6 Cause IE (I#CAUSE)

Possible octet inclusions/exclusions:

OCTET_3, OCTET_4, OCTET_5

->C_CODING_STANDARD	Coding standard, Octet 3
#CCITT	<i>CCITT</i>
#NETWORK_SPECIFIC	<i>network specific</i>
->C_LOCATION	Location, Octet 3
#USER	<i>user</i>
#LOCAL_PRIVATE	<i>private network serving local user</i>
#LOCAL_PUBLIC	<i>public network serving local user</i>

->C_CAUSE_VALUE	Cause value, Octet 4
#UNASSIGNED_NUMBER	<i>Unassigned number</i>
#NO_ROUTE_TO_TRANSIT	<i>No route to transit network</i>
#CALL_PROCEEDING	<i>Call is proceeding</i>
#NORMAL_CLEARING	<i>Normal call clearing</i>
#USER_BUSY	<i>User busy</i>
#NO_USER_RESPOND	<i>No user responding</i>
#CALL_REJECTED	<i>Call rejected</i>
#NUMBER_CHANGED	<i>Number changed</i>
#DEST_DOWN	<i>Destination out of order</i>
#INVALID_NUMBER_FORMAT	<i>Invalid number format</i>
#FACILITY_REJECTED	<i>Facility rejected</i>
#STATUS_ENQ_RESPONSE	<i>Response to STATUS ENQUIRY</i>
#NORMAL_UNSPECIFIED	<i>Normal, unspecified</i>
#NO_CHANNEL_AVAIL	<i>No circuit/channel available</i>
#TEMPORARY_FAILURE	<i>Temporary failure</i>
#SWITCH_CONGESTION	<i>Switching equipment congestion</i>
#ACCESS_INFO_DISCARD	<i>Access information discarded</i>
#CIRCUIT_UNAVAIL	<i>Requested circuit not available</i>
#RESOURCE_UNAVAIL_UNSPEC	<i>Resources unavailable, unspecified</i>
#NOT_SUBSCRIBED	<i>Requested facility not subscribed</i>
#BEARER_INCOMPAT	<i>Bearer cap. incompat with service</i>
#OPERATION_VIOLATED	<i>Service operation violated</i>
#INCOMING_BARRED	<i>Incoming calls barred</i>
#BEARER_UNAUTHORIZED	<i>Bearer capability not authorized</i>
#BEARER_UNAVAIL	<i>Bearer capability not available</i>
#SERVICE_UNAVAIL_UNSPEC	<i>Service not available</i>
#BEARER_SERVICE_UNIMPL	<i>Bearer capability not implemented</i>
#CHANNEL_TYPE_UNIMPL	<i>Channel type not implemented</i>
#REQ_FACILITY_UNIMPL	<i>Requested facility not implemented</i>
#DIGITAL_INFO	<i>Restricted Digital info.</i>
#SERV/OPTION_UNSPEC	<i>Services/Options not unspecified</i>
#INVALID_CALL_REF	<i>Invalid call reference value</i>
#CHANNEL_NONEXISTENT	<i>Identified channel does not exist</i>
#INCOMPATIBLE_DEST	<i>Incompatible destination</i>
#INVALID_MESSAGE_UNSPEC	<i>Invalid message, unspecified</i>
#MAND_IE_MISSING	<i>Mandatory IE is missing</i>
#MESSAGE_TYPE_UNIMPL	<i>Message type non-existent</i>
#MESSAGE_INCOMPAT	<i>Message not compatible</i>
#ELEM_UNIMPLEMENTED	<i>Information element not implemented</i>
#INVALID_IE_CONTENTS	<i>Invalid IE contents</i>
#PROTOCOL_ERROR_UNSPEC	<i>Protocol error, unspecified</i>
#INVALID_CALL_NUM	<i>Invalid calling party number</i>
#INTERWORK_UNSPEC	<i>Interworking, unspecified</i>
->C_DIAGNOSTIC (hex characters)	Diagnostic(s), Octet 5 * <i>max. length 18 octets</i>

4.7 Channel Identification IE (I#CHANNEL_ID)

Possible octet inclusions/exclusions:

OCTET_3

->CID_INT_PRESENT	Interface ident., Octet 3
#IMPLICIT	<i>implicitly identified</i>
#EXPLICIT	<i>explicitly identified</i>
->CID_INT_TYPE	Interface type, Octet 3
#BASIC_INTERFACE	<i>basic interface</i>
#OTHER_INTERFACE	<i>other interface</i>
->CID_PREF/EXCL	Preferred/Exclusive, Octet 3
#PREFERRED	<i>indicated channel preferred</i>
#EXCLUSIVE	<i>only indicated channel acceptable</i>
->CID_DCHANNEL	D-channel indicator, Octet 3
#NOT_D_CHANNEL	<i>not D-channel</i>
#D_CHANNEL	<i>D-channel identified</i>
->CID_INFO_CHAN_SEL	Info. chan. sel., Octet 3
#NO_CHANNEL	<i>no channel</i>
#B1_CHANNEL	<i>B1 channel</i>
#B2_CHANNEL	<i>B2 channel</i>
#ANY_CHANNEL	<i>any channel</i>

4.8 Connected Number IE (I#CONNECTED_NUM)

Possible octet inclusions/exclusions:

OCTET_3, OCTET_3A, OCTET_4

->CNDN_NUMBER_TYPE	Type of number, Octet 3
#UNKNOWN	<i>unknown</i>
#INTERNATIONAL	<i>international number</i>
#NATIONAL	<i>national number</i>
#NETWORK_SPECIFIC	<i>network specific</i>
#LOCAL_DIRECTORY	<i>subscriber number</i>
#ABBREVIATED	<i>abbreviated number</i>
->CNDN_NUMBERING_PLAN	Numbering plan, Octet 3
#UNKNOWN_PLAN	<i>unknown</i>
#ISDN_PLAN	<i>ISDN numbering plan Rec. E.164</i>
#DATA_PLAN	<i>data numbering plan Rec.X.121</i>
#PRIVATE_PLAN	<i>private numbering plan</i>
->CNDN_PRESENTATION	Presentation ind., Octet 3a
#PRESENT_ALLOWED	<i>presentation allowed</i>
#PRESENT_RESTRICTED	<i>presentation restricted</i>
#NUMBER_UNAVAIL	<i>not available due to interworking</i>

->CNDN_SCREENING	Screening indicator, Octet 3a
#UNSCREENED	<i>user-provided, not screened</i>
#VERIFY_PASSED	<i>user-provided, verified and passed</i>
#VERIFY_FAILED	<i>user-provided, verified and failed</i>
#NETWORK_PROVIDED	<i>network provided</i>
->CNDN_NUMBER	Number, Octet 4 *
(IA5 characters)	<i>max. length 12 octets</i>

4.9 Display IE (I#DISPLAY)

Possible octet inclusions/exclusions:

OCTET_3

->D_DISPLAY	Display information, Octet 3 *
(IA5 characters)	<i>max. length 32 octets</i>

4.10 Endpoint Identifier IE (I#ENDPOINT_ID)

Possible octet inclusions/exclusions:

OCTET_3, OCTET_4

->EP_USID	User Srv Id(USID), Octet 3
(numeric value)	<i>range 0 through 127</i>
->EP_INTERPRETER	Interpreter, Octet 4
#MATCHES_USID+TID	<i>Addressed if USID and TID matches</i>
#MATCHES_USID	<i>Addressed if USID and not TID match</i>
->EP_TID	Terminal Id (TID), Octet 4
(numeric value)	<i>range 0 through 63</i>

4.11 Feature Activation IE (I#NTL_FEAT_ACT)

Possible octet inclusions/exclusions:

OCTET_3, OCTET_3A

->FA_FEAT_NUM	Feature_Id_Number, Octet 3 & 3a
(numeric value)	<i>range 0 through 16383</i>

4.12 Feature Indicator IE (I#NTL_FEAT_IND)

Possible octet inclusions/exclusions:

OCTET_3, OCTET_3A, OCTET_4

->FL_FEAT_NUM (numeric value)	Feature_Id_Number, Octet 3 & 3a <i>range 0 through 16383</i>
->FL_STATUS #IDLE #ACTIVE_STATE #PROMPT #PENDING	Feature Indicator, Octet 4 <i>feature in idle state</i> <i>feature in active state</i> <i>prompt for user input</i> <i>feature is pending</i>

4.13 Information Request IE (I#INFO_REQ)

Possible octet inclusions/exclusions:

OCTET_3

->IRQ_INDICATOR #INFO_REQ_COMPL #PROMPT_INFO	Info Request ind, Octet 3 <i>information request complete</i> <i>prompt for additonal info</i>
->IRQ_INFO_TYPE #UNDEFINED #AUTH_CODE #ADDRESS_DIGITS #TERMINAL_ID	Information Type, Octet 3 <i>undefined</i> <i>authorization code</i> <i>address digits</i> <i>terminal identification</i>

4.14 Keypad IE (I#KEYPAD)

Possible octet inclusions/exclusions:

OCTET_3

->K_KEYPAD (IA5 characters)	Keypad information, Octet 3 * <i>max. length 30 octets</i>
----------------------------------	---

4.15 Notification Indicator IE (I#NOTIFIC_IND)

Possible octet inclusions/exclusions:

OCTET_3

->NI_DESCRIPTION	Notific descrip, Octet 3
#CONF_FACIL_CONT	<i>via conference facility controller</i>
#CONF_FACIL	<i>via conference facility conferee</i>
#TWO_PARTY_CALL	<i>two party call</i>
#CONF_FACIL_REL	<i>conference facility released</i>
#EMERGENCY_SERV	<i>connected to emergency service</i>
#ATTENDANT_CONSOLE	<i>connected to attendant console</i>
#REM_PARTY_DISCON	<i>remote party disconnected</i>
#BRIDGED_CALL	<i>bridged call</i>
#UNBRIDGED_CALL	<i>call no longer bridged</i>
#RETRIEVE_CALL	<i>retrieve held call</i>
#ATTEND_CONSOLE_DISC	<i>attendant console disconnected</i>
#CALL_TRANSFER	<i>call transferred</i>
#HOLD_CALL	<i>call on hold</i>
#PRIVACY_ENABLE	<i>privacy enabled</i>
#PRIVACY_DISABLE	<i>privacy disabled</i>
#CALL_RETRIEVED	<i>call retrieved from hold</i>

4.16 Progress Indicator IE (I#PROGRESS_IND)

Possible octet inclusions/exclusions:

OCTET_3, OCTET_4

->PI_CODING_STANDARD	Coding standard, Octet 3
#CCITT	<i>CCITT</i>
#NETWORK_SPECIFIC	<i>network specific</i>
->PI_LOCATION	Location, Octet 3
#USER	<i>user</i>
#LOCAL_PRIVATE	<i>private network serving local user</i>
#LOCAL_PUBLIC	<i>public network serving local user</i>
->PI_DESCRIPTION	Progress descrip., Octet 4]
#NOT_END_TO_END	<i>call is not end-to-end ISDN</i>
#DEST_NON_ISDN	<i>destination address is non-ISDN</i>
#ORIG_NON_ISDN	<i>origination address is non-ISDN</i>
#INBAND_INFO_AVAIL	<i>in-band info. now available</i>
#DEST_NOT_RESP	<i>destination not responding</i>

4.17 Redirecting Number IE (I#REDIRING_NUM)

Possible octet inclusions/exclusions:

OCTET_3, OCTET_3A, OCTET_4

->RDGN_NUMBER_TYPE	Type of number, Octet 3
#UNKNOWN	<i>unknown</i>
#INTERNATIONAL	<i>international number</i>
#NATIONAL	<i>national number</i>
#NETWORK_SPECIFIC	<i>network specific</i>
#LOCAL_DIRECTORY	<i>subscriber number</i>
#ABBREVIATED	<i>abbreviated number</i>
->RDGN_NUMBERING_PLAN	Numbering plan, Octet 3
#UNKNOWN_PLAN	<i>unknown</i>
#ISDN_PLAN	<i>ISDN numbering plan Rec. E.164</i>
#DATA_PLAN	<i>data numbering plan Rec.X.121</i>
#PRIVATE_PLAN	<i>private numbering plan</i>
->RDGN_PRESENTATION	Presentation ind., Octet 3a
#PRESENT_ALLOWED	<i>presentation allowed</i>
#PRESENT_RESTRICTED	<i>presentation restricted</i>
#NUMBER_UNAVAIL	<i>not available due to interworking</i>
->RDGN_SCREENING	Screening indicator, Octet 3a
#UNSCREENED	<i>user-provided, not screened</i>
#VERIFY_PASSED	<i>user-provided, verified and passed</i>
#VERIFY_FAILED	<i>user-provided, verified and failed</i>
#NETWORK_PROVIDED	<i>network provided</i>
->RDGN_NUMBER (IA5 characters)	Number, Octet 4 * <i>max. length 12 octets</i>

4.18 Redirection Number IE (I#REDIRION_NUM)

Possible octet inclusions/exclusions:

OCTET_3, OCTET_3A, OCTET_4

->RDNN_NUMBER_TYPE	Type of number, Octet 3
#UNKNOWN	<i>unknown</i>
#INTERNATIONAL	<i>international number</i>
#NATIONAL	<i>national number</i>
#NETWORK_SPECIFIC	<i>network specific</i>
#LOCAL_DIRECTORY	<i>subscriber number</i>
#ABBREVIATED	<i>abbreviated number</i>
->RDNN_NUMBERING_PLAN	Numbering plan, Octet 3
#UNKNOWN_PLAN	<i>unknown</i>
#ISDN_PLAN	<i>ISDN numbering plan Rec. E.164</i>
#DATA_PLAN	<i>data numbering plan Rec.X.121</i>
#PRIVATE_PLAN	<i>private numbering plan</i>

->RDNN_PRESENTATION	Presentation ind., Octet 3a
#PRESENT_ALLOWED	<i>presentation allowed</i>
#PRESENT_RESTRICTED	<i>presentation restricted</i>
#NUMBER_UNAVAIL	<i>not available due to interworking</i>
->RDNN_SCREENING	Screening indicator, Octet 3a
#UNSCREENED	<i>user-provided, not screened</i>
#VERIFY_PASSED	<i>user-provided, verified and passed</i>
#VERIFY_FAILED	<i>user-provided, verified and failed</i>
#NETWORK_PROVIDED	<i>network provided</i>
->RDNN_NUMBER	Number, Octet 4 *
(IA5 characters)	<i>max. length 12 octets</i>

4.19 Restart Indicator IE (I#RESTART_IND)

Possible octet inclusions/exclusions:

OCTET_3

->RI_CLASS	Class, Octet 3
#INDICATED_CHANNEL	<i>indicated channels</i>
#ALL_INTERFACES	<i>all D-chan. calls and chans.</i>

4.20 Service Profile Identification IE (I#SPID)

Possible octet inclusions/exclusions:

OCTET_3

->SPID	Service Profile ID, Octet 3 *
(IA5 characters)	<i>max. length 20 octets</i>

4.21 Shift IE (I#SHIFT)

->SH_TYPE	Shift type
#LOCKING	<i>locking</i>
#NON_LOCKING	<i>non-locking</i>
->SH_CODESET	Codeset ident.
#CODESET0	<i>Q.931 IE</i>
#CODESET6	<i>local network specific IE</i>

4.22 Signal IE (I#SIGNAL)

Possible octet inclusions/exclusions:

OCTET_3

->SI_VALUE	Signal value, Octet 3
#DIAL_ON	<i>dial tone on</i>
#RING_BACK_ON	<i>ring back tone on</i>
#CONGESTION_ON	<i>network congestion tone on</i>
#BUSY_ON	<i>busy tone on</i>
#CONFIRM_ON	<i>confirm tone on</i>
#RECALL_TONE_ON	<i>recall dial tone on</i>
#TONES_OFF	<i>tones off</i>
#ALERTING_ON_0	<i>alerting on - pattern 0</i>
#ALERTING_ON_1	<i>alerting on - pattern 1</i>
#ALERTING_ON_2	<i>alerting on - pattern 2</i>
#ALERTING_ON_3	<i>alerting on - pattern 3</i>
#ALERTING_ON_6	<i>alerting on - pattern 6</i>
#ALERTING_OFF	<i>alerting off</i>

