



INTERNATIONAL TELECOMMUNICATION UNION

CCITT

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

Q.763

(11/1988)

SERIES Q: SWITCHING AND SIGNALLING

Interworking of Signalling Systems – Specifications of
Signalling System No. 7

**INTEGRATED SERVICES DIGITAL NETWORK
USER PART (ISUP) – FORMATS AND CODES**

Reedition of CCITT Recommendation Q.763 published in
the Blue Book, Fascicle VI.8 (1988)

NOTES

1 CCITT Recommendation Q.763 was published in Fascicle VI.8 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

2 In this Recommendation, the expression “Administration” is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Recommendation Q.763

FORMATS AND CODES

1 General

ISDN user part messages are carried on the signalling link by means of signal units the format of which is described in Recommendation Q.703, § 2.2.

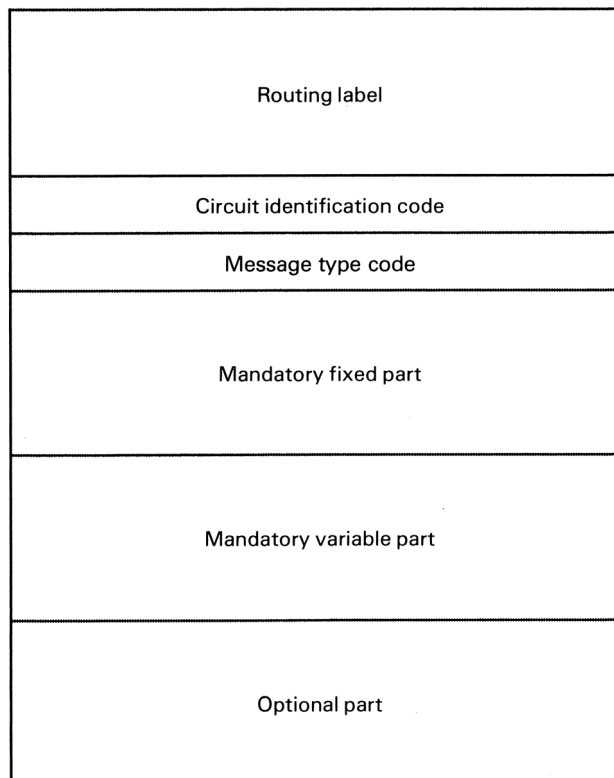
The format of and the codes used in the service information octet are described in Recommendation Q.704, § 14.2. The service indicator for the ISDN user part is coded 0101.

The signalling information field of each message signal unit containing an ISDN user part message consists of an integral number of octets and encompasses the following parts (see Figure 1/Q.763):

- a) routing label;
- b) circuit identification code;
- c) message type code;
- d) the mandatory fixed part;
- e) the mandatory variable part;
- f) the optional part, which may contain fixed length and variable length parameter fields.

Note – The service information octet, the routing label and circuit identification code are not included in the SCCP user data parameter transferred between the ISDN user part and signalling connection control part.

A description of the various message parts is given in the following sections.



CCITT-73280

FIGURE 1/Q.763
ISDN user part message parts

1.1 *Routing label*

The format and codes used for the routing label are described in Recommendation Q.704, § 2.2. For each individual circuit connection, the same routing label must be used for each message that is transmitted for that connection.

1.2 *Circuit identification code*

The format of the circuit identification code (CIC) is shown in Figure 2/Q.763.

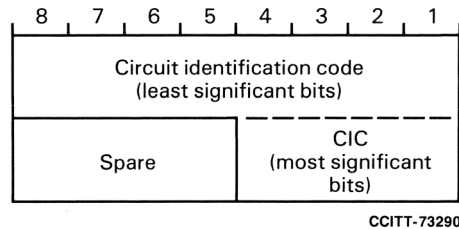


FIGURE 2/Q.763

Circuit identification field

The allocation of circuit identification codes to individual circuits is determined by bilateral agreement and/or in accordance with applicable predetermined rules.

For international applications, the four spare bits of the circuit identification field are reserved for CIC extension, provided that bilateral agreement is obtained before any increase in size is performed. For national applications, the four spare bits can be used as required.

Allocations for certain applications are defined below:

a) *2048 kbit/s digital path*

For circuits which are derived from a 2048 kbit/s digital path (Recommendations G.732 and G.734) the circuit identification code contains in the 5 least significant bits a binary representation of the actual number of the time slot which is assigned to the communication path.

The remaining bits in the circuit identification code are used, where necessary, to identify these circuits uniquely among all other circuits of other systems interconnecting an originating and destination point.

b) *8448 kbit/s digital path*

For circuits which are derived from a 8448 kbit/s digital path (Recommendations G.744 and G.747) the circuit identification code contains in the 7 least significant bits an identification of the circuit which is assigned to the communication path. The codes in Table 1/Q.763 are used.

The remaining bits in the circuit identification code are used, where necessary, to identify these circuits uniquely among all other circuits of other systems interconnecting an originating and destination point.

c) *Frequency division multiplex (FDM) systems in networks using the 2048 kbit/s pulse code modulation standard*

For frequency division multiplex systems existing in networks that also use the 2048 kbit/s pulse code modulation standard, the circuit identification code contains in the 6 least significant bits the identification of a circuit within a group of 60 circuits carried by 5 basic frequency division multiplex groups which may or may not be part of the same supergroup. The codes in Table 2/Q.763 are used.

The remaining bits in the circuit identification code are used, where necessary, to identify these circuits uniquely among all other circuits of other systems interconnecting an originating and destination point.

TABLE 1/Q.763

0 0 0 0 0 0	Circuit 1
0 0 0 0 0 1	Circuit 2
0 0 1 1 1 1	Circuit 32
0 1 0 0 0 0	Circuit 33
1 1 1 1 1 0	Circuit 127
1 1 1 1 1 1	Circuit 128

TABLE 2/Q.763

0 0 0 0 0	Unallocated	
0 0 0 0 1	Circuit 1	1st basic (FDM) group
0 0 1 1 0 0	Circuit 12	
0 0 1 1 0 1	Circuit 1	2nd basic (FDM) group
0 0 1 1 1 0	Circuit 2	
0 0 1 1 1 1	Circuit 3	
0 1 0 0 0 0	Unallocated	
0 1 0 0 0 1	Circuit 4	
0 1 1 0 0 1	Circuit 12	
0 1 1 0 1 0	Circuit 1	3rd basic (FDM) group
0 1 1 1 1 1	Circuit 6	
1 0 0 0 0 0	Unallocated	
1 0 0 0 0 1	Circuit 7	
1 0 0 1 1 0	Circuit 12	
1 0 0 1 1 1	Circuit 1	4th basic (FDM) group
1 0 1 1 1 1	Circuit 9	
1 1 0 0 0 0	Unallocated	
1 1 0 0 0 1	Circuit 10	
1 1 0 0 1 0	Circuit 11	
1 1 0 0 1 1	Circuit 12	
1 1 0 1 0 0	Circuit 1	5th basic (FDM) group
1 1 1 1 1 1	Circuit 12	

1.3 Message type code

The message type code consists of a one octet field and is mandatory for all messages. The message type code uniquely defines the function and format of each ISDN user part message.

The allocation with reference to the appropriate descriptive section of this Recommendation is summarized in Table 3/Q.763.

1.4 *Formatting principles*

Each message consists of a number of PARAMETERS listed and described in § 2. Each parameter has a NAME which is coded as a single octet (see Table 4/Q.763). The length of a parameter may be fixed or variable, and a LENGTH INDICATOR of one octet for each parameter may be included as described below.

The detailed format is uniquely defined for each message type as described in § 3.

A general format diagram is shown in Figure 3/Q.763.

1.5 *Mandatory fixed part*

Those parameters that are mandatory and of fixed length for a particular message type will be contained in the *mandatory fixed part*. The position, length and order of the parameters is uniquely defined by the message type, thus the names of the parameters and the length indicators are not included in the message.

1.6 *Mandatory variable part*

Mandatory parameters of variable length will be included in the *mandatory variable part*. Pointers are used to indicate the beginning of each parameter. Each pointer is encoded as a single octet. The name of each parameter and the order in which the pointers are sent is implicit in the message type. Parameter names are, therefore, not included in the message. The details of how pointers are encoded is found in § 2.3. The number of parameters, and thus the number of pointers is uniquely defined by the message type.

A pointer is also included to indicate the beginning of the optional part. If the message type indicates that no optional part is allowed, then this pointer will not be present. If the message type indicates that an optional part is possible, but there is no optional part included in this particular message than a pointer field containing all zeros will be used. It is recommended that all future message types with a mandatory variable part indicate that an optional part is allowed.

All the pointers are sent consecutively at the beginning of the mandatory variable part. Each parameter contains the parameter length indicator followed by the contents of the parameters.

1.7 *Optional part*

The optional part consists of parameters that may or may not occur in any particular message type. Both fixed length and variable length parameters may be included. Optional parameters may be transmitted in any order. Each optional parameter will include the parameter name (one octet) and the length indicator (one octet) followed by the parameter contents.

1.8 *End of optional parameters octet*

If optional parameters are present and after all optional parameters have been sent, an “end of optional parameters” octet containing all zeros will be transmitted.

1.9 *Order of transmission*

Since all the fields consist of an integral number of octets, the formats are presented as a stack of octets. The first octet transmitted is the one shown at the top of the stack and the last is the one at the bottom (see Figure 3/Q.763).

Unless otherwise indicated, within each octet and subfield the bits are transmitted with the least significant bit first.

1.10 *Coding of spare bits*

Spare bits are coded 0 unless indicated otherwise.

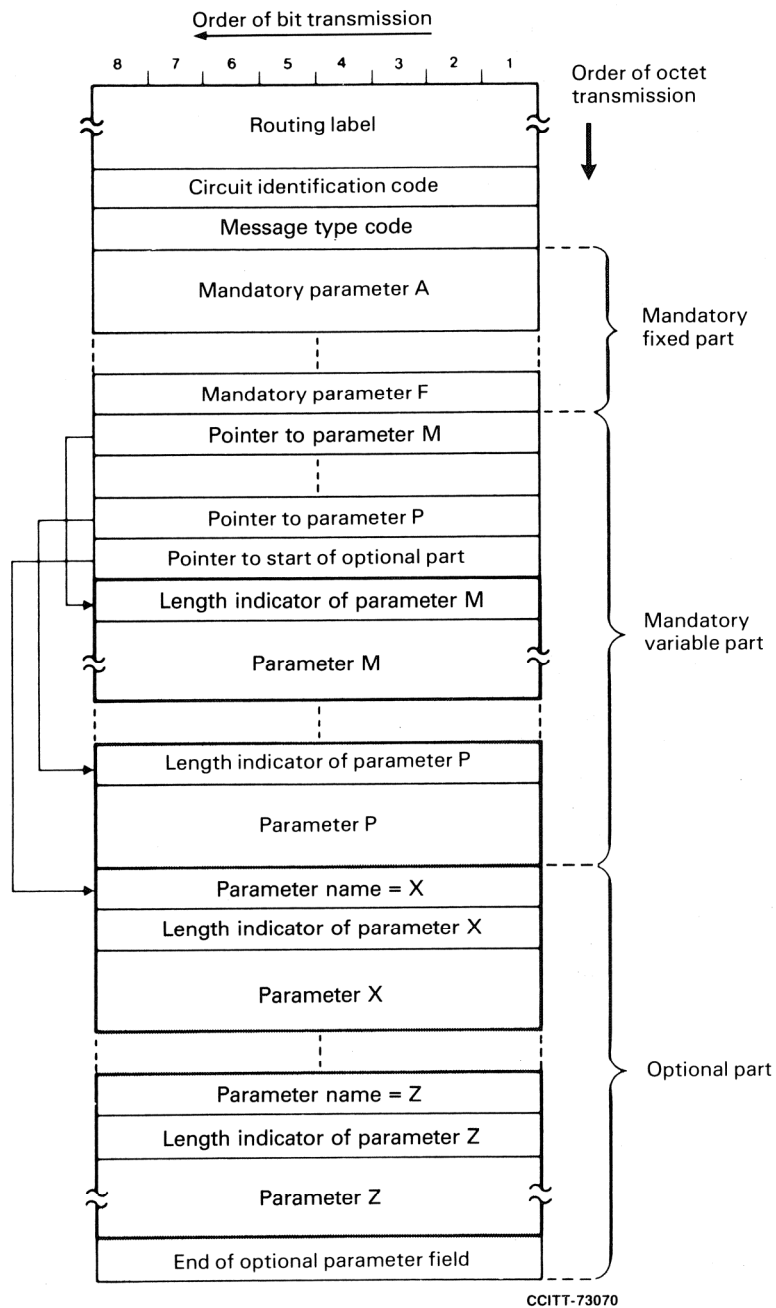


FIGURE 3/Q.763

1.11 *National message types and parameters*

If message type codes and parameter name codes are required for national uses not included in this Recommendation, the codes chosen should be from the highest code downwards, that is, starting at code 11111111. Codes in the range 11111111 to 11100000 are reserved exclusively for this purpose.

2 Parameter formats and codes

2.1 *Message type codes*

The encoding of the message type is shown in Table 3/Q.763.

TABLE 3/Q.763

Message type	Reference (Table)	Code
Address complete	5/Q.763	00001110
Answer	6/Q.763	00001001
Blocking	23/Q.763	00010011
Blocking acknowledgement	23/Q.763	00010101
Call modification completed	24/Q.763	00011101
Call modification request	24/Q.763	00011100
Call modification reject	24/Q.763	00011110
Call progress	7/Q.763	00101100
Circuit group blocking	25/Q.763	00011000
Circuit group blocking acknowledgement	25/Q.763	00011010
Circuit group query	26/Q.763	00101010
Circuit group query response	8/Q.763	00101011
Circuit group reset	26/Q.763	00010111
Circuit group reset acknowledgement	9/Q.763	00101001
Circuit group unblocking	25/Q.763	00011001
Circuit group unblocking acknowledgement	25/Q.763	00011011
Charge information ^{a)}	(see Note)	00110001
Confusion	10/Q.763	00101111
Connect	11/Q.763	00000111
Continuity	12/Q.763	00000101
Continuity check request	23/Q.763	00010001
Delayed release ^{a)}	21/Q.763	00100111
Facility accepted	27/Q.763	00100000
Facility reject	13/Q.763	00100001
Facility request	27/Q.763	00011111
Forward transfer	21/Q.763	00001000
Information	14/Q.763	00000100
Information request	15/Q.763	00000011
Initial address	16/Q.763	00000001
Loop back acknowledgement ^{a)}	23/Q.763	00100100
Overload ^{a)}	23/Q.763	00110000
Pass-along	28/Q.763	00101000
Release	17/Q.763	00001100
Release complete	18/Q.763	00010000
Reset circuit	23/Q.763	00010010
Resume	22/Q.763	00001110
Subsequent address	19/Q.763	00000010
Suspend	22/Q.763	00001101
Unblocking	23/Q.763	00010100
Unblocking acknowledgement	23/Q.763	00010110
Unequipped CIC ^{a)}	23/Q.763	00101110
User-to-user information	20/Q.763	00101101
Reserved (used in 1984 version)		00001010 00001011 00001111 00100010 00100011 00100101 00100110

^{a)} For national use only

Note – The format of this message is a national matter.

2.2 Coding of the length indicator

The length indicator field is binary coded to indicate the number of octets in the parameter content field. The length indicated does not include the parameter name octet or the length indicator octet.

2.3 Coding of the pointers

The pointer value (in binary) gives the number of octets between the pointer itself (included) and the first octet (not included) of the parameter associated with that pointer.

The pointer value all zeros is used to indicate that, in the case of optional parameters, no optional parameter is present.

3 ISDN user part parameters

3.1 Parameter names

The parameter name codes are given in Table 4/Q.763 together with references to the subsections in which they are described.

3.2 Access transport

The format of the access transport parameter field is shown in Figure 4/Q.763.

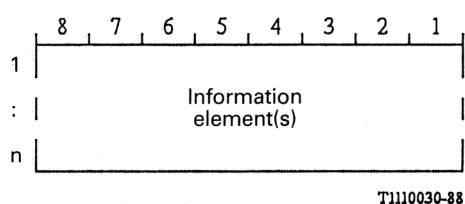


FIGURE 4/Q.763

Access transport parameter field

The information element is coded as described in Recommendation Q.931, § 4.5. Multiple Q.931 information elements can be included within the access transport parameter. The information elements applicable to a particular usage of the access transport parameter are dependent on, and will be determined by, the relevant procedures.

3.3 Automatic congestion level

The format of the automatic congestion level parameter field is shown in Figure 5/Q.763.

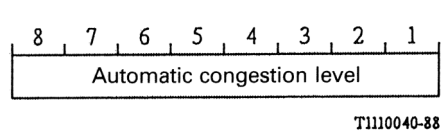


FIGURE 5/Q.763

Automatic congestion level parameter field

TABLE 4/Q.763

Parameter name	Reference (§)	Code
Access transport	3.2	00000011
Automatic congestion level	3.3	00100111
Backward call indicators	3.4	00010001
Call modification indicators	3.5	00010111
Call reference	3.6	00000001
Called party number	3.7	00000100
Calling party number	3.8	00001010
Calling party's category	3.9	00001001
Cause indicators	3.10	00010010
Circuit group supervision message type indicator	3.11	00010101
Circuit state indicator	3.12	00100110
Closed user group interlock code	3.13	00011010
Connected number	3.14	00100001
Connection request	3.15	00001101
Continuity indicators	3.16	00010000
End of optional parameters	3.17	00000000
Event information	3.18	00100100
Facility indicator	3.19	00011000
Forward call indicators	3.20	00000111
Information indicators	3.21	00001111
Information request indicators	3.22	00001110
Nature of connection indicators	3.23	00000110
Optional backward call indicators	3.24	00101001
Optional forward call indicators	3.25	00001000
Original called number	3.26	00101000
Range and status	3.27	00010110
Redirecting number	3.28	00001011
Redirection information	3.29	00010011
Redirection number	3.30	00001100
Signalling point code ^{a)}	3.31	00011110
Subsequent number	3.32	00000101
Suspend/Resume indicators	3.33	00100010
Transit network selection ^{a)}	3.34	00100011
Transmission medium requirement	3.35	00000010
User service information	3.36	00011101
User-to-user indicators	3.37	00101010
User-to-user information	3.38	00100000
Reserved (used in 1984 version, Red Book)		00010100 00011001 00011011 00011100 00011111
Reserved for multi-slot identifier		00100101

^{a)} For national use only

The following codes are used in the automatic congestion level parameter field:

```

00000000    spare
00000001    congestion level 1 exceeded
00000010    congestion level 2 exceeded
00000011    }
to          } spare
11111111    }

```

3.4 Backward call indicators

The format of the backward call indicators parameter field is shown in Figure 6/Q.763.

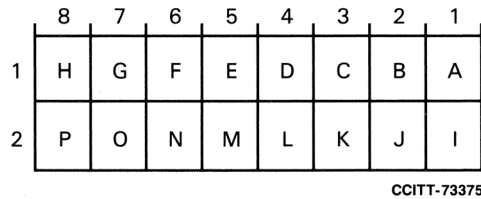


FIGURE 6/Q.763

Backward call indicators parameter field

The following codes are used in the backward call indicators parameter field:

```

bits B A: Charge indicator
0 0 no indication
0 1 no charge
1 0 charge
1 1 spare

bits D C: Called party's status indicator
0 0 no indication
0 1 subscriber free
1 0 connect when free
1 1 spare

bits F E: Called party's category indicator
0 0 no indication
0 1 ordinary subscriber
1 0 payphone
1 1 spare

bits H G: End-to-end method indicator (Note)
0 0 no end-to-end method available (only link-by-link method available)
0 1 pass along method available
1 0 SCCP method available
1 1 pass along and SCCP methods available

bit I: Interworking indicator (Note)
0 no interworking encountered
1 interworking encountered

bit J: End-to-end information indicator (Note)
0 no end-to-end information available
1 end-to-end information available

bit K: ISDN User Part indicator (Note)
0 ISDN User Part not used all the way
1 ISDN User Part used all the way

bit L: Holding indicator (national use)
0 holding not requested
1 holding requested

```

- bit M: ISDN access indicator
 - 0 terminating access non-ISDN
 - 1 terminating access ISDN
- bit N: Echo control device indicator
 - 0 incoming half echo control device not included
 - 1 incoming half echo control device included
- bits P O: SCCP method indicator
 - 0 0 no indication
 - 0 1 connectionless method available
 - 1 0 connection oriented method available
 - 1 1 connectionless and connection oriented methods available

Note – Bits G-K and O-P constitute the protocol control indicator.

3.5 Call modification indicators

The format of the call modification indicators parameter field is shown in Figure 7/Q.763.

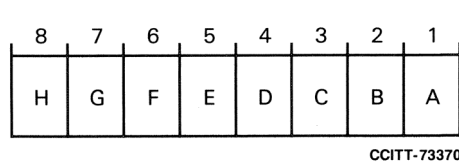


FIGURE 7/Q.763

Call modification indicators parameter field

The following codes are used in the call modification indicators parameter field:

- bits B A: Modification indicator
 - 0 0 spare
 - 0 1 modify to service 1
 - 1 0 modify to service 2
 - 1 1 spare
- bits H C: Spare

Note – Service 1 and 2 are described by the transmission medium requirement.

3.6 Call reference

The format of the call reference parameter is shown in Figure 8/Q.763.

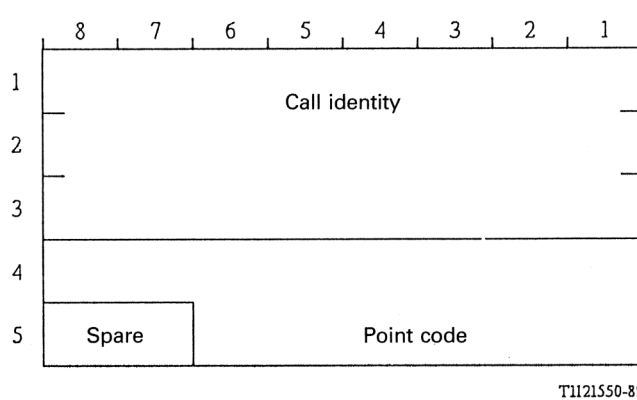


FIGURE 8/Q.763

Call reference parameter field

The following codes are used in the subfields of the call reference parameter field:

a) *Call identity*

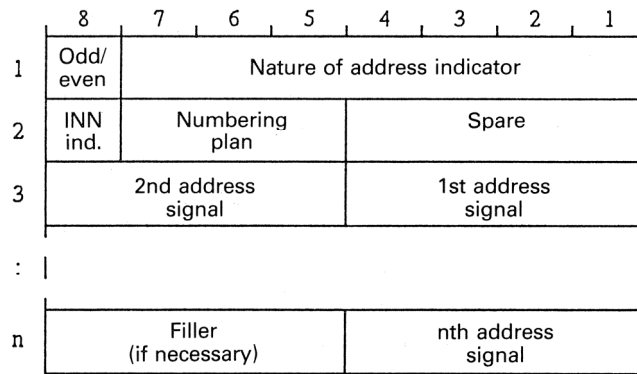
A code expressing in pure binary representation the identification number allocated to the call.

b) *Point code*

The code of the signalling point in which the call identity is relevant.

3.7 *Called party number*

The format of the called party number parameter field is shown in Figure 9/Q.763.



T1110050-88

FIGURE 9/Q.763

Called party number parameter field

The following codes are used in the subfields of the called party number parameter field:

a) *Odd/even indicator*

- 0 even number of address signals
- 1 odd number of address signals

b) *Nature of address indicator*

- 0000000 spare
- 0000001 subscriber number
- 0000010 spare, reserved for national use
- 0000011 national (significant) number
- 0000100 international number

- 0000101 }
to } spare
- 1101111 }

- 1110000 }
to } reserved for national use
- 1111110 }

- 1111111 spare

c) *Internal network number indicator (INN ind.)*

- 0 routing to internal network number allowed
- 1 routing to internal network number not allowed

d) *Numbering plan indicator*

- 000 spare
- 001 ISDN (Telephony) numbering plan (Recommendation E.164, E.163)
- 010 spare
- 011 Data numbering plan (Recommendation X.121)
- 100 Telex numbering plan (Recommendation F.69)

- 101 reserved for national use
- 110 reserved for national use
- 111 spare

e) *Address singal*

- 0000 digit 0
- 0001 digit 1
- 0010 digit 2
- 0011 digit 3
- 0100 digit 4
- 0101 digit 5
- 0110 digit 6
- 0111 digit 7
- 1000 digit 8
- 1001 digit 9
- 1010 spare
- 1011 code 11
- 1100 code 12
- 1101 spare
- 1110 spare
- 1111 ST

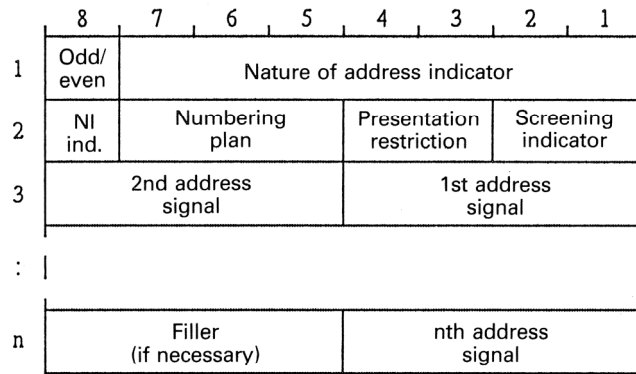
The most significant address signal is sent first. Subsequent address signals are sent in successive 4-bit fields.

f) *Filler*

In case of an odd number of address signals, the filler code 0000 is inserted after the last address signal.

3.8 *Calling party number*

The format of the calling party number parameter field is shown in Figure 10/Q.763.



T1110060-88

Note – When the address presentation restricted indicator indicates address not available, octets 3 to n are omitted.

FIGURE 10/Q.763

Calling party number parameter field

The following codes are used in the calling party number parameter field.

a) *Odd/even indicator:*

See § 3.7 a).

b) *Nature of address indicator*

- 0000000 spare
- 0000001 subscriber number

0000010	spare, reserved for national use
0000011	national (significant) number
0000100	international number
0000101	} spare
to	
1101111	}
1110000	} reserved for national use
to	
1111110	}
1111111	spare

Note – Other types of nature of address indications (e.g. transit exchange identity) are for further study.

c) *Calling party number incomplete indicator (NI)*

0	complete
1	incomplete

d) *Numbering plan indicator*

See § 3.7 d).

e) *Address presentation restricted (Pres. Restrict.) indicator*

00	presentation allowed
01	presentation restricted
10	address not available (Note)
11	spare

Note – When the address is unavailable, the subfields in items a), b), c) and d) are coded with 0's.

f) *Scenning indicator*

00	reserved (Note)
01	user provided, verified and passed
10	reserved (Note)
11	network provided

Note – Code 00 and 10 are reserved for “user provided, not verified” and “user provided, verified and failed” respectively.

g) *Address signal*

0000	digit 0
0001	digit 1
0010	digit 2
0011	digit 3
0100	digit 4
0101	digit 5
0110	digit 6
0111	digit 7
1000	digit 8
1001	digit 9
1010	spare
1111	code 11
1100	code 12
1101	} spare
to	
1111	}

h) *Filler*

See § 3.7 f).

3.9 *Calling party's category*

The format of the calling party's category parameter field is shown in Figure 11/Q.763.

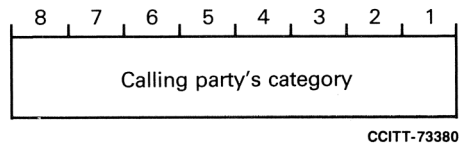


FIGURE 11/Q.763

Calling party's category parameter field

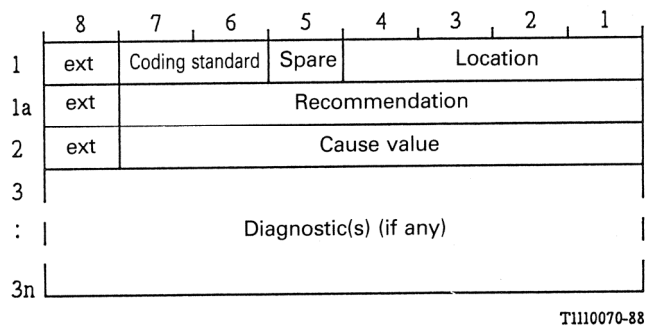
The following codes are used in the calling party's category parameter field.

00000000		calling party's category unknown at this time
00000001		operator, language French
00000010		operator, language English
00000011		operator, language German
00000100		operator, language Russian
00000101		operator, language Spanish
00000110	}	available to Administrations for
00000111	}	selecting a particular language
00001000	}	by mutual agreement
00001001		reserved (see Recommendation Q.104) (Note)
00001010		ordinary calling subscriber
00001011		calling subscriber with priority
00001100		data call (voice band data)
00001101		test call
00001110		spare
00001111		payphone
00010000	}	
to	}	spare
11011111	}	
11100000	}	
to	}	reserved for national use
11111110	}	
11111111		spare

Note – In national networks code 00001001 may be used to indicate that the calling party is a national operator.

3.10 *Cause indicators*

The format of the cause indicators parameter field is shown in Figure 12/Q.763.



Note 1 – Octet 1a may be omitted

Note 2 – Octet 3 to 3n may be omitted or repeated. e.g. 3' to 3'n.

FIGURE 12/Q.763

Cause indicators parameter field

The following codes are used in the subfields of the cause indicators parameter field:

a) *Extension indicator (ext)*

- 0 octet continues through the next octet (e.g. octet 1 to 1a)
- 1 last octet

b) *Coding standard*

- 00 CCITT standard, as described below
- 01 reserved for other international standards (Note)
- 10 national standard (Note)
- 11 standard specific to identified location (Note)

Note – These other coding standards should be used only when the desired cause cannot be represented with the CCITT standard.

c) *Location*

- 0000 user
- 0001 private network serving the local user
- 0010 public network serving the local user
- 0011 transit network
- 0100 public network serving the remote user
- 0101 private network serving the remote user
- 0111 international network
- 1010 beyond an interworking point, all other values are reserved.

Note – Depending on the location of the users, the public network serving the local user may be the same network serving the remote user. Rules for coding the location field are defined in Recommendation Q.931 Annex J.

d) *Recommendation*

- 0000000 Rec. Q.763
- 0000011 Rec. X.21
- 0000100 Rec. X.25
- 0000101 Public land mobile networks, Q.1000 Series.
All other values are reserved.

Note – If octet 1a is omitted, Recommendation Q.763 is assumed.

e) *Cause value*

The cause value is divided into two fields, a class (bits 5 through 7) and a value within a class (bits 1 through 4). The decimal equivalent of the cause value is shown in brackets beside the cause value.

Class 000 and 001 – normal event:

0000001	(1)	unallocated (unassigned) number
0000010	(2)	no route to specified transit network (national use)
0000011	(3)	no route to destination
0000100	(4)	send special information tone
0000101	(5)	misdialed trunk prefix
0010000	(16)	normal call clearing
0010001	(17)	user busy
0010010	(18)	no user responding
0010011	(19)	no answer from user (user alerted)
0010101	(21)	call rejected
0010110	(22)	number changed
0011011	(27)	destination out of order
0011100	(28)	address incomplete
0011101	(29)	facility rejected
0011111	(31)	normal – unspecified

Class 010 – resource unavailable:

0100010	(34)	no circuit available
0100110	(38)	network out of order
0101001	(41)	temporary failure
0101010	(42)	switching equipment congestion
0101100	(44)	requested channel not available
0101111	(47)	resource unavailable – unspecified

Class 011 – service or option not available:

0110010	(50)	requested facility not subscribed
0110111	(55)	incoming calls barred within CUG
0111001	(57)	bearer capability not authorized
0111010	(58)	bearer capability not presently available
0111111	(63)	service/option not available – unspecified

Class 100 – service or option not implemented:

1000001	(65)	bearer capability not implemented
1000101	(69)	requested facility not implemented
1000110	(70)	only restricted digital information bearer capability is available
1001111	(79)	service or option not implemented – unspecified

Class 101 – invalid message (e.g. parameter out of range):

1010111	(87)	called user not member of CUG
1011000	(88)	incompatible destination
1011011	(91)	invalid transit network selection (national use)
1011111	(95)	invalid message – unspecified

Class 110 – protocol error (e.g. unknown message):

1100001	(97)	message type non-existent or not implemented
1100011	(99)	parameter non-existent or not implemented – discarded
1100101	(103)	parameter non-existent or not implemented – passed on
1101111	(111)	protocol error – unspecified

Class 111 – interworking:

1111111	(127)	interworking unspecified
---------	-------	--------------------------

f) *Diagnostic*

The format and existence of the diagnostic field is dependant on the cause value and the location of generation. For causes generated by a public network, the following diagnostics may be included:

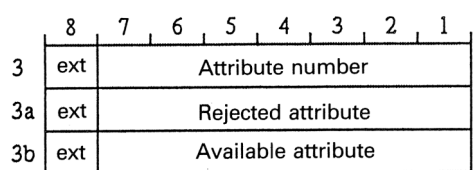
<i>Cause</i>	<i>Diagnostic</i>	<i>Format</i>
1	Condition	See below
2	Transit Network identity	See § 3.34 (Note)
3	Condition	See below

16	Condition	See below
21	Condition	See below
22	Called party number (new)	See § 3.7 (Note)
29	Rejected parameter (Note)	
50	Rejected parameter (Note)	
57	Attribute identity	See below
58	Attribute identity	See below
65	Attribute identity	See below
69	Rejected parameter (Note)	
97	Message type	See Table 3/Q.763
99	Parameter name(s)	See Table 4/Q.763
103	Parameter name(s)	See Table 4/Q.763

Note – These diagnostics shall also include the parameter name and length octets.

1) *Diagnostic with attribute identity*

The format of the diagnostic field when coded with an attribute identity is shown in Figure 13/Q.763.



T1110080-88

FIGURE 13/Q.763

Diagnostic field for attribute identity

The attribute number subfield identifies the rejected attribute as follows:

- 0110001 Information transfer capability
- 0110010 Information transfer mode
- 0110011 Information transfer rate
- 0110100 Structure
- 0110101 Configuration
- 0110110 Establishment
- 0110111 Symmetry
- 0111000 Information transfer rate (dest to orig)
- 0111001 Layer identification and corresponding user information

The rejected attribute and available attribute subfields are coded the same as in the equivalent octet of the user service information parameter field (see § 3.36) which contains the relevant attribute. Bits not related to the rejected attribute are coded 0. If more than one bearer capability attribute was rejected, the diagnostic field can be repeated.

The extension bit (ext), when coded 0, indicates that this diagnostic continues to the next octet (e.g. octet 3a to 3b). The inclusion of the available attribute subfield is optional.

2) *Condition diagnostic*

A condition diagnostic is a 1 octet field containing an extension bit (bit 8) and one of the following codes in bits 2-1:

- 00 unknown
- 01 permanent
- 10 transient
- 11 spare

Bits 3 to 7 of a condition diagnostic are spare.

3.11 *Circuit group supervision message type indicator*

The format of the circuit group supervision message type indicator parameter field is shown in Figure 14/Q.763.

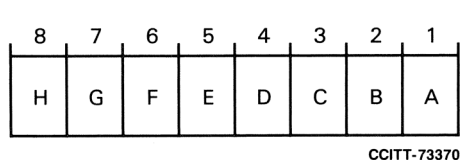


FIGURE 14/Q.763

Circuit group supervision message type indicator parameter field

The following codes are used in the circuit group supervision message type indicator parameter field:

- bits B A: Type indicator
- 0 0 maintenance oriented
 - 0 1 hardware failure oriented
 - 1 0 reserved for national use (used in 1984 version)
 - 1 1 spare
- bits C H: Spare

3.12 *Circuit state indicator*

The format of the circuit state indicator parameter field is shown in Figure 15/Q.763.

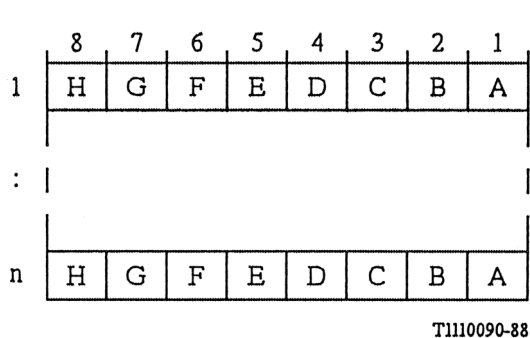


FIGURE 15/Q.763

Circuit state indicator parameter field

The number of octets in the circuit state indicator parameter field is equal to the specified range + 1. Each circuit state indicator octet is associated with a circuit identification code such that octet n is associated with circuit identification code m+n-1, where m is the circuit identification code contained in the message.

The following codes are used in each circuit state indicator octet.

- a) *for bits D C = 0 0*
- bits B A: Maintenance blocking state
- 0 0 transient
 - 0 1 spare
 - 1 0 spare
 - 1 1 unequipped
- bits E-H: Spare
- b) *for bits D C not equal to 0 0*
- bits B A: Maintenance blocking state
- 0 0 no blocking (active)
 - 0 1 locally blocked
 - 1 0 remotely blocked
 - 1 1 locally and remotely blocked

- bits D C: Call processing state
 - 0 1 circuit incoming busy
 - 1 0 circuit outgoing busy
 - 1 1 idle
- bits F E: Hardware blocking state (Note)
 - 0 0 no blocking (active)
 - 0 1 locally blocked
 - 1 0 remotely blocked
 - 1 1 locally and remotely blocked
- bits G-H: Spare

Note – If bits F E are not coded 0 0, bits D C must be coded 1 1.

3.13 Closed user group interlock code

The format of the closed user group interlock code parameter field is shown in Figure 16/Q.763.

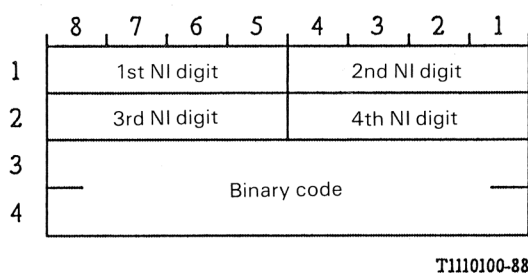


FIGURE 16/Q.763

Closed user group

The following codes are used in the subfields of the closed user group interlock code parameter field:

a) *Network identity (NI) (octets 1 and 2)*

Each digit is coded in the binary coded decimal representation from 0 to 9.

If the first digit of this field is coded 0 or 9, the TCC (Telephony Country Code) follows in the second to fourth NI digits (the most significant TCC digit is in the 2nd NI digit). If the TCC is one or two digits long, the excess digit(s) is inserted with the code for RPOA or network identification, if necessary. If octet 2 is not required, it is coded all 0.

Coding of the first digit as 1 or 8 is excluded.

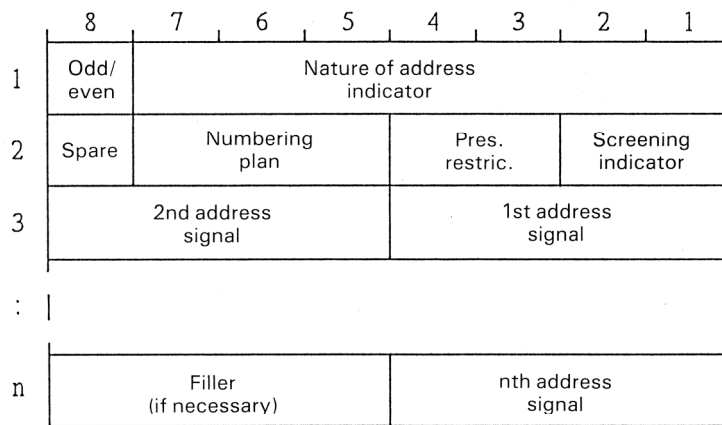
If the first digit is not 0, 9, 1 or 8 this field contains a DNIC (Data Network Identification Code) as defined in Recommendation X.121.

b) *Binary code (octets 3 and 4)*

A code allocated to a closed user group administered by a particular ISDN or data network. Bit 8 of octet 3 is the most significant and bit 1 of octet 4 is the least significant.

3.14 Connected number

The format of the connected number parameter field corresponds to the format shown in Figure 17/Q.763.



T1110060-88

Note – When the address presentation restricted indicator indicates address not available, octets 3 to n are omitted.

FIGURE 17/Q.763

Connected number parameter field

The following codes are used in the subfields of the connected number parameter field:

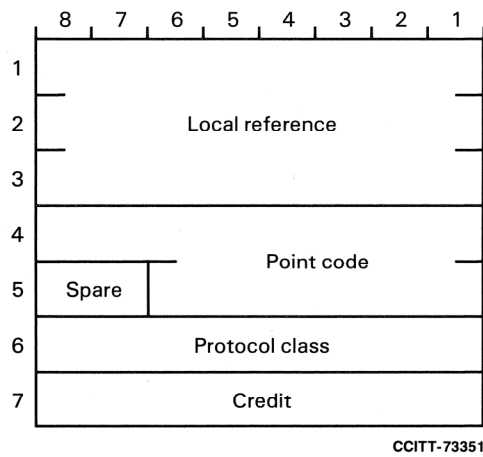
- a) Odd/even indicator: see § 3.7 a)
- b) Nature of address indicator: see § 3.7 b)
- c) Numbering plan indicator: see § 3.7 d)
- d) Address presentation restricted indicator: see § 3.8 e)
- e) Screening indicator: see § 3.8 f)
- f) Address signal: see § 3.8 g)
- g) Filler: see § 3.7 h).

3.15 Connection request

The format of the connection request parameter field is shown in Figure 18/Q.763.

The following codes are used in the subfields of the connection request parameter field:

- a) *Local reference*
A code indicating the local reference allocated by the signalling connection control part to the end-to-end connection.
- b) *Point code*
A code identifying the signalling point at which the connection request originated.
- c) *Protocol class*
A code identifying in pure binary representation, the protocol class requested for the end-to-end connection.
- d) *Credit*
A code identifying in pure binary representation the window size requested for the end-to-end connection.



Note – Octets 6 and 7 may be omitted if the protocol class requested is 2.

FIGURE 18/Q.763

Connection request parameter field

3.16 *Continuity indicators*

The format of the continuity indicators parameter field is shown in Figure 19/Q.763.

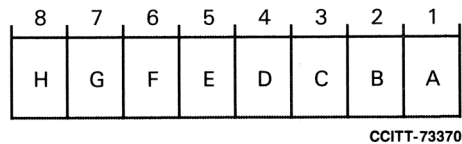


FIGURE 19/Q.763

Continuity indicators parameter field

The following codes are used in the continuity indicators parameter field.

- bit A: Continuity indicator
 - 0 continuity check failed
 - 1 continuity check successful
- bits B-H: Spare

3.17 *End of optional parameters indicator*

The last optional parameter field of a message is followed by the end of optional parameters indicator, which occupies a one octet field containing all zeros.

3.18 *Event information*

The format of the event information parameter field is shown in Figure 20/Q.763.

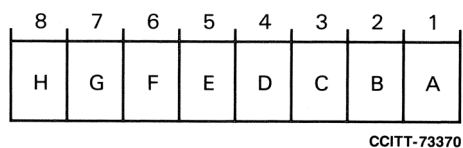


FIGURE 20/Q.763

Event information parameter field

The following codes are used in the event indicator parameter field:

bits GFEDCBA: Event indicator

0000000	spare
0000001	ALERTING
0000010	PROGRESS
0000011	in-band information of an appropriate pattern is now available
0000100	call forwarded on busy
0000101	call forwarded on no reply
0000110	call forwarded unconditional
0000111	} spare
to	
1111111	

bit H: Event presentation restricted indicator

0	no indication
1	presentation restricted

3.19 Facility indicator

The format of the facility indicator parameter field is shown in Figure 21/Q.763.

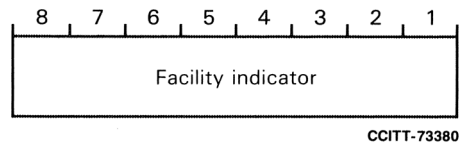


FIGURE 21/Q.763

Facility indicator parameter field

The following codes are used in the facility indicator parameter field.

00000000	spare
00000001	spare
00000010	user-to-user service
00000011	} spare
to	
11111111	

3.20 Forward call indicators

The format of the forward call indicators parameter field is shown in Figure 22/Q.763.

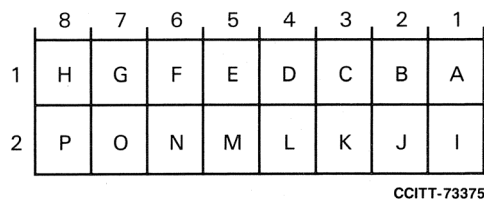


FIGURE 22/Q.763

Forward call indicators parameter field

The following codes are used in the forward call indicators parameter field:

bit A:	National/international call indicator
0	call to be treated as a national call
1	call to be treated as an international call

This bit can be set to any value in the country of origin. In the international network this bit is not checked. In the destination country, calls from the international network will have this bit set to 1.

- bits C B: End-to-end method indicator (Note)
 - 0 0 no end-to-end method available (only link-by-link method available)
 - 0 1 pass along method available
 - 1 0 SCCP method available
 - 1 1 pass along and SCCP methods available
- bit D: Interworking indicator (Note)
 - 0 no interworking encountered (No. 7 signalling all the way)
 - 1 interworking encountered
- bit E: End-to-end information indicator (Note)
 - 0 no end-to-end information available
 - 1 end-to-end information available
- bit F: ISDN user part indicator (Note)
 - 0 ISDN user part not used all the way
 - 1 ISDN user part used all the way
- bits H G: ISDN user part preference indicator
 - 0 0 ISDN user part preferred all the way
 - 0 1 ISDN user part not required all the way
 - 1 0 ISDN user part required all the way
 - 1 1 spare
- bit I: ISDN access indicator
 - 0 originating access non-ISDN
 - 1 originating access ISDN
- bits K J: SCCP method indicator
 - 0 0 no indication
 - 0 1 connectionless method available
 - 1 0 connection oriented method available
 - 1 1 connectionless and connection oriented methods available
- bit L: Spare
- bits M-P: Reserved for national use

Note – Bits B-F and J-K constitute the protocol control indicator.

3.21 Information indicators

The format of the information indicators parameter field is shown in Figure 23/Q.763.

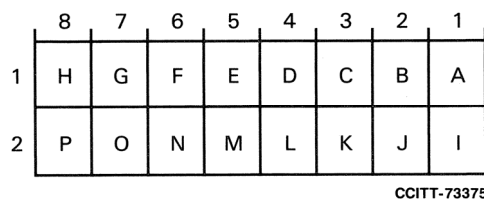


FIGURE 23/Q.763

Information indicators parameter field

The following codes are used in the information indicators parameter field:

- bits B A: Calling party address response indicator
 - 0 0 calling party address not included
 - 0 1 calling party address not available
 - 1 0 spare
 - 1 1 calling party address included

- bit C: Hold provided indicator (national use)
 - 0 hold not provided
 - 1 hold provided
- bits E D: Spare
- bit F: Calling party's category response indicator
 - 0 calling party's category not included
 - 1 calling party's category included
- bit G: Charge information response indicator (national use)
 - 0 charge information not included
 - 1 charge information included
- bit H: Solicited information indicator
 - 0 solicited
 - 1 unsolicited
- bits I-P: Spare

3.22 Information request indicators

The format of the information request indicators parameter field is shown in Figure 24/Q.763.

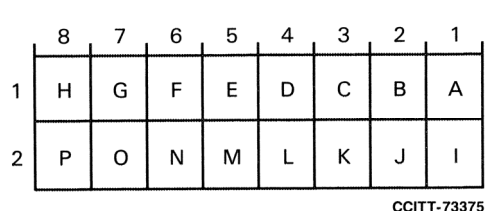


FIGURE 24/Q.763

Information request indicators parameter field

The following codes are used in the information request indicators parameter field.

- bit A: Calling party address request indicator
 - 0 calling party address not requested
 - 1 calling party address requested
- bit B: Holding indicator (national use)
 - 0 holding not requested
 - 1 holding requested
- bit C: Spare
- bit D: Calling party's category request indicator
 - 0 calling party's category not requested
 - 1 calling party's category requested
- bit E: Charge information request indicator (national use)
 - 0 charge information not requested
 - 1 charge information requested
- bits G F: Spare
- bit H: Malicious call identification request indicator (national use)
 - 0 malicious call identification not requested
 - 1 malicious call identification requested
- bits I-P: Spare

3.23 Nature of connection indicators

The format of the nature of connection indicators parameter field is shown in Figure 25/Q.763.

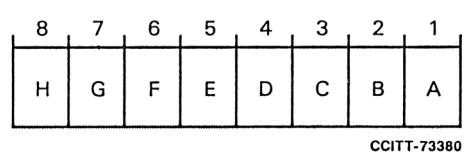


FIGURE 25/Q.763

Nature of connection indicators parameter field

The following codes are used in the nature of connection indicators parameter field:

- bits B A: Satellite indicator
 - 0 0 no satellite circuit in the connection
 - 0 1 one satellite circuit in the connection
 - 1 0 two satellite circuits in the connection
 - 1 1 spare

- bits D C: Continuity check indicator
 - 0 0 continuity check not required
 - 0 1 continuity check required on this circuit
 - 1 0 continuity check performed on a previous circuit
 - 1 1 spare

- bit E: Echo control device indicator
 - 0 outgoing half echo control device not included
 - 1 outgoing half echo control device included

- bits F-H: Spare

3.24 *Optional backward call indicators*

The format of the optional backward call indicators parameter field is shown in Figure 26/Q.763.

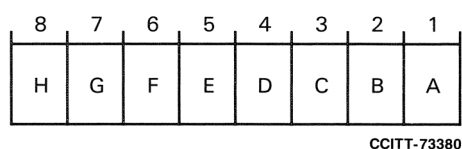


FIGURE 26/Q.763

Optional backward call indicators parameter field

The following codes are used in the optional backward call indicators parameter field:

- bit A: In-band information indicator
 - 0 no indication
 - 1 in-band information or an appropriate pattern is now available

- bit B: Call forwarding may occur indicator
 - 0 no indication
 - 1 call forwarding may occur

- bits C-D: Spare

- bits E-H: Reserved for national use

3.25 *Optional forward call indicators*

The format of the optional forward call indicators parameter field is shown in Figure 27/Q.763.

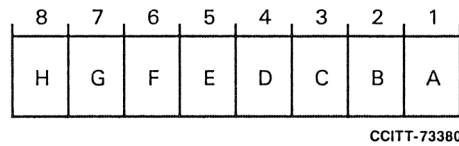


FIGURE 27/Q.763

Optional forward call indicators parameter field

The following codes are used in the optional forward call indicators parameter field:

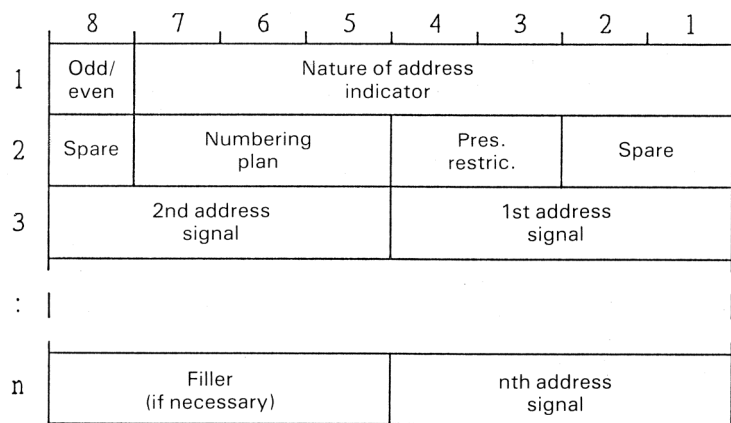
- bits B A: Closed user group call indicator
- 0 0 non-CUG call
 - 0 1 spare
 - 1 0 closed user group call, outgoing access allowed
 - 1 1 closed user group call, outgoing access not allowed
- bit C-H: Spare

3.26 *Original called number*

The format of the original called number parameter field corresponds to the format shown in Figure 28/Q.763.

The following codes are used in the subfields of the original called number parameter field:

- a) Odd/even indicator: see § 3.7 a)
- b) Nature of address indicator: see § 3.7 b)
- c) Numbering plan indicator: see § 3.7 d)
- d) Address presentation restricted indicator: see § 3.8 e)
- e) Address signal: see § 3.8 g)
- f) Filler: see § 3.7 h).



T1110060-88

Note – When the address presentation restricted indicator indicates address not available, octets 3 to n are omitted.

FIGURE 28/Q.763

Original called number parameter field

3.27 *Range and status*

The format of the range and status parameter field is shown in Figure 29/Q.763.

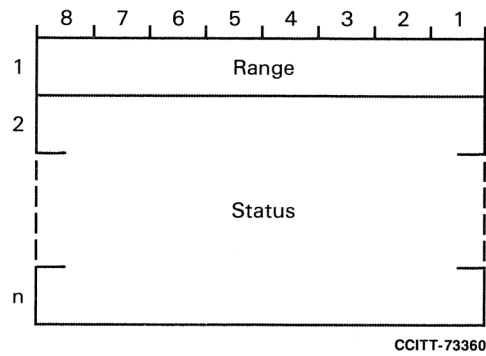


FIGURE 29/Q.763

Range and status parameter field

The following codes are used in the subfields of the range and status parameter field:

a) *Range*

A number in pure binary representation ranging from 0 to 255. Range code 0 indicates absence of the status field. The number represented by a non-zero range code +1 indicates the range of circuits affected by the message.

b) *Status*

The status subfield contains from 1 to 256 status bits numbered from 0 to 255. Status bit 0 is located in bit position 1 of the first status subfield octet. Other status bits follow in numerical order. The number of relevant status bits in a given status subfield is equal to range +1.

Each status bit is associated with a circuit identification code such that status bit n is associated with circuit identification code m+n, where m is the circuit identification code contained in the message.

The status bits are coded as follows:

- in circuit group blocking messages
 - 0 no indication
 - 1 blocking
- in circuit group blocking acknowledgement messages
 - 0 no indication
 - 1 blocking acknowledgement
- in circuit group unblocking messages
 - 0 no indication
 - 1 unblocking
- in circuit group unblocking acknowledgement messages
 - 0 no indication
 - 1 unblocking acknowledgement
- in circuit group reset acknowledgement messages
 - 0 not blocked for maintenance reasons
 - 1 blocked for maintenance reasons

The number of circuits affected by a group supervision message is limited to 32 or less. For the group reset and query messages this requires that the range value be 31 or less. For the group blocking and unblocking messages the range value may be up to 255, but the number of status bits set to 1 must be 32 or less.

For the group blocking, unblocking and reset messages, range code 0 is reserved.

3.28 *Redirecting number*

The format of the redirecting number parameter field corresponds to the format shown in Figure 28/Q.763.

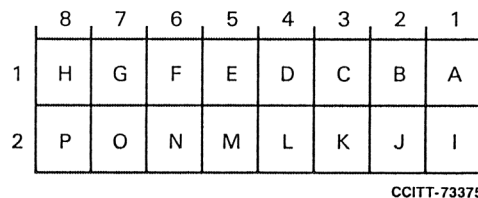
The following codes are used in the subfields of the redirecting number parameter field:

- a) Odd/even indicator: see § 3.7 a)

- b) Nature of address indicator: see § 3.7 b)
- c) Numbering plan indicator: see § 3.7 d)
- d) Address presentation restricted indicator: see § 3.8 e)
- e) Address signal: see § 3.8 g)
- f) Filler: see § 3.7 f).

3.29 *Redirection information*

The format of the redirection information parameter field is shown in Figure 30/Q.763.



Note – Octet 2 is omitted if the redirection counter is coded 001.

FIGURE 30/Q.763

Redirection information parameter field

The following codes are used in the redirection information parameter field:

- | | | | | | |
|------|----|---|----|--|------------------------------|
| bits | C | B | A: | Redirecting indicator | |
| | 0 | 0 | 0 | no redirection | |
| | 0 | 0 | 1 | call rerouted | |
| | 0 | 1 | 0 | call rerouted, all redirection information presentation restricted | |
| | 0 | 1 | 1 | call forwarded | |
| | 1 | 0 | 0 | call forwarded, all redirection information presentation restricted | |
| | 1 | 0 | 1 | call rerouted, redirection number presentation restricted | |
| | 1 | 1 | 0 | call forwarded, redirection number presentation restricted | |
| | 1 | 1 | 1 | spare | |
| bit | D: | | | Spare | |
| bits | H | G | F | E: | Original redirection reasons |
| | 0 | 0 | 0 | 0 | unknown/not available |
| | 0 | 0 | 0 | 1 | user busy |
| | 0 | 0 | 1 | 0 | no reply |
| | 0 | 0 | 1 | 1 | unconditional |
| | 0 | 1 | 0 | 0 | } spare |
| | to | | | | |
| | 1 | 1 | 1 | 1 | } |
| bits | K | J | I: | Redirection counter. Number of redirections the call has undergone expressed as a binary number between 1 and 5. | |
| bit | L: | | | Spare | |
| bits | P | O | N | M: | Redirecting reason |
| | 0 | 0 | 0 | 0 | unknown/not available |
| | 0 | 0 | 0 | 1 | user busy |
| | 0 | 0 | 1 | 0 | no reply |
| | 0 | 0 | 1 | 1 | unconditional |
| | 0 | 1 | 0 | 0 | } spare |
| | to | | | | |
| | 1 | 1 | 1 | 1 | } |

3.30 *Redirection number*

The format of the redirection number parameter field corresponds to the format shown in Figure 9/Q.763.

The following codes are used in the subfields of the redirection number parameter field:

- a) Odd/even indicator: see § 3.7 a)
- b) Nature of address indicator: see § 3.7 b)
- c) Internal network number indicator: see § 3.7 c)
- d) Numbering plan indicator: see § 3.7 d)
- e) Address signal: see § 3.8 f)
- f) Filler: see § 3.7 f).

3.31 *Signalling point code (national use)*

The format of the signalling point code parameter field is shown in Figure 31/Q.763.

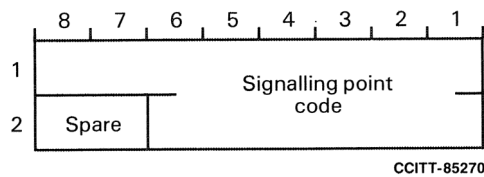


FIGURE 31/Q.763

Signalling point code

The signalling point code is a pure binary representation of the code allocated to a node in the signalling network.

3.32 *Subsequent number*

The format of the subsequent number parameter field is shown in Figure 32/Q.763.

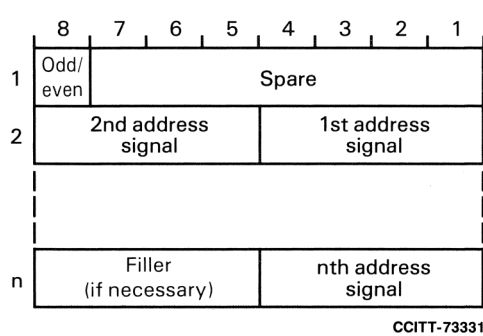


FIGURE 32/Q.763

Subsequent number parameter field

The following codes are used in the subfields of the subsequent number parameter field:

- a) Odd/even indicator: see § 3.7 a)
- b) Address signal: see § 3.7 e)
- c) Filler: see § 3.7 f).

3.33 *Suspend/resume indicators*

The format of the suspend/resume indicators parameter field is shown in Figure 33/Q.763.

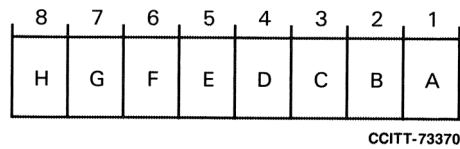


FIGURE 33/Q.763

Suspend/resume indicators parameter field

The following codes are used in the suspend/resume indicators parameter field:

- bit A: Suspend/resume indicator
- 0: ISDN subscriber initiated
- 1: network initiated
- bits B-H: Spare

3.34 *Transit network selection (national use)*

The format of the transit network selection parameter field is shown in Figure 34/Q.763.

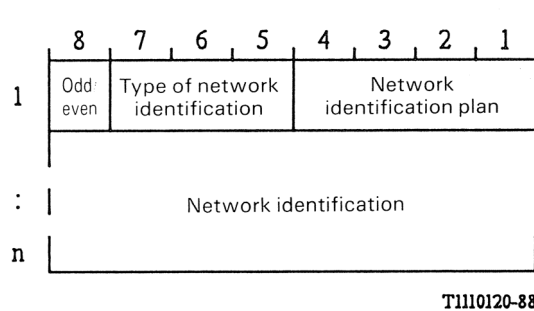


FIGURE 34/Q.763

Transit network selection parameter field

The following codes are used in the subfields of the transit network selection parameter field:

- a) *Odd/even indicator*
 - 0 even number of digits
 - 1 odd number of digits
- b) *Type of network identification*
 - 000 CCITT-standardized identification
 - 010 national network identification
 - other reserved
- c) *Network identification plan*
 - i) For CCITT-standardized identification
 - 0000 unknown
 - 0011 public data network identification code (DNIC), Recommendation X.121
 - 0110 public land mobile network identification code (MNIC), Recommendation E.212
 - other spare
 - ii) For national network identification
 - This information is coded according to national specifications.
- d) *Network identification*
 - This information is organized according to the network identification plan and the encoding principles given in § 3.8 f).

3.35 *Transmission medium requirement*

The format of the transmission medium requirement parameter field is shown in Figure 35/Q.763.

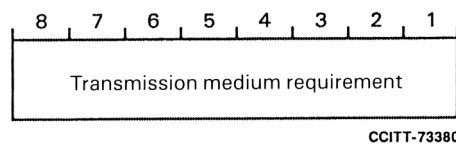


FIGURE 35/Q.763

Transmission medium requirement parameter field

The following codes are used in the transmission medium requirement parameter field.

00000000	speech
00000001	spare
00000010	64 kbit/s unrestricted
00000011	3.1 kHz audio
00000100	alternate speech (service 2)/64 kbit/s unrestricted (service 1) (Note 1)
00000101	alternate 64 kbit/s unrestricted (service 1)/speech (service 2) (Note 2)
00000110	spare
00000111	reserved for 2 × 64 kbit/s unrestricted
00001000	reserved for 384 kbit/s unrestricted
00001001	reserved for 1536 kbit/s unrestricted
00001010	reserved for 1920 kbit/s unrestricted
00001011	} spare
to	
11111111	

Note 1 – The initial mode is speech.

Note 2 – The initial mode is 64 kbit/s unrestricted.

3.36 *User service information*

The format of the user service information parameter field is shown in Figure 36/Q.763. This format is the same as the bearer capability information element from Recommendation Q.931 and not all capabilities coded here are supported at this time.

	8	7	6	5	4	3	2	1
1	Ext.	Coding standard		Information transfer capability				
2	Ext.	Transfer mode		Information transfer rate				
2a	Ext.	Structure			Configuration		Establishment	
2b	Ext.	Symmetry		Information transfer rate (destination to origination)				
3	Ext.	Layer ident.		User information layer 1 protocol				
4	Ext.	Layer ident.		User information layer 2 protocol				
5	Ext.	Layer ident.		User information layer 3 protocol				

T1121560-89

Note 1 – Octet 2a is omitted if default values apply to all fields of octets 2a and 2b.

Note 2 – Octet 2b is omitted if default values apply to all fields of octet 2b.

Note 3 – Octets 3, 4, 5 or any combination of these octets may be omitted. Octet 3 may be extended as described in § 3.36 k).

FIGURE 36/Q.763

User service information parameter field

The following codes are used in the subfields of the user service information parameter field:

a) *Extension indicator (ext)*

- 0 octet continues through the next octet (e.g. octet 2 to 2a, 2a to 2b, 3 to 3a)
- 1 last octet

b) *Coding standard*

- 00 CCITT standardized coding as described below
- 01 reserved for other international standards (Note)
- 10 national standard (Note)
- 11 standard defined for the network (either public or private) present on the network side of the interface (Note)

Note – These other coding standards should only be used when the desired bearer capability cannot be represented with the CCITT standardized coding.

c) *Information transfer capability*

- 00000 speech
- 01000 unrestricted digital information
- 01001 restricted digital information
- 10000 3.1 kHz audio
- 10001 7 kHz audio
- 11000 video

All other values are reserved

d) *Transfer mode*

- 00 circuit mode
 - 10 packet mode
- All other values are reserved

e) *Information transfer rate (octets 2 and 2b) (Note 1)*

- 00000 This code shall be used for packet-mode calls
- 10000 64 kbit/s
- 10001 2 × 64 kbit/s (Note 2)

10011 384 kbit/s
 10101 1536 kbit/s
 10111 1920 kbit/s

All other values are reserved.

Note 1 – When octet 2b is omitted, the bearer capability is bidirectional symmetric at the information transfer rate specified in octet 2. When octet 2b is included, the information rate in octet 2 refers to the origination to destination direction.

Note 2 – For this case, the coding of octets 1 and 2a refer to both 64 kbit/s circuits.

f) *Structure*

000 default (Note 1)
 001 8 kHz integrity (Note 2)
 100 service data unit integrity
 111 unstructured

All other values are reserved.

Note 1 – If octet 2a is omitted, or the structure field is coded 000, then the value of the structure attribute is according to the following:

<i>Transfer mode</i>	<i>Transfer capability</i>	<i>Structure</i>
circuit	speech	8 kHz integrity
circuit	unrestricted digital	8 kHz integrity
circuit	restricted digital	8 kHz integrity
circuit	audio	8 kHz integrity
circuit	video	8 kHz integrity
packet	unrestricted digital	service data unit integrity

Note 2 – When the information transfer rate 2×64 kbit/s is used, 8 kHz integrity with Restricted Differential Time Delay (RDTD) is offered.

g) *Configuration*

00 point-to-point

All other values are reserved. If omitted, the configuration is assumed to be point-to-point.

h) *Establishment*

00 demand

All other values are reserved. If omitted, the establishment is assumed to be demand.

i) *Symmetry*

00 bidirectional symmetric

All other values are reserved. If omitted, the symmetry is assumed to be bidirectional symmetric.

j) *Layer identification*

00 reserved
 01 user information layer 1 protocol
 10 user information layer 2 protocol
 11 user information layer 3 protocol

Note – Bits 5-1 of the same octet represent the corresponding identification as per points k), l) and m) below. If octet 3, 4 or 5 is omitted, the corresponding user information protocol is assumed to be undefined.

k) *User information layer 1 protocol identification*

00001 CCITT standardized rate adaption V.110/X.30. This implies the presence of octet 3a defined in § 3.36 k) 1), and optionally octets 3b, 3c and 3d defined in § 3.36 k) 2) below.
 00010 Recommendation G.711 μ -law
 00010 Recommendation G.711 A-law
 00100 Recommendation G.721 32 kbit/s ADPCM and Recommendation I.460
 00101 Recommendations G.722 and G.724 for 7 kHz audio
 00110 Recommendation G.735 for 384 kbit/s video
 00111 non-CCITT standardized rate adaption. This implies the presence of octet 3a, and optionally 3b, 3c and 3d. The use of this codepoint indicates that the user rate specified in octet 3a is defined

- in accordance with the non-CCITT standardized rate adaption scheme. Additionally, octets 3b, 3c and 3d, if present, are defined consistent with the specified rate adaption.
- 01000 CCITT standardized rate adaption V.120. This implies the presence of octet 3a defined in § 3.36 k) 1), octet 3b defined in § 3.36 k) 3), and optionally octets 3c and 3d defined in § 3.36 k) 2) below.
- 01001 CCITT standardized rate adaption X.31 HDLC flag stuffing.
- All other values are reserved.

Note – Octet 3 shall be omitted if the transfer mode is “circuit-mode”, the information transfer capability is “unrestricted digital information” or “restricted digital information” and the user information layer 1 protocol is not to be identified to the network; octet 3 may be omitted if the transfer mode is “packet-mode”; otherwise octet 3 shall be present.

- 1) *Octet 3a for layer 1 rate adaption* (see Figure 37/Q.763)

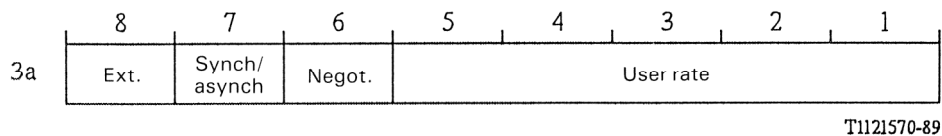


FIGURE 37/Q.763

Basic layer 1 rate adaption fields

- The synchronous/asynchronous indicator is coded:

- 0 synchronous
- 1 asynchronous

Octets 3b to 3d may be omitted in case of synchronous user rates.

- The negotiation indicator is coded:

- 0 in-band negotiation not possible
- 1 in-band negotiation possible

Note – See Recommendations V.110 and X.30

- The user rate is coded:

00000	rate indicated by E-bits	Rec. I.460
00001	0.6 kbit/s	Rec. V.6 and X.1
00010	1.2 kbit/s	Rec. V.6
00011	2.4 kbit/s	Rec. V.6 and X.1
00100	3.6 kbit/s	Rec. V.6
00101	4.8 kbit/s	Rec. V.6 and X.1
00110	7.2 kbit/s	Rec. V.6
00111	8.0 kbit/s	Rec. I.460
01000	9.6 kbit/s	Rec. V.6 and X.1
01001	14.4 kbit/s	Rec. V.6
01010	16.0 kbit/s	Rec. I.460
01011	19.2 kbit/s	Rec. V.6
01100	32.0 kbit/s	Rec. I.460
01110	48.0 kbit/s	Rec. V.6 and X.1
01111	56.0 kbit/s	Rec. V.6
10101	0.1345 kbit/s	Rec. X.1
10110	0.100 kbit/s	Rec. X.1
10111	0.075/1.2 kbit/s	Rec. V.6 and X.1 (Note)
11000	1.2/0.075 kbit/s	Rec. V.6 and X.1 (Note)
11001	0.050 kbit/s	Rec. V.6 and X.1
11010	0.075 kbit/s	Rec. V.6 and X.1
11011	0.110 kbit/s	Rec. V.6 and X.1
11100	0.150 kbit/s	Rec. V.6 and X.1
11101	0.200 kbit/s	Rec. V.6 and X.1
11110	0.300 kbit/s	Rec. V.6 and X.1

11111

12 kbit/s

Rec. V.6 and X.1

All other values are reserved.

Note – The first rate is the transmit rate in the forward direction of the call. The second rate is the transmit rate in the backward direction of the call.

2) *Octets 3b, 3c and 3d for Recommendations V.110/X.30 rate adaption* (see Figure 38/Q.763)

	8	7	6	5	4	3	2	1
3b	Ext.	Intermediate rate		NIC on Tx	NIC on Rx	Flow cont. on Tx	Flow cont. on Rx	Spare
3c	Ext.	Number of stop bits		Number of data bits		Parity		
3d	Ext.	Duplex mode	Modem type					

T1121580-89

Note – Octets 3c and 3d may be omitted.

FIGURE 38/Q.763

Recommendations V.110/X.30 rate adaptation extension fields

- Intermediate rate indicator is coded:
 - 00 not used
 - 01 8 kbit/s
 - 10 16 kbit/s
 - 11 32 kbit/s
- Network independent clock (NIC) on transmission (TX) indicator is coded:
 - 0 not required to send data with NIC
 - 1 required to send data with NIC

Note – Refers to transmission in the forward direction of the call, see Recommendations V.110 and X.30
- Network independent clock (NIC) on reception (Rx) indicator is coded:
 - 0 cannot accept data with NIC (i.e. sender does not support this optional procedure)
 - 1 can accept data with NIC (i.e. sender does support this optional procedure)

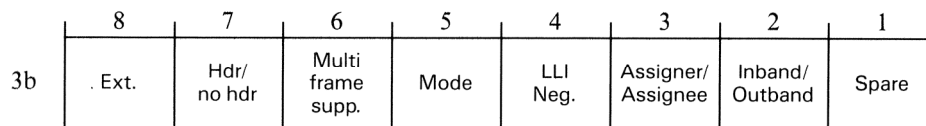
Note – Refers to transmission in the backward direction of the call, see Recommendations V.110 and X.30.
- Flow control on transmission (Tx) indicator is coded:
 - 0 not required to send data with flow control mechanism
 - 1 required to send data with flow control mechanism

Note – Refers to transmission in the forward direction of the call, see Recommendations V.110 and X.30.
- Flow control on reception (Rx) indicator is coded:
 - 0 cannot accept data with flow control mechanism (i.e. sender does not support this optional procedure)
 - 1 can accept data with flow control mechanism (i.e. sender does support this optional procedure)

Note – See Recommendations V.110 and X.30.
- Number of stop bits indicator is coded:
 - 00 not used
 - 01 1 bit
 - 10 1.5 bits

- 11 2 bits
 - Number of data bits indicator, including parity bit if present, is coded:
 - 00 not used
 - 01 5 bits
 - 10 7 bits
 - 11 8 bits
 - Parity indicator is coded:
 - 000 odd
 - 010 even
 - 011 none
 - 100 forced to 0
 - 101 forced to 1

All other values are reserved
 - Duplex mode indicator is coded:
 - 0 half duplex
 - 1 full duplex
 - modem type indicator is coded according to network specific rules.
- 3) *Octet 3b for Recommendation V.120 rate adaption* (see Figure 39/Q.763)



T1110150-88

Note – Octets 3c and 3d in Figure 38/Q.763 may also be present.

FIGURE 39/Q.763

Recommendation V.120 rate adaption extension fields

- Rate adaption header/no header indicator is coded:
 - 0 rate adaption header not included
 - 1 rate adaption header included
- Multiple frame establishment support in data link indicator is coded:
 - 0 multiple frame establishment not supported, only UI frames allowed
 - 1 multiple frame establishment supported
- Mode of operation indicator is coded:
 - 0 bit transparent mode of operation
 - 1 protocol sensitive mode of operation
- Logical link identifier (LLI) negotiation indicator is coded:
 - 0 default, LLI = 256 only
 - 1 full protocol negotiation (*Note*)

Note – A connection over which protocol negotiation will be executed is indicated in bit 2 of octet 3b.
- Assignor/assignee indicator is coded:
 - 0 message originator is “default assignee”
 - 1 message originator is “assignor only”
- In-band/out-of-band negotiation indicator is coded:
 - 0 negotiation is done with USER INFORMATION messages on a temporary signalling connection
 - 1 negotiation is done in-band using logical link zero

l) *User information layer 2 protocol identification*

- 00010 Recommendation Q.921 (I.441)
- 00110 Recommendation X.25, link level

All other values are reserved. If the transfer mode is “packet mode”, this octet shall be present. In other cases, the octet is present only if the protocol is to be identified to the network.

m) *User information layer 3 protocol identification*

- 00010 Recommendation Q.931 (I.451)
- 00110 Recommendation X.25, link level

All other values are reserved. The octet is present only if the protocol is to be identified to the network.

3.37 *User-to-user indicators*

The format of the user-to-user indicators parameter field is shown in Figure 40/Q.763.

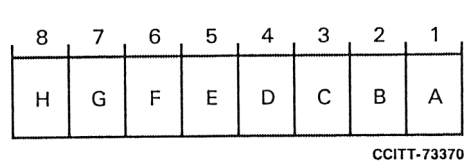


FIGURE 40/Q.763

User-to-user indicators parameter field

The following codes are used in the user-to-user indicators parameter field:

- | | |
|-------|----------|
| bit A | Type |
| 0 | request |
| 1 | response |

If bit A equals 0 (request):

- | | | |
|--------|----|------------------------|
| bits C | B: | Service 1 |
| 0 | 0 | no information |
| 0 | 1 | spare |
| 1 | 0 | request, not essential |
| 1 | 1 | request, essential |

- | | | |
|--------|----|------------------------|
| bits E | D: | Service 2 |
| 0 | 0 | no information |
| 0 | 1 | spare |
| 1 | 0 | request, not essential |
| 1 | 1 | request, essential |

- | | | |
|--------|----|------------------------|
| bits G | F: | Service 3 |
| 0 | 0 | no information |
| 0 | 1 | spare |
| 1 | 0 | request, not essential |
| 1 | 1 | request, essential |

- | | |
|-------|-------|
| bit H | Spare |
|-------|-------|

If bit A equals 1 (response):

- | | | |
|--------|----|----------------|
| bits C | B: | Service 1 |
| 0 | 0 | no information |
| 0 | 1 | not provided |
| 1 | 0 | provided |
| 1 | 1 | spare |

- | | | |
|--------|----|----------------|
| bits E | D: | Service 2 |
| 0 | 0 | no information |
| 0 | 1 | not provided |
| 1 | 0 | provided |

	1	1	spare
bits	G	F:	Service 3
	0	0	no information
	0	1	not provided
	1	0	provided
	1	1	spare
bit	H		Spare

3.38 *User-to-user information*

The format of the user-to-user information parameter is shown in Figure 41/Q.763.

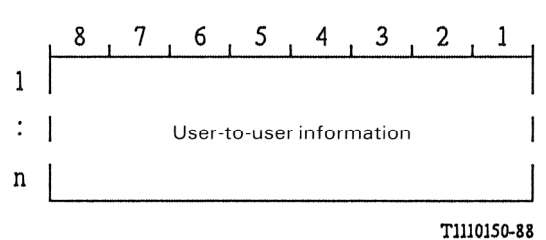


FIGURE 41/Q.763

User-to-user information parameter field

The format of the user-to-user information parameter field is coded identically to the protocol discriminator plus user information field described in Recommendation Q.931, § 4.5.29.

4 ISDN user part messages and codes

In the following tables the format and coding of ISDN user part messages is specified. For each message, a list of the relevant parameters is given and for each parameter:

- a *reference* to the section where the formatting and coding of the parameter content is specified;
- the *type* of the parameter. The following types are used in the tables:
 - F = mandatory fixed length parameter;
 - V = mandatory variable length parameter;
 - O = optional parameter of fixed or variable length;
- the *length* of the parameter. The value in the table includes:
 - *for type F parameters* the length, in octets, of the parameter content;
 - *for type V parameters* the length, in octets, of the length indicator and of the parameter content. The minimum and the maximum length are indicated;
 - *for type O parameters* the length, in octets, of the parameter name, length indicator and parameter content. For variable length parameters the minimum and maximum length is indicated.

For each message type, type F parameters and the pointers for the type V parameters must be sent in the order specified in the tables.

The routing label and circuit identification code fields, which are transmitted ahead of the message type field if required are not shown. Parameter names, pointers to mandatory variable fields and the optional part, and length indicators appear in the message in accordance with Figure 3/Q.763 and are not shown explicitly in Tables 5/Q.763 to 28/Q.763.

TABLE 5/Q.763

Message type: Address complete

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Backward call indicators	3.4	F	2
Optional backward call indicators	3.24	O	3
Cause indicators	3.10	O	4-?
Connected number	3.14	O	4-12
Call reference	3.6	O	7
User-to-user indicators	3.37	O	3
User-to-user information	3.38	O	3-131 ^{a)}
Access transport	3.2	O	3-?
End of optional parameters	3.17	O	1

^{a)} Some networks may only support up to 35 octets.

TABLE 6/Q.763

Message type: Answer

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Backward call indicators	3.4	O	4
Optional backward call indicators	3.24	O	3
Call reference	3.6	O	7
User-to-user indicators	3.37	O	3
User-to-user information	3.38	O	3-131 ^{a)}
Connected number	3.14	O	4-12
Access transport	3.2	O	3-?
End of optional parameters	3.17	O	1

^{a)} Some networks may only support up to 35 octets.

TABLE 7/Q.763

Message type: Call progress

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Event information	3.18	F	1
Cause indicators	3.10	O	4-?
Call reference	3.6	O	7
Backward call indicators	3.4	O	4
Optional backward call indicators	3.24	O	3
Access transport	3.2	O	3-?
User-to-user indicators	3.37	O	3
User-to-user information	3.38	O	3-131 ^{a)}
Redirection number	3.30	O	5-12
End of optional parameters	3.17	O	1

^{a)} Some networks may only support up to 35 octets.

TABLE 8/Q.763

Message type: Circuit group query response

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Range and status ^{a)}	3.27	V	2
Circuit state indicator	3.12	V	3-33

^{a)} The status subfield is not present.

TABLE 9/Q.763

Message type: Circuit group reset acknowledgement

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Range and status	3.27	V	3-34

TABLE 10/Q.763

Message type: Confusion

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Cause indicators	3.10	V	3-?
End of optional parameters	3.17	O	1

TABLE 11/Q.763

Message type: Connect

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Backward call indicators	3.4	F	2
Optional backward call indicators	3.24	O	3
Connected number	3.14	O	4-12
Call reference	3.6	O	7
User-to-user indicators	3.37	O	3
User-to-user information	3.38	O	3-131 ^{a)}
Access transport	3.2	O	3-?
End of optional parameters	3.17	O	1

^{a)} Some networks may only support up to 35 octets.

TABLE 12/Q.763

Message type: Continuity

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Continuity indicators	3.16	F	1

TABLE 13/Q.763

Message type: Facility reject

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Facility indicator	3.19	F	1
Cause indicators	3.10	V	3-?
User-to-user indicators	3.37	O	3
Call reference	3.6	O	7
End of optional parameters	3.17	O	1

TABLE 14/Q.763

Message type: Information

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Information indicators	3.21	F	2
Calling party's category	3.9	O	3
Calling party number	3.8	O	5-12
Call reference	3.6	O	7
Connection request	3.15	O	7-9
Access transport	3.2	O	4-?
End of optional parameters	3.17	O	1

TABLE 15/Q.763

Message type: Information request

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Information request indicators	3.22	F	2
Call reference	3.6	O	7
End of optional parameters	3.17	O	1

TABLE 16/Q.763

Message type: Initial address

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Nature of connection indicators	3.23	F	1
Forward call indicators	3.20	F	2
Calling party's category	3.9	F	1
Transmission medium requirement	3.35	F	1
Called party number	3.7	V	4-11
Transit network selection ^{a)}	3.34	O	4-?
Call reference	3.6	O	7
Calling party number	3.8	O	4-12
Optional forward call indicators	3.25	O	3
Redirecting number	3.28	O	4-12
Redirection information	3.29	O	3-4
Closed user group interlock code	3.13	O	6
Connection request	3.15	O	7-9
Original called number	3.26	O	4-12
User-to-user information ^{b)}	3.38	O	3-131
Access transport	3.2	O	3-?
User service information ^{c)}	3.36	O	4-13
User-to-user indicators	3.37	O	3
End of optional parameters	3.17	O	1

a) For national use only.

b) Some networks may only support up to 35 octets.

c) This parameter can be repeated in case of an alternate bearer service, in which case the initial parameter represents the initial establishment mode.

TABLE 17/Q.763

Message type: Release

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Cause indicators	3.10	V	3-?
Redirection information	3.29	O	3-4
Redirection number	3.30	O	5-12
Signalling point code ^{a)}	3.31	O	4
Access transport	3.2	O	3-?
User-to-user information ^{b)}	3.38	O	3-131
Automatic congestion level	3.3	O	3
End of optional parameters	3.17	O	1

a) For national use only.

b) Some networks may only support up to 35 octets.

TABLE 18/Q.763

Message type: Release complete

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Cause indicators	3.10	O	5-?
End of optional parameters	3.17	O	1

TABLE 19/Q.763

Message type: Subsequent address

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Subsequent number	3.32	V	3-10
End of optional parameters	3.17	O	1

TABLE 20/Q.763

Message type: User-to-user information

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
User-to-user information	3.38	V	2-130
Access transport	3.2	O	3-?
Call reference	3.6	O	7
End of optional parameters	3.17	O	1

TABLE 21/Q.763

**Message type: Delayed release (national use)
Forward transfer**

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Call reference	3.6	O	7
End of optional parameters	3.17	O	1

TABLE 22/Q.763

**Message type: Suspend
Resume**

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Suspend/Resume indicators	3.33	F	1
Call reference	3.6	O	7
End of optional parameters	3.17	O	1

TABLE 23/Q.763

Message type: **Blocking**
Blocking acknowledgement
Continuity check request
Loop back acknowledgement (national use)
Overload (national use)
Reset circuit
Unblocking
Unblocking acknowledgement
Unequipped circuit identification code (national use)

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1

TABLE 24/Q.763

Message type: **Call modification completed**
Call modification request
Call modification reject

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Call modification indicators	3.5	F	1
Call reference	3.6	O	7
User-to-user information	3.38	O	3-131 ^{a)}
End of optional parameters	3.17	O	1

^{a)} Some networks may only support up to 35 octets.

TABLE 25/Q.763

Message type: **Circuit group blocking**
Circuit group blocking acknowledgement
Circuit group unblocking
Circuit group unblocking acknowledgement

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Circuit group supervision message type indicator	3.11	F	1
Range and status	3.27	V	3-34

TABLE 26/Q.763

Message type: **Circuit group reset**
 Circuit group query

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Range and status ^{a)}	3.27	V	2

^{a)} The status subfield is not present.

TABLE 27/Q.763

Message type: **Facility accepted**
 Facility request^{a)}

Parameter	Reference (§)	Type	Length (octets)
Message type	2.1	F	1
Facility indicator	3.19	F	1
User-to-user indicators	3.37	O	3
Call reference	3.6	O	7
End of optional parameters	3.17	O	1

^{a)} Whether or not the facility request message should contain a connection request parameter requires further study.

TABLE 28/Q.763

Message type: **Pass-along**

Parameter	Reference (§)	Type	Length (octets)
Message type (00101000)	2.1	F	1
Message type Mandatory fixed part Mandatory variable part Optional part	Any message in Tables 5/Q.764 to 27/Q.764 which is relevant only at the “endpoint” of a connection as defined in § 3 of Recommendation Q.764		

ANNEX A

(to Recommendation Q.763)

Interpretation of spare codes

This Annex describes interpretations which can be applied when a recognized parameter is received containing codes currently indicated as being spare in Recommendation Q.763. This situation can occur when an implementation in accordance to this Recommendation interworks with a future version of this Recommendation. The default interpretations for some of these cases are listed in Table A-1/Q.763.

For the remaining cases, listed in Table A-2/Q.763, there is no default which is considered appropriate. It is recommended that the entire parameter in these cases should be considered uninterpretable except as noted.

Actions taken after applying the default interpretation of unrecognized fields or after determining that an entire parameter should be considered uninterpretable are described in § 2.10.5.3 of Recommendation Q.764. Application of default interpretations is of particular interest when an unrecognized parameter value is passed on at an intermediate exchange or is used at a connection endpoint. However, other applications are not precluded.

TABLE A-1/Q.763

Fields and their default interpretations

Field name with unrecognized code	Default interpretation
Charge indicator	Charge
Called party's status indicator	No indication
Called party's category indicator	No indication
Calling party category	Handle as an ordinary call
Address presentation restricted indicator	Presentation restricted
Cause indicator-location	(see note)
Cause value (unextended)	Unspecified: within class xxx
Cause value (extended)	Unspecified: interworking class
Calling party number response indicator	Calling party number included
Connected number response indicator	Connected number included
Redirecting number response indicator	Redirecting number included
Satellite indicator	Two satellites
Continuity check indicator	Continuity check not required
Redirecting reason indicator	Unknown/unavailable
Redirection counter	Maximum redirections
Original redirection reason indicator	Unknown/unavailable
Redirecting indicator	Call forwarded, all redirection information presentation restricted
Closed user group indicator	Non-CUG call
User-to-user (service 1)	No information
User-to-user (service 2)	No information
User-to-user (service 3)	No information

Note – If a network receives an unrecognized location field from other networks, the default interpretation of this field will be the location of the network which sends the unrecognized location, otherwise the default interpretation is “beyond an interworking point”.

TABLE A-2/Q.763

Fields with no default interpretations

Uninterpretable field
Nature of address
Numbering plan
Address signal
Cause indicator-coding standard ^{a)}
Cause indicator-recommendation ^{a)}
Diagnostic
User service information (any field)
Transmission medium requirement
Call modification indicator
Event indicator
Facility indicator
Circuit state indicator
Automatic congestion level
Circuit group supervision message type

^{a)} Cause value interpreted as if coded “unspecified: interworking class” (111111) and the location field interpreted as if coded “Beyond Interworking Point” (1010).

ITU-T RECOMMENDATIONS SERIES

Series A	Organization of the work of the ITU-T
Series B	Means of expression: definitions, symbols, classification
Series C	General telecommunication statistics
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
Series M	TMN and network maintenance: international transmission systems, telephone circuits, telegraphy, facsimile and leased circuits
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks and open system communications
Series Y	Global information infrastructure and Internet protocol aspects
Series Z	Languages and general software aspects for telecommunication systems