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SPECIFICATIONS OF SIGNALLING SYSTEM No. 7

FORMATS AND CODES OF THE ISDN USER PART OF SIGNALLING SYSTEM No. 7

ITU-T Recommendation Q.763

(Previously “CCITT Recommendation”)

FOREWORD

The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the International Telecommunication Union. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, established the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

ITU-T Recommendation Q.763 was revised prepared by the ITU-T Study Group XI (1988-1993) and was approved by the WTSC (Helsinki, March 1-12, 1993).

NOTES

1 As a consequence of a reform process within the International Telecommunication Union (ITU), the CCITT ceased to exist as of 28 February 1993. In its place, the ITU Telecommunication Standardization Sector (ITU-T) was created as of 1 March 1993. Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.

In order not to delay publication of this Recommendation, no change has been made in the text to references containing the acronyms "CCITT, CCIR or IFRB" or their associated entities such as Plenary Assembly, Secretariat, etc. Future editions of this Recommendation will contain the proper terminology related to the new ITU structure.

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

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FORMATS AND CODES[1] OF THE ISDN USER PART OF SIGNALLING SYSTEM No. 7

(Malaga-Torremolinos, 1984; modified at Helsinki, 1993)

1 General

ISDN User Part messages are carried on the signalling link by means of signal units, the format of which is described in 2.2/Q.703.

The format of and the codes used in the service information octet are described in 14.2/Q.704. 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):

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 subclauses.

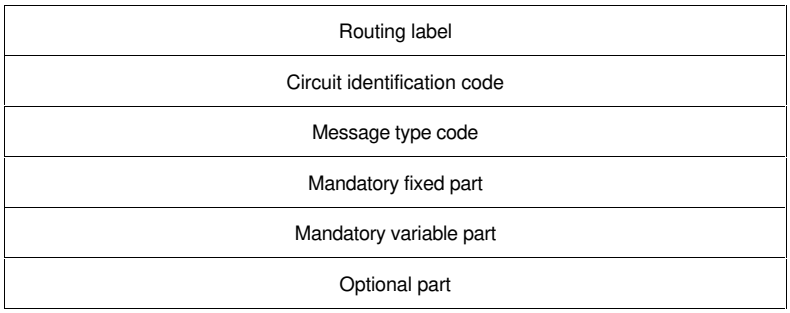

FIGURE 1/Q.763

ISDN User Part message parts

1.1 Routing label

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

NOTE – The SLS bits are set to the four least significant bits of the CIC.

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[1] The symbol @ in this Recommendation means for national use only.

1.2 Circuit identification code

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

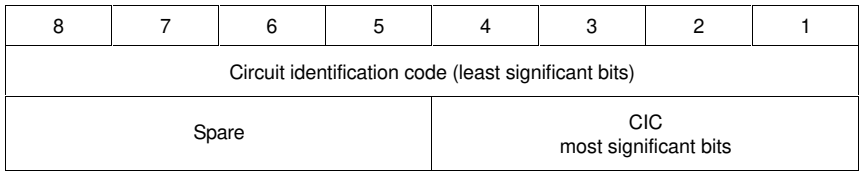


FIGURE 2/Q.763

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 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 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.

d) For multiple 64 kbit/s connection type call the CIC used in call connection messages shall be that of the lowest numbered CIC of the multiple 64 kbit/s circuits used. Where the circuits used are derived from a 2048 kbit/s digital path they shall be fixed groups of contiguous time slots (excluding time slot 0 and 16), in accordance with Table 3.

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 subclause of this Recommendation is summarized in Table 4.

TABLE 1/Q.763

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

TABLE 2/Q.763

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

TABLE 3/Q.763

<table>
<tr><td rowspan="2">Time slot</td><td colspan="4">Multirate connection type</td></tr>
<tr><td>2 × 64 kbit/s</td><td>384 kbit/s</td><td>1536 kbit/s</td><td>1920 kbit/s</td></tr>
<tr><td colspan="5"></td></tr>
<tr><td>1</td><td rowspan="2">Call 1</td><td rowspan="4">Call 1</td><td rowspan="15">Call 1</td><td rowspan="15">Call 1</td></tr>
<tr><td>2</td></tr>
<tr><td>3</td><td rowspan="2">Call 2</td></tr>
<tr><td>4</td></tr>
<tr><td>5</td><td rowspan="2">Call 3</td></tr>
<tr><td>6</td></tr>
<tr><td>7</td><td rowspan="2">Call 4</td><td rowspan="6">Call 2</td></tr>
<tr><td>8</td></tr>
<tr><td>9</td><td rowspan="2">Call 5</td></tr>
<tr><td>10</td></tr>
<tr><td>11</td><td rowspan="2">Call 6</td></tr>
<tr><td>12</td></tr>
<tr><td>13</td><td rowspan="2">Call 7</td><td rowspan="3">Call 3</td></tr>
<tr><td>14</td></tr>
<tr><td>15</td><td>Call 8</td></tr>
<tr><td>16</td><td colspan="4">Unallocated (for Q.33 use)</td></tr>
<tr><td>17</td><td>Call 8</td><td rowspan="3">Call 3</td><td rowspan="12">Call 1</td><td rowspan="15">Call 1</td></tr>
<tr><td>18</td><td rowspan="2">Call 9</td></tr>
<tr><td>19</td></tr>
<tr><td>20</td><td rowspan="2">Call 10</td><td rowspan="6">Call 4</td></tr>
<tr><td>21</td></tr>
<tr><td>22</td><td rowspan="2">Call 11</td></tr>
<tr><td>23</td></tr>
<tr><td>24</td><td rowspan="2">Call 12</td></tr>
<tr><td>25</td></tr>
<tr><td>26</td><td rowspan="2">Call 13</td><td rowspan="6">Call 5</td><td rowspan="6">Not allocated to 1536 kbit/s calls</td></tr>
<tr><td>27</td></tr>
<tr><td>28</td><td rowspan="2">Call 14</td></tr>
<tr><td>29</td></tr>
<tr><td>30</td><td rowspan="2">Call 15</td></tr>
<tr><td>31</td></tr>
</table>

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 5). 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.

Between parameters there should be no unused (i.e. dummy) octets.

A general format diagram is shown in Figure 3.

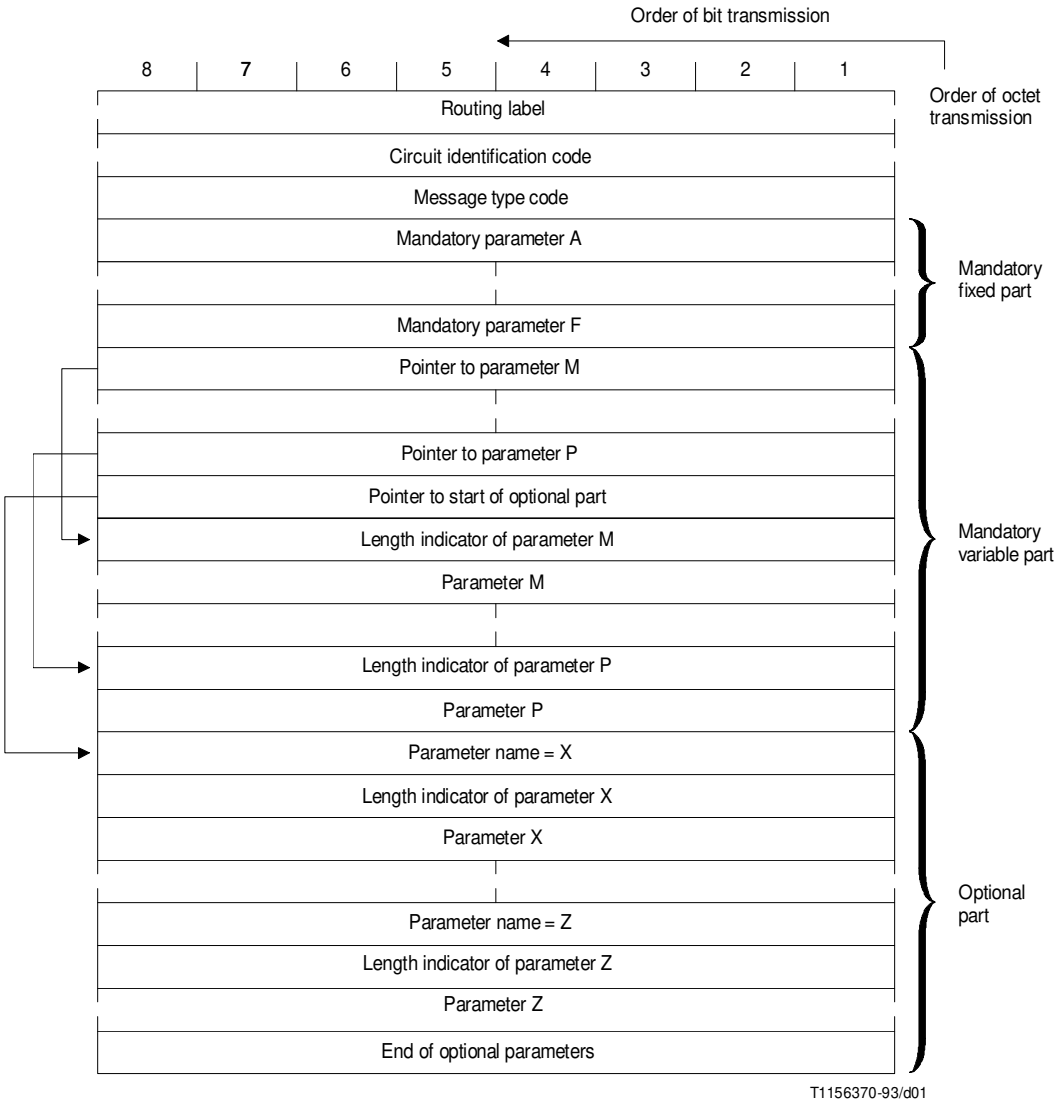


FIGURE 3/Q.763

General format overview

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 (reflected by the presence of an "end of optional parameter" octet in Tables 4 through 42), but there is no optional part included in this particular message, then 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. If there are no mandatory variable parameters, but optional parameters are possible, the start of optional parameters pointer (coded all "0"s if no optional parameter is present and coded "00000001" if any optional parameter is present) will be included.

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. Unless it is explicitly stated to the contrary within the ISUP 1992 Recommendations, an optional parameter cannot occur multiple times within one message. 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. If no optional parameter is present an "end of optional parameter" octet is not 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).

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.

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 4.

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.

TABLE 4/Q.763

Message type	Reference (Table)	Code
Address complete	21	00000110
Answer	22	00001001
Blocking	39	00010011
Blocking acknowledgement	39	00010101
Call progress	23	00101100
Circuit group blocking	40	00011000
Circuit group blocking acknowledgement	40	00011010
Circuit group query @	41	00101010
Circuit group query response @	24	00101011
Circuit group reset	41	00010111
Circuit group reset acknowledgement	25	00101001
Circuit group unblocking	40	00011001
Circuit group unblocking acknowledgement	40	00011011
Charge information @	(Note)	00110001
Confusion	26	00101111
Connect	27	00000111
Continuity	28	00000101
Continuity check request	39	00010001
Facility @	45	00110011
Facility accepted	42	00100000
Facility reject	29	00100001
Facility request	42	00011111
Forward transfer	37	00001000
Identification request	47	00110110
Identification response	48	00110111
Information @	30	00000100
Information request @	31	00000011
Initial address	32	00000001
Loop back acknowledgement @	39	00100100
Network resource management	46	0011 0010
Overload @	39	00110000
Pass-along @	43	00101000
Release	33	00001100
Release complete	34	00010000
Reset circuit	39	00010010
Resume	38	00001110
Segmentation	49	00111000
Subsequent address	35	00000010
Suspend	38	00001101
Unblocking	39	00010100
Unblocking acknowledgement	39	00010110
Unequipped CIC @	39	00101110
User Part available	44	00110101
User Part test	44	00110100
User-to-user information	36	00101101
Reserved (used in 1984 version)		00001010 00001011 00001111 00100010 00100011 00100101 00100110
Reserved (used in 1988 version)		00011101 00011100 00011110 00100111
NOTE – The format of this message is a national matter.		

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 5 together with references to the subclauses in which they are described.

TABLE 5/Q.763

Parameter name	Reference (subclause)	Code
Access delivery information	3.2	00101110
Access transport	3.3	00000011
Automatic congestion level	3.4	00100111
Backward call indicators	3.5	00010001
Call diversion information	3.6	00110110
Call history information	3.7	00101101
Call reference @	3.8	00000001
Called party number	3.9	00000100
Calling party number	3.10	00001010
Calling party's category	3.11	00001001
Circuit state indicator @	3.14	00100110
Cause indicators	3.12	00010010
Circuit group supervision message type indicator	3.13	00010101
Closed user group interlock code	3.15	00011010
Connected number	3.16	00100001
Connection request	3.17	00001101
Continuity indicators	3.18	00010000
Echo control information	3.19	00110111
End of optional parameters	3.20	00000000
Event information	3.21	00100100
Facility indicator	3.22	00011000
Forward call indicators	3.23	00000111
Freephone indicators (reserved)	(Note)	01000001
Generic digits @	3.24	11000001
Generic notification	3.25	00101100
Generic number	3.26	11000000
Generic reference (reserved)	3.27	01000010
Hop counter (reserved)	(Note)	00111101
Information indicators @	3.28	00001111
Information request indicators	3.29	00001110
Location number	3.30	00111111
MCID request indicator	3.31	00111011
MCID response indicator	3.32	00111100
Message compatibility information	3.33	00111000
MLPP precedence	3.34	00111010
Nature of connection indicators	3.35	00000110
Network specific facilities @	3.36	00101111
Optional backward call indicators	3.37	00101001
Optional forward call indicators	3.38	00001000
Original called number	3.39	00101000
Origination ISC point code	3.40	00101011
Parameter compatibility information	3.41	00111001
Propagation delay counter	3.42	00110001
Range and status	3.43	00010110
Redirecting number	3.44	00001011
Redirection information	3.45	00010011
Redirection number	3.46	00001100
Redirection number restriction	3.47	01000000
Remote operations @	3.48	00110010
Service activation @	3.49	00110011
Signalling point code @	3.50	00011110
Subsequent number	3.51	00000101
Suspend/Resume indicators	3.52	00100010
Transit network selection @	3.53	00100011
Transmission medium requirement	3.54	00000010
Transmission medium requirement prime	3.55	00111110

TABLE 5/Q.763 (*cont.*)

Parameter name	Refence (subclause)	Code
Transmission medium used User service information User service information prime User teleservice information User-to-user indicators User-to-user information	3.56 3.57 3.58 3.59 3.60 3.61	00110101 00011101 00110000 00110100 00101010 00100000
Reserved (used in 1984 version, *Red Book*) Reserved for multi-slot identifier		00010100 00011001 00011011 00011100 00011111 00100101
Reserved (used in 1988 version, *Blue Book*)		00010111
NOTE – The format is not provided for the time being.		

3.2 Access delivery information (open)

The format of the access delivery information parameter field is shown in Figure 4.

	8	7	6	5	4	3	2	1
1	H	G	F	E	D	C	B	A

FIGURE 4/Q.763

Acces delivery information parameter field

bit A Access delivery indicator
1 No set-up message generated
0 Set-up message generated

bits H-B not used

NOTE – Not used bits in the access delivery information parameter field can be used in the future for additional information concerning access delivery aspects.

3.3 Access transport

The format of the access transport parameter field is shown in Figure 5.

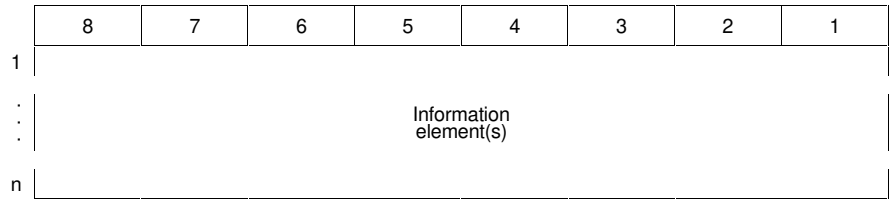


FIGURE 5/Q.763

Access transport parameter field

The information element is coded as described in 4.5/Q.931. 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. The maximum length of the access transport parameter should only be limited by the message length as the content of the ATP will probably evolve in the future.

3.4 Automatic congestion level

The format of the automatic congestion level parameter field is shown in Figure 6.

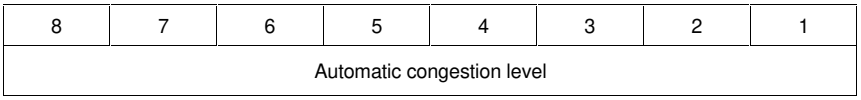


FIGURE 6/Q.763

Automatic congestion level parameter field

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 11111111	Spare

3.5 Backward call indicators

The format of the backward call indicators parameter field is shown in Figure 7.

	8	7	6	5	4	3	2	1
1	H	G	F	E	D	C	B	A
2	P	O	N	M	L	K	J	I

FIGURE 7/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

NOTE 1 – The interpretation of these bits depends only on the charging exchange.

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 2)
- 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 2)
- 0 no interworking encountered
- 1 interworking encountered

bit J: End-to-end information indicator (Note 2) @
- 0 no end-to-end information available
- 1 end-to-end information available

bit K: ISDN User Part indicator (Note 2)
- 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 (Note 2)
0 0 no indication
0 1 connectionless method available @
1 0 connection oriented method available
1 1 connectionless and connection oriented methods available @

NOTE 2 – Bits G-K and O-P constitute the protocol control indicator.

3.6 Call diversion information

The format of the call diversion information parameter field is shown in Figure 8.

	8	7	6	5	4	3	2	1
1	H	G	F	E	D	C	B	A

FIGURE 8/Q.763

Call diversion information parameter field

The following codes are used in the call diversion information parameter field:

a) *Notification subscription options*

bits CBA:
000 Unknown
001 presentation not allowed
010 presentation allowed with redirection number
011 presentation allowed without redirection number
100 to 111 spare

b) *Redirection reason*

bits GFED:
0000 Unknown
0001 User busy
0010 no reply
0011 unconditional
0100 deflection during alerting
0101 deflection immediate response
0110 mobile subscriber not reachable
0111 to 1111 spare

bit H: Spare

3.7 Call history information

The format of the call history information parameter field is shown in Figure 42.

The call history information parameter expresses in pure binary representation the propagation delay value of a call in ms.

3.8 Call reference @

The format of the call reference parameter is shown in Figure 9.

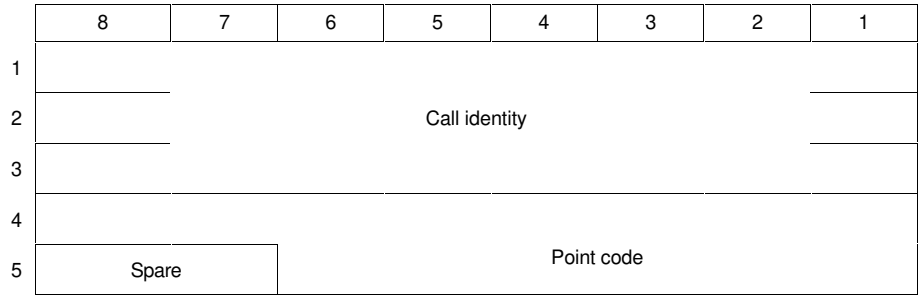


FIGURE 9/Q.763

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.

3.9 Called party number

The format of the called party number parameter field is shown in Figure 10.

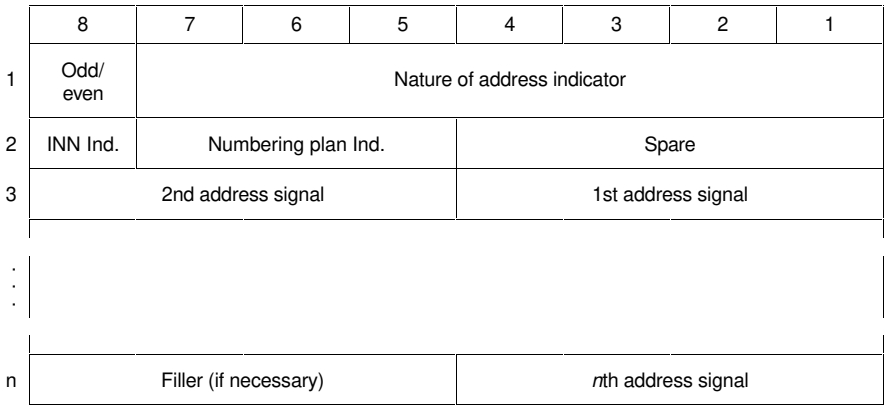


FIGURE 10/Q.763

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	unknown @
0000011	national (significant) number
0000100	international number
0000101 to 1101111	spare
1110000 to 1111110	reserved for national use
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)
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 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
1011	code 11
1100	code 12
1101	spare
1110	spare
1111	ST

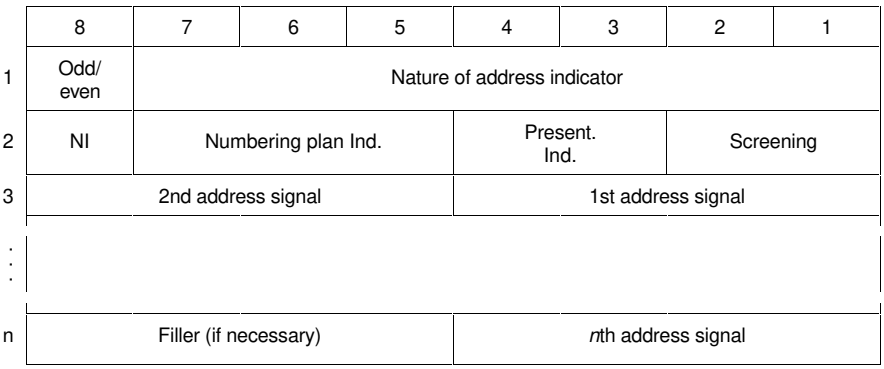
The most significant address signal is sent first. Subsequent address signals are sent in successive 4-bit fields.

f) *Filler*

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

3.10 Calling party number

The format of the calling party number parameter field is shown in Figure 11.



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

FIGURE 11/Q.763

Calling party number parameter field

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

a) *Odd/even indicator*

See 3.9 a)

b) *Nature of address indicator*

0000000 spare
0000001 subscriber number
0000010 unknown @
0000011 national (significant) number @
0000100 international number
0000101 to 1101111 spare
1110000 to 1111110 reserved for national use
1111111 spare

NOTE 1 – 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 3.9 d)

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

00 presentation allowed
01 presentation restricted
10 address not available (Note 2) @
11 spare

NOTE 2 – When the address is unavailable, the subfields in items a), b), c) and d) are coded with 0's.

f) *Screening indicator*

00 reserved (Note 3)
01 user provided, verified and passed
10 reserved (Note 3)
11 network provided

NOTE 3 – Code 00 and 10 are reserved for "user provided, not verified" and "user provided, verified and failed" respectively. Codes 00 and 10 are for national use.

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 to 1111	spare

h) *Filler*

See 3.9 f).

3.11 Calling party's category

The format of the calling party's category parameter field is shown in Figure 12.

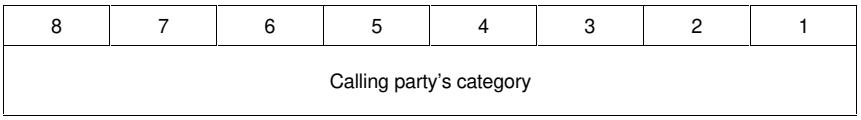


FIGURE 12/Q.763

Calling party's category parameter field

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

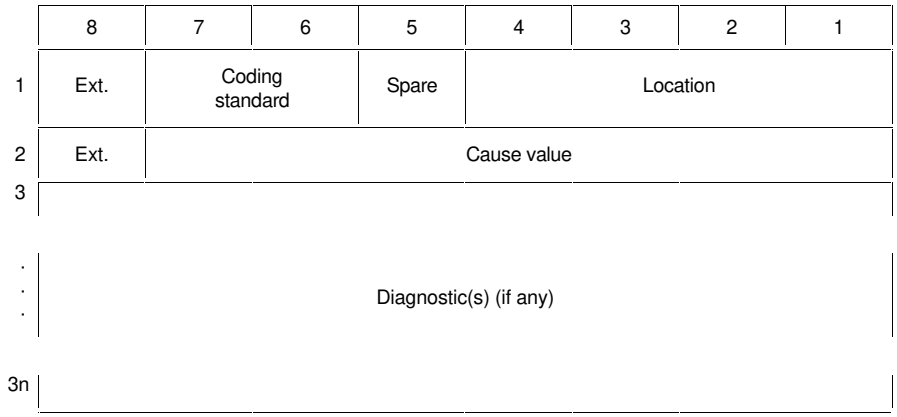
00000000	calling party's category unknown at this time @
00000001	operator, language French
00000010	operator, language English
00000011	operator, language German
00000100	operator, language Russian
00000101	operator, language Spanish

00000110 00000111 00001000	available to Administrations for selecting a particular language 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 11011111	spare
11100000 a 11111110	reserved for national use
11111111	spare

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

3.12 Cause indicators

The format of the cause indicators parameter field is shown in Figure 13.



NOTE – Octet 3 to 3n may be omitted or repeated, 3′ to 3′n.

FIGURE 13/Q.763

Cause indicators parameter field

The codes to be used in the subfields of the cause indicators parameter fields are defined in the Q.6XX-Series Recommendations.

3.13 Circuit group supervision message type indicator

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

8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A

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

3.14 Circuit state indicator @

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

8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A
H	G	F	E	D	C	B	A

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 = 00*

bits B A: Maintenance blocking state
0 0 transient
0 1 spare
1 0 spare
1 1 unequipped

b) *for bits D C not equal to 00*

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 H-G: Spare

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

3.15 Closed user group interlock code

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

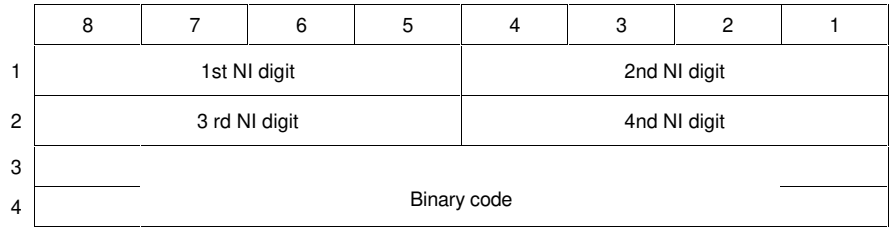


FIGURE 16/Q.763

Closed user group interlock code parameter field

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 ROA or network identification, if necessary. If octet 2 is not required, it is coded all zeros.

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.

3.16 Connected number

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

	8	7	6	5	4	3	2	1
1	Odd/ even	Nature of address indicator						
2	Spare	Numbering plan Ind.			Present. Restric.		Screening indicator	
3	2nd address signal				1st address signal			
. . .								
n	Filler (if necessary)				*n*th address signal			

NOTE – When the address presentation restricted indicator indicates address not available, octets 3 to n are omitted, and the screening indicator is set to 11 network provided.

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 3.9 a)

b) Nature of address indicator: see 3.9 b)

c) Numbering plan indicator: see 3.9 d)

d) Address presentation restricted indicator:

00 presentation allowed
01 presentation restricted
10 address not available
11 spare

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

e) Screening indicator: see 3.10 f)

f) Address signal: see 3.10 g)

g) Filler: see 3.9 f).

3.17 Connection request (open)

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

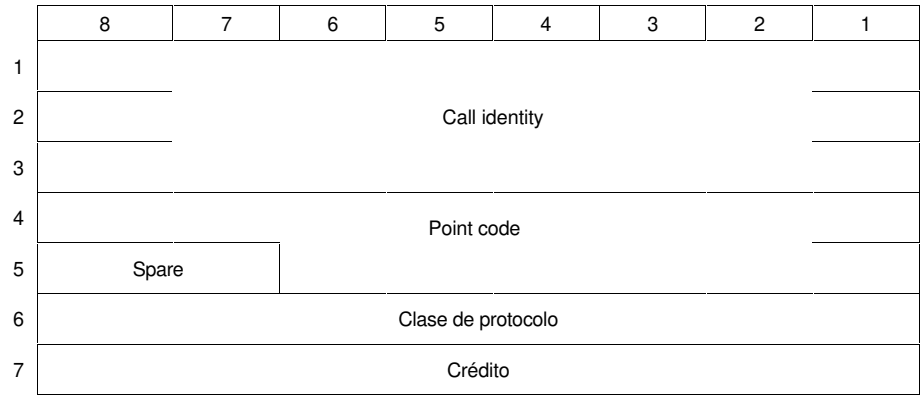
The following codes are used in the subfields of the connection request parameter field:

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.



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

FIGURE 18/Q.763

Connection request parameter field

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.

3.18 Continuity indicators

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

8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A

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 H-B: Spare

3.19 Echo control information

The format of the echo control information parameter field is shown in Figure 20.

8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A

FIGURE 20/Q.763

Echo control information parameter field

a) *Outgoing half echo control device response indicator*

bits BA 00 No information
01 Outgoing half echo control device not included
10 Outgoing half echo control device included
11 Spare

b) *Incoming half echo control device response indicator*

bits DC 00 No information
01 Incoming half echo control device not included
10 Incoming half echo control device included
11 Spare

c) *Outgoing half echo control device request indicator*

bits FE 00 No information
01 Outgoing half echo control device activation request
10 Outgoing half echo control device deactivation request
11 Spare

d) *Incoming half echo control device request indicator*

bits HG 00 No information
01 Incoming half echo control device activation request
10 Incoming half echo control device deactivation request
11 Spare

3.20 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.

3.21 Event information

The format of the event information parameter field is shown in Figure 21.

8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A

FIGURE 21/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 or an appropriate pattern is now available
0000100	call forwarded on busy
0000101	call forwarded on no reply
0000110	call forwarded unconditional
0000111 to 1111111	spare

bit H: Event presentation restricted indicator @
0 no indication
1 presentation restricted

3.22 Facility indicator

The format of the facility indicator parameter field is shown in Figure 22.

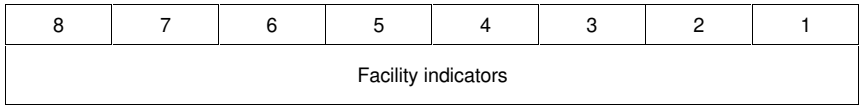


FIGURE 22/Q.763

Facility indicator parameter field

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

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

3.23 Forward call indicators

The format of the forward call indicators parameter field is shown in Figure 23.

	8	7	6	5	4	3	2	1
1	H	G	F	E	D	C	B	A
2	P	O	N	M	L	K	J	I

FIGURE 23/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 P-M: Reserved for national use

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

3.24 Generic digits @

The format of the generic digits parameter field is shown in Figure 24.

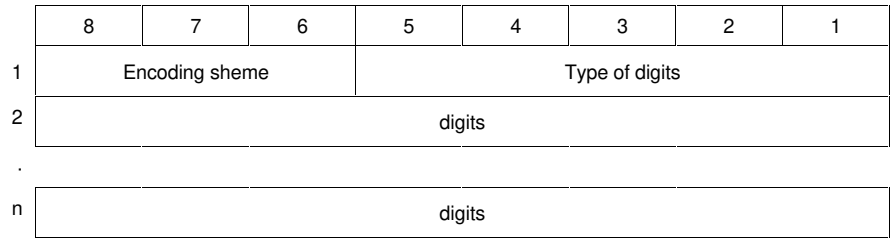


FIGURE 24/Q.763

Generic digits parameter

The following codes are used in the subfields of the generic digits parameter:

a) *Encoding scheme*

000	BCD even: (even number of digits)
001	BCD odd: (odd number of digits)
010	IA5 character
011	binary coded
110 to 111	spare

b) *Type of digits*

00000	reserved for account code
00001	reserved for authorisation code
00010	reserved for private networking travelling class mark
00011	reserved for business communication group identity
00100 to 01111	spare for international use
10000 to 11110	spare for national use
11111	reserved for extension

c) *Digit*

Coding in accordance to the coding scheme and type of digits.

3.25 Generic notification indicator

The format of the generic notification indicator parameter field is shown in Figure 25.

8	7	6	5	4	3	2	1
Ext.	Notification indicator						

FIGURE 25/Q.763

Generic notification indicator parameter field

The following codes are used in the generic notification indicator parameter field:

a) *Extension indicator*

0 information continues in the next octet
1 last octet

b) *Notification indicator*

0000000 user suspended
0000001 user resumed
0000010 bearer service change
0000011 discriminator for extension to ASN.1 encoded component

(used in DSS 1)

0000100 call completion delay

1000010 conference established
1000011 conference disconnected
1000100 other party added
1000101 isolated
1000110 reattached
1000111 other party isolated
1001000 other party reattached
1001001 other party split
1001010 other party disconnected
1001011 conference floating

1100000 call is a waiting call

1101000 diversion activated (used in DSS 1)
1101001 call transfer, alerting
1101010 call transfer, active

1111001 remote hold
1111010 remote retrieval
1111011 call is diverting

All other values are currently not used and are reserved for further extensions.

3.26 Generic number

The format of the generic number parameter field is shown in Figure 26.

8	7	6	5	4	3	2	1
Number qualifier indicator							
Odd/ even	Nature of address indicator						
NI Ind.	Numbering plan Ind.			Present. Ind.		Screening	
2nd address signal				1st address signal			
Filler (if necessary)				*n*th address signal			

FIGURE 26/Q.763

Generic number parameter field

The following codes are used in the generic number parameter field:

a) *Number qualifier indicator*

00000000 reserved (dialled digits) @
00000001 additional called number @
00000010 reserved (supplemental user provided calling number – failed network screening) @
00000011 reserved (supplemental user provided calling number – not screened) @
00000100 reserved (redirecting terminating number) @
00000101 additional connected number
00000110 additional calling party number
00000111 additional original called number
00001000 additional redirecting number
00001001 additional redirection number

00001010 to 01111111 reserved (called freephone numbers) (spare)

10000000 to 11111110 reserved for national use

11111111 reserved for expansion

b) *Odd/even indicator:* see 3.9 a)

c) *Nature of address indicator*

0000000 spare
0000001 subscriber number
0000010 unknown
0000011 national (significant) number
0000100 international number

0000101 to 1101111 spare

1110000 to 1111110 reserved for national use

1111111 spare

NOTE 1 – For each supplementary service the relevant codes and possible default settings are described in the service description (see the Q.73xy-Series Recommendations).

d) *Number incomplete indicator*

0 number complete
1 number incomplete

e) *Numbering plan indicator*

000 spare
001 ISDN (telephony) numbering plan (Recommendation E.164)
010 spare
011 data numbering plan (Recommendation X.121) @
100 telex numbering plan (Recommendation F.69) @
101 private numbering plan
110 reserved for national use
111 spare

NOTE 2 – For each supplementary service the relevant codes and possible default settings are described in the service description (see the Q.73xy-Series Recommendations).

f) *Address presentation restricted indicator*

00 presentation allowed
01 presentation restricted
10 address not available
11 spare

NOTE 3 – For each supplementary service the relevant codes and possible default settings are described in the service description (see the Q.73xy-Series Recommendations).

g) *Screening indicator*

Only used if the number qualifier indicator is coded 0000 0001 or 0000 0010 this indicator is coded as follows:

00 user provided, not verified
01 user provided, verified and passed
10 user provided, verified and failed
11 network provided

NOTE 4 – For each supplementary service the relevant codes and possible default settings are described in the service description (see the Q.73xy-Series Recommendations).

h) *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 to 1111 spare

i) *Filler*: 3.9 f)

3.27 Generic reference (reserved)

The format of the generic reference parameter field is shown in Figure 27.

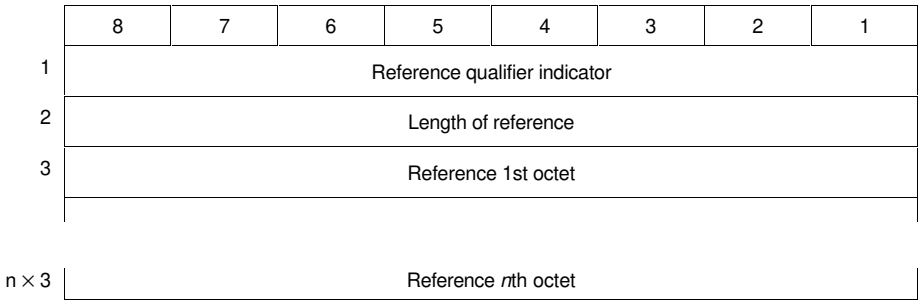


FIGURE 27/Q.763

Generic reference parameter field

a) *Reference qualifier indicator*

0000 0000	spare
0000 0001	CCBS context identifier (for further study)
0000 0010	reserved
0000 0011	reserved
0000 0100 to 11111111	spare

b) *Length of reference*

0000 0000	spare
0000 0001	length of 1 octet
0000 0010	length of 2 octets
0000 0011	length of 3 octets
0000 0100	length of 4 octets
0000 0101 to 11111111	spare

c) *Reference nth octet*

A code expressing in pure binary representation the reference number of the context given by the entity which handles and provides the service.

3.28 Information indicators @

The format of the information indicators parameter field is shown in Figure 28.

	8	7	6	5	4	3	2	1
1	H	G	F	E	D	C	B	A
2	P	O	N	M	L	K	J	I

FIGURE 28/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
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
0 charge information not included
1 charge information included

bit H: Solicited information indicator
0 solicited
1 unsolicited

bits L-I: Spare

bits P-M: Reserved

3.29 Information request indicators @

The format of the information request indicators parameter field is shown in Figure 29.

	8	7	6	5	4	3	2	1
1	H	G	F	E	D	C	B	A
2	P	O	N	M	L	K	J	I

FIGURE 29/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
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
0 charge information not requested
1 charge information requested

bits G-F: Spare

bit H: Malicious call identification request indicator
0 malicious call identification not requested
1 reserved for malicious call identification requested

bits L-I: Spare

bits P-M: Reserved

3.30 Location number

The format of the location number field is shown in Figure 30.

8	7	6	5	4	3	2	1
Odd/ even	Nature of address indicator						
INN/ NI Ind.	Numbering plan Ind.			Present. Ind.		Screening	
2nd address signal				1st address signal			
Filler (if necessary)				*n*th address signal			

FIGURE 30/Q.763

Location number parameter field

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

a) *Odd/even indicator*: see 3.9 a).

b) *Nature of address indicator*

0000000 spare
0000001 reserved for subscriber number @
0000010 reserved for unknown @
0000011 national (significant) number @
0000100 international number

0000101 to 1101111 spare

1110000 to 1111110 reserved for national use

1111111 spare

c) *Internal network number indicator (INN)*

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

NOTE 1 – Default set to 1.

d) *Numbering plan indicator*

000 spare
001 ISDN (telephony) numbering plan (Recommendation E.164)
010 spare
011 Data numbering plan (Recommendation X.121) @
100 Telex numbering plan (Recommendation F.69) @
101 private numbering plan
110 reserved for national use
111 spare

NOTE 2 – Default set to 001.

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

00 presentation allowed
01 presentation restricted
10 address not available (Note 3) @
11 spare

NOTE 3 – Default set to 01.

f) *Screening indicator*

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

NOTE 4 – Default set to 11.

g) *Address signals*: see 3.26 h)

h) *Filler*: see 3.9 f)

3.31 MCID request indicators

The format of the MCID request indicators parameter field is shown in Figure 31.

H	G	F	E	D	C	B	A
MCID request indicators							

FIGURE 31/Q.763

MCID request indicators parameter field

The following codes are used in the MCID request indicators parameter field:

bit A: MCID request indicator
0 MCID not requested
1 MCID requested

bit B: Holding indicator @
0 Holding not requested
1 Holding requested

bits H-C: Spare

3.32 MCID response indicators

The format of the MCID response indicators parameter field is shown in Figure 32.

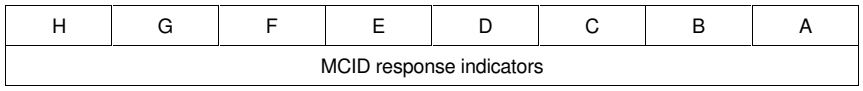


FIGURE 32/Q.763

MCID response indicators parameter field

The following codes are used in the MCID response indicators parameter field:

bit A: MCID response indicator
0 MCID not included
1 MCID included

bit B: Hold provided indicator @
0 Holding not provided
1 Holding provided

bits H-C: Spare

3.33 Message compatibility information

The format of the message compatibility information parameter field is shown in Figure 33.

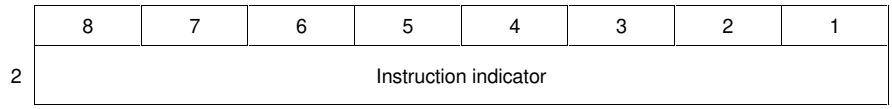


FIGURE 33/Q.763

Message compatibility information parameter field

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

a) *Instruction indicators*

The format of the instruction indicators subfield is shown in Figure 34.

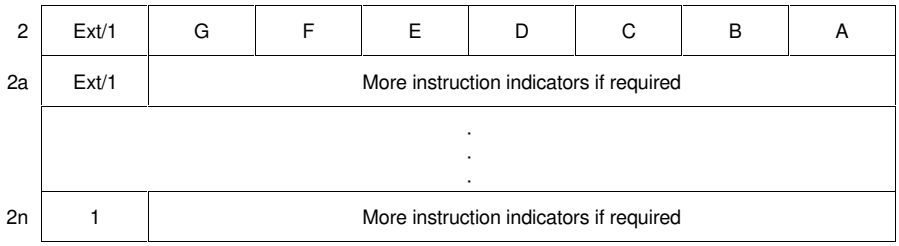


FIGURE 34/Q.763

Instruction indicators subfield

The following codes are used in the instructions indicators subfield:

bit A: Transit at intermediate exchange indicator
0 transit interpretation
1 end node interpretation

bit B: Release call indicator
0 do not release call
1 release call

bit C: Send notification indicator (Note 1)
0 do not send notification
1 send notification

NOTE 1 – Notification by confusion message.

bit D: Discard message indicator
0 do not discard message (pass on) (Note 2)
1 discard message

bits G-F: Spare

NOTE 2 – If pass on is set (bit D = 0) but not possible then bits C and E are checked.

bit E: Pass on not possible indicator
0 release call
1 discard information

b) *Extension indicator*

0 next octet exists
1 last octet

c) *More instruction indicators*

The bits will be defined when required.

3.34 MLPP precedence

The format of the MLPP precedence parameter field is shown in Figure 35.

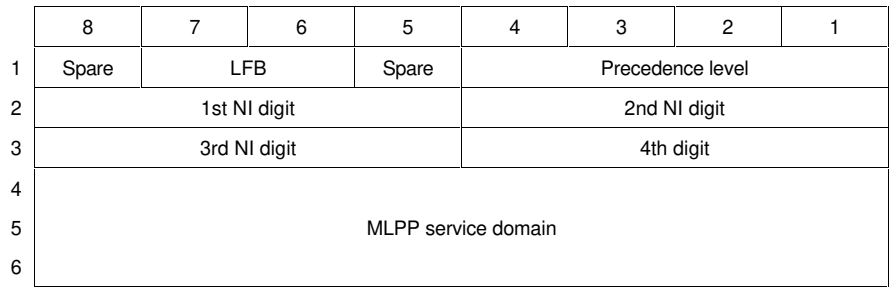


FIGURE 35/Q.763

MLPP precedence parameter field

The following codes are used in the subfields of the MLPP precedence parameter field:

a) *LFB*

00	LFB allowed
01	Path reserved @
10	LFB not allowed
11	spare

b) *Precedence level*

0000	flash override
0001	flash
0010	immediate
0011	priority
0100	routine
0101 to 1111	spare

c) *Network identity NI octet 2 and 3*

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

The first digit of this field is coded 0. 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 ROA or network identification, if necessary. If octet 2 is not required, it is coded all zeros.

d) *MLPP service domain (octets 4, 5 and 6)*

A code pure binary coded allocated to a MLPP service domain administered by a particular ISDN. Bit 8 of octet 4 is the most significant, and bit 1 of octet 6 is the least significant, respectively.

3.35 Nature of connection indicators

The format of the nature of connection indicators parameter field is shown in Figure 36.

8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A

FIGURE 36/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

3.36 Network specific facility @

The format of the network specific facility parameter field is shown in Figure 37.

	8	7	6	5	4	3	2	1
	Length of network identification							
1a	1 Ext	Type of network id.			Network identification plan			
1b . .	0 Spare	Network identification						
1m	0							
2 . n	Network specific facility							

FIGURE 37/Q.763

Network specific facility parameter field

The following codes are used in the subfield of the network specific facility parameter field:

a) *Length of network identification*

This field contains the length, in octets, of the network identification found in octets 1a, 1b-1m. If the value is 0000 0000 then octets 1a-1m are omitted.

b) *Type of network identification*

The following codes are used in the type of network identification subfield

Bits 7 6 5
- 0 1 0 national network identification
- 0 1 1 reserved for international network identification
- others spare

When the type of network identification is coded 010 “national network identification”, the network identification plan and network identification are coded nationally.

c) *Network identification plan*

d) *Network identification*

e) *Network-specific facility*

This field is encoded according to the rules specified by the identified network. The network may specify the same coding rule as stimulus type of information elements in Recommendation Q.932. In this case multiple information elements may be included in this field.

3.37 Optional backward call indicators

The format and codes of the optional backward call indicators field are shown in Figure 38.

8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A

FIGURE 38/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 diversion may occur indicator
- 0 no indication
- 1 call diversion may occur

bit C: Simple segmentation indicator
- 0 no additional information will be sent
- 1 additional information will be sent in a segmentation message

bit D: MLPP user indicator
- 0 no indication
- 1 MLPP user

bits E-H: Reserved for national use

3.38 Optional forward call indicators

The format of the optional forward call indicators parameter field is shown in Figure 39.

8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A

FIGURE 39/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: Simple segmentation indicator
- 0 no additional information will be sent
- 1 additional information will be sent in a segmentation message

bits D-G: Spare

bit H: Connected line identity request indicator
- 0 not requested
- 1 requested

3.39 Original called number

The format of the original called number parameter field corresponds to the format shown in Figure 40.

	8	7	6	5	4	3	2	1
1	Odd/ even	Nature of address indicator						
2	Spare	Numbering plan Ind.			Present. Ind.		Spare	
3	2nd address signal				1st address signal			
. . .								
n	Filler (if necessary)				*n*th address signal			

FIGURE 40/Q.763

Original called number parameter field

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

a) *Odd/even indicator*: see 3.9 a)

b) *Nature of address indicator*: see 3.9 b)

c) *Numbering plan indicator*: see 3.9 d)

d) *Address presentation restricted indicator*: see 3.10 e)

e) *Address signal*: see 3.10 g)

f) *Filler*: see 3.9 f).

3.40 Origination ISC point code

The format of the origination ISC point code parameter field is shown in Figure 50.

3.41 Parameter compatibility information

The format of the parameter compatibility information parameter field is shown in Figure 41.

	8	7	6	5	4	3	2	1
1	1st upgraded parameter							
2	Instruction indicators							
	. . .							
n	*n*th upgraded parameter							
n+1	Instruction indicators							

FIGURE 41/Q.763

Parameter compatibility information parameter field

The following codes are used in the subfields of the parameter compatibility information parameter field.

a) *Nth upgraded parameter name*

This field contains the parameter name of the nth upgraded parameter in accordance with Table 5.

b) *Instruction indicators*

The format of the instruction indicators subfield is shown in Figure 34.

The following codes are used in the instructions indicators subfield:

bit A: Transit at intermediate exchange indicator
0 transit interpretation
1 end node interpretation

bit B: Release call indicator
0 do not release call
1 release call

bit C: Send notification indicator (Note 1)
0 do not send notification
1 send notification

NOTE 1 – Notification by confusion or a release complete message.

bit D: Discard message indicator
0 do not discard message (pass on) (Note 2)
1 discard message

NOTE 2 – If pass on is set (bit D = 0) but not possible then bits C, F and G are checked.

bit E: Discard parameter indicator
0 do not discard parameter (pass on) (Note 3)
1 discard parameter

NOTE 3 – If pass on is set (bit E = 0) but not possible then bits C, F and G are checked.

bits G-F: Spare

c) *Extension indicator*

0 next octet exists
1 last octet

d) *More instruction indicators*

The bits will be defined when required.

3.42 Propagation delay counter

The format of the propagation delay counter parameter field is shown in Figure 42.

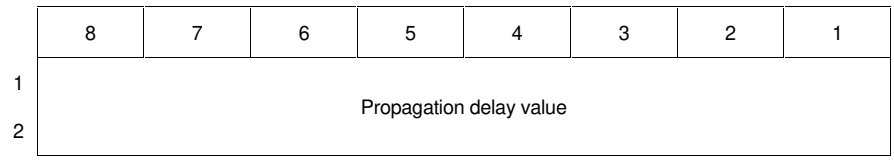


FIGURE 42/Q.763

Propagation delay counter parameter field

The propagation delay counter parameter expresses in pure binary representation the propagation delay value of a call in ms to be accumulated during call set-up.

3.43 Range and status

The format of the range and status parameter field is shown in Figure 43.

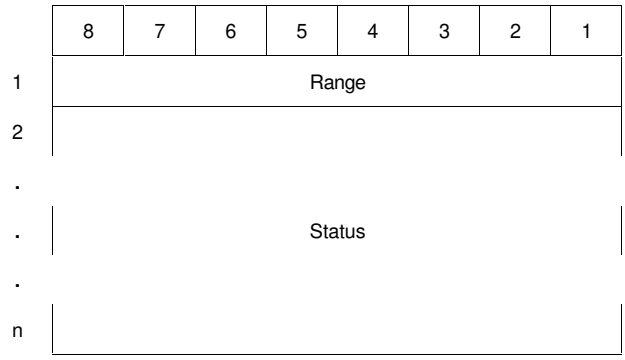


FIGURE 43/Q.763

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 1 to 255. The number represented by the range code +1 indicates the range of circuits affected by the message.

b) *Status*

The status subfield contains from 2 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 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.

3.44 Redirecting number

The format of the redirecting number parameter field corresponds to the format shown in Figure 40.

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

a) Odd/even indicator: see 3.9 a)

b) Nature of address indicator: see 3.9 b)

c) Numbering plan indicator: see 3.9 d)

d) Address presentation restricted indicator: see 3.10 e)

e) Address signal: see 3.10 g)

f) Filler: see 3.9 f).

3.45 Redirection information

The format of the redirection information parameter field is shown in Figure 44.

	8	7	6	5	4	3	2	1
1	H	G	F	E	D	C	B	A
2	P	O	N	M	L	K	J	I

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

FIGURE 44/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 diversion
	1	0	0	call diversion, all redirection information presentation restricted
	1	0	1	call rerouted, redirection number presentation restricted @
	1	1	0	call diversion, 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
		a			
	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	deflection during alerting
	0	1	0	1	deflection immediate response
	0	1	1	0	mobile subscriber not reachable
	0	1	1	1	spare
		a			
	1	1	1	1	

3.46 Redirection number

The format of the redirection number parameter field corresponds to the format shown in Figure 10.

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

a) Odd/even indicator: see 3.9 a)

b) Nature of address indicator: see 3.9 b)

c) Internal network number indicator: see 3.9 c)

d) Numbering plan indicator: see 3.9 d)

e) Address signal: see 3.10 g)

f) Filler: see 3.9 f).

3.47 Redirection number restriction parameter

The format of the redirection number presentation parameter field is shown in Figure 45.

	8	7	6	5	4	3	2	1
1	H	G	F	E	D	C	B	A

FIGURE 45/Q.763

Redirection number restriction parameter field

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

bits B A: Presentation restricted indicator
0 0 Presentation allowed
0 1 Presentation restricted
1 0 spare
1 1 spare

bits H-C: Spare

3.48 Remote operations @

The format of the remote operations parameter field is shown in Figure 46. The format and coding of the elements in the components are described in this subclause.

8	7	6	5	4	3	2	1
Ext.	Spare		Protocol profile				
Component(s)							

NOTE – The component may be repeated any number of times within the remote operations parameter. In case of multiple service requests, the receiving entity shall treat the repetition of Invoke components identical to the case where multiple Remote Operations parameters are received in a single message.

FIGURE 46/Q.763

Remote operations parameter field

The following codes are used in the Remote Operations parameter field:

a) *Extension indicator (ext)*:

0 octet continues through the next octet
1 last octet

b) *Protocol profile field*

00000 to 10000 } spare

10001 Remote operations protocol

10010 to 11111 } spare

c) *Components*

This item provides the format and encoding of Component(s). The description is divided in two parts.

Sub-item i) uses the description method of other Q.700-Series Recommendations. The content is based on the encoding rules provided in Recommendation X.209 and is consistent with that Recommendation.

Sub-item ii) uses Recommendation X.209 formal description language (ASN.1).

The general component structure and encoding rules are described in Annex B.

i) *Specification of components in table form*

1) *Component type*

The Components are based on the Remote Operations Service Element (ROSE) of Recommendation X.229. The four component types defined for the Remote Operation parameter are as follows:

– Invoke,

– Return Result,

– Return Error,

– Reject.

2) *Component type tag*

Each Component is a sequence of information elements. The Component types have the structure indicated in the Tables 6 to 9.

The information element for the various components shown in Tables 6 to 9 are all mandatory except the Linked ID and the parameters.

The Parameter Tag shall be any valid ASN.1 tag, depending on the type of the parameter supplied. It can indicate either a primitive or a constructor element and refer to any of the defined tag classes.

When the parameter element is a collection of several information elements, the associated data type shall be derived from the Sequence, SequenceOf, Set or SetOf types.

Subclause 3.48 item c) i) 6) and Table 14 define the Sequence and Set tags.

TABLE 6/Q.763

Invoke component

Invoke component	Mandatory indication
Component Type Tag Component Length (Note 1)	Mandatory
Invoke ID Tag Invoke ID length Invoke ID	Mandatory
Linked ID Tag Linked ID Linked ID	Optional
Operation Code Tag Operation Code length Operation Code	Mandatory
Parameters (Notes 2 and 3)	Optional

NOTES

1 The component length is coded to indicate the number of octets contained in the component (excluding the component type tag and the component length octets).

2 The coding is supplementary service specific and the subject of other Recommendations.

3 It is a parameter within ROSE, but in the ISUP it is a subfield within a field.

TABLE 7/Q.763

Return Result Component

Return Result Component	Mandatory indication
Component Type Tag Component length (Note 1)	Mandatory
Invoke ID Tag Invoke ID length Invoke ID	Mandatory
Sequence Tag Sequence length (Note 2)	Optional[a)]
Operation Code Tag Operation Code length Operation Code (Note 3)	Optional[a)] (Note 4)
Parameters (Note 5)	Optional[a)]

a) Omitted when no information elements are included in the parameters.

NOTES

1 The component length is coded to indicate the number of octets contained in the component (excluding the component type tag and the component length octets).

2 The sequence length is coded to indicate the number of octets contained in the sequence (excluding the sequence type tag and the sequence length octets).

3 The coding is supplementary service specific and the subject of other Recommendations.

4 If a result is included, then the operation value is mandatory and is the first element in the sequence.

5 It is a parameter within ROSE, but in the ISUP it is a subfield within a field.

TABLE 8/Q.763

Return Error Component

Return Error Component	Mandatory indication
Component Type Tag Component length (Note 1)	Mandatory
Invoke ID Tag Invoke ID length Invoke ID	Mandatory
Error Code Tag Error Code length Error Code	Mandatory
Parameters (Note 2)	Optional

NOTES

1 The component length is coded to indicate the number of octets contained in the component (excluding the component type tag and the component length octets).

2 The coding is supplementary service specific and the subject of other Recommendations.

TABLE 9/Q.763

Reject Component

Reject Component	Mandatory indication
Component Type Tag Component length (Note)	Mandatory
Invoke ID Tag[a)] Invoke ID length Invoke ID	Mandatory
Problem Code Tag Problem Code length Problem Code	Mandatory

a) If the invoke ID is not available, Universal Null (Table 12) with Length = 0 should be used.

NOTE – The component length is coded to indicate the number of octets contained in the component (excluding the component type tag and the component length octets).

The Component Type Tag is coded context-specific, constructor as indicated in Table 10.

TABLE 10/Q.763

Component Type Tag

Component Type Tag	H	G	F	E	D	C	B	A
Invoke	1	0	1	0	0	0	0	1
Return Result	1	0	1	0	0	0	1	0
Return Error	1	0	1	0	0	0	1	1
Reject	1	0	1	0	0	1	0	0

3) *Length of each Component or of their Information Elements*

The length of the contents is coded to indicate the number of octets in the contents. The length does not include the Tag nor the Length of the Contents octet.

The length of the contents uses the short, long or indefinite form. If the length is less than 128 octets, the short form is used. In the short form, bit H is coded 0, and the length is encoded as a binary number using bits A to G. The format of this length field is shown in Figure 47.

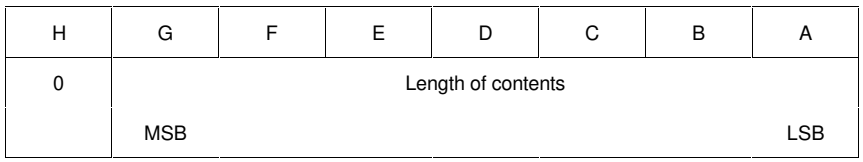
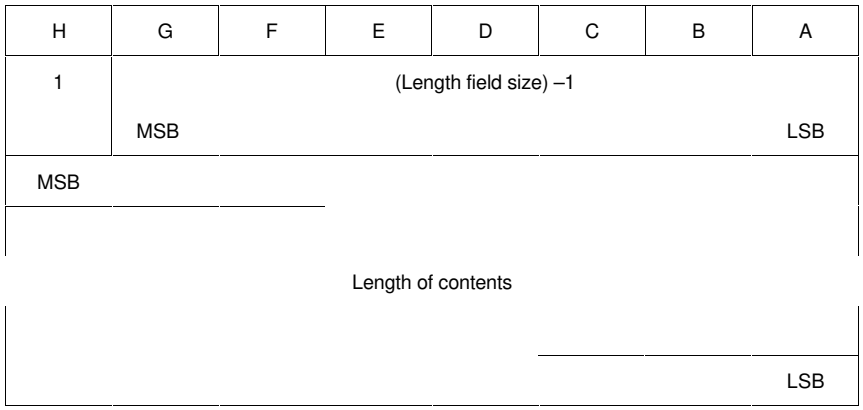


FIGURE 47/Q.763

Format of the length subfield (short form)

If the length is greater than 127 octets, then the long form of the length of the contents is used. The long form length is from 2 to 127 octets long. Bit H of the first octet is coded 1, and bits A to G of the first octet encode a number, one less, than the size of the length in octets as an unsigned binary number whose MSB and LSB are bits G and A, respectively. The length itself is encoded as an unsigned binary number whose MSB and LSB are bit H of the second octet and bit A of the last octet, respectively. This binary number should be encoded in the fewest possible octets, with no leading octets having the value 0.

The format of this length field is shown in Figure 48.



NOTE – The application of the indefinite form of the length is not precluded depending on future application (see Annex B).

FIGURE 48/Q.763

Format of the length subfield (long form)

4) *Component ID Tag*

The term Component ID refers to the Invoke ID or the Linked ID.

The Component ID Tag is coded as shown in Table 11.

TABLE 11/Q.763

Coding of Component ID Tag

	H	G	F	E	D	C	B	A
Invoke ID	0	0	0	0	0	0	1	0
Linked ID[a)]	1	0	0	0	0	0	0	0

a) This tag differs from the Invoke ID, which is coded as a Universal INTEGER, in order to distinguish it from the following tag (Operation Code) which is also coded as a Universal INTEGER.

The length of a Component ID is 1 octet.

An Invoke Component has one or two Component IDs: an Invoke ID and if it is desired to associate the Invoke with a previous Invoke, then the second or Linked ID is provided in addition to the Invoke ID.

Return Result and Return Error Components have one Component ID, called an Invoke ID which is the reflection of the Invoke ID of the Invoke Component to which they are responding.

The Reject Component uses as its Invoke ID, the Invoke ID in the component being rejected. If this ID is unavailable (e.g. due to mutilation of the message undetected by lower layers), then the Invoke ID Tag is replaced with a universal Null Tag (which always has length = 0) as shown in Table 12.

TABLE 12/Q.763

Coding of Null Tag

	H	G	F	E	D	C	B	A
Null Tag	0	0	0	0	0	1	0	1

If an Invoke containing both Invoke and Linked IDs is being rejected, only the Invoke ID is used in the Reject Component.

5) *Operation Code Tag*

Each operation is assigned a value to identify it. Operations can be classified as local or global operations.

A local operation code follows an Operation Code Tag and Operation Code Length. The Operation Code Tag is coded as shown in Table 13.

TABLE 13/Q.763

Coding of Operation Code Tag

	H	G	F	E	D	C	B	A
Local Operation Code Tag	0	0	0	0	0	0	1	0
Global Operation Code Tag	0	0	0	0	0	1	1	0

The Global Operation Code is coded as an Object Identifier, which is described in Recommendation X.209.

6) *Parameter Tag*

The Parameter Tag shall be any valid ASN.1 Tag, depending on the type of the parameter supplied. It can indicate either a primitive or a constructor element and refer to any of the defined tag classes.

When the parameter element is a collection of several information elements, the associated data types shall be derived from the Sequence, SequenceOf, Set or SetOf types.

The Sequence and Set Tags are coded as shown in Table 14.

TABLE 14/Q.763

Coding of Sequence and Set Tag

	H	G	F	E	D	C	B	A
Sequence Tag	0	0	1	1	0	0	0	0
Set Tag	0	0	1	1	0	0	0	1

7) *Error Code Tag*

Each error is assigned a value to identify it. Errors can be classified as local or global errors. A local error code follows the Error Code Tag and Error Code Length. The Error Code Tag is coded as shown in Table 15.

TABLE 15/Q.763

Coding of Error Code Tag

	H	G	F	E	D	C	B	A
Local Error Code Tag	0	0	0	0	0	0	1	0
Global Error Code Tag	0	0	0	0	0	1	1	0

The Global Error Code is coded as an Object Identifier, which is described in Recommendation X.209.

8) *Problem Code*

The Problem Code consists of one of the four elements - General Problem, Invoke Problem, Return Result Problem or Return Error Problem. The tags for these elements are coded as shown in Table 16. Their values are shown in Tables 17 to 20.

TABLE 16/Q.763

Coding of Problem Type Tags

Problem type	H	G	F	E	D	C	B	A
General Problem	1	0	0	0	0	0	0	0
Invoke	1	0	0	0	0	0	0	1
Return Result	1	0	0	0	0	0	1	0
Return Error	1	0	0	0	0	0	1	1

TABLE 17/Q.763

Coding of General Problem

	H	G	F	E	D	C	B	A
Unrecognized Component[a)]	0	0	0	0	0	0	0	0
Mistyped Component[a)]	0	0	0	0	0	0	0	1
Badly Structured Component[a)]	0	0	0	0	0	0	1	0

a) Components are equivalent to ROSE Apllication Protocol Data Units (APDU).

TABLE 18/Q.763

Coding of Invoke Problem

	H	G	F	E	D	C	B	A
Duplicate Invoke ID	0	0	0	0	0	0	0	0
Unrecognized Operation	0	0	0	0	0	0	0	1
Mistyped parameter[a)]	0	0	0	0	0	0	1	0
Resource Limitation	0	0	0	0	0	0	1	1
Initiating Release[b)]	0	0	0	0	0	1	0	0
Unrecognized Linked ID	0	0	0	0	0	1	0	1
Linked Response Unexpected	0	0	0	0	0	1	1	0
Unexpected Linked Operation[c)]	0	0	0	0	0	1	1	1

a) Invoke parameter is equivalent to ROSE Invoke argument.

b) ROSE uses “Initiator releasing” as only the initiator of the underlying association may release it. In ISUP, either entity may release the association.

c) ROSE refers to a linked operation as a child operation.

TABLE 19/Q.763

Coding of Return Result Problem

	H	G	F	E	D	C	B	A
Unrecognized Invoke ID	0	0	0	0	0	0	0	0
Return Result Unexpected	0	0	0	0	0	0	0	1
Mistyped Parameter	0	0	0	0	0	0	1	0

TABLE 20/Q.763

Coding of Return Error Problem

	H	G	F	E	D	C	B	A
Unrecognized Invoke ID	0	0	0	0	0	0	0	0
Return Error Unexpected	0	0	0	0	0	0	0	1
Unrecognized Error	0	0	0	0	0	0	1	0
Unexpected Error	0	0	0	0	0	0	1	1
Mistyped Parameter	0	0	0	0	0	1	0	0

ii) *Specification of components in ASN.1*

The tables take precedence over the ASN.1 coding.

ISUPRemoteOperations {CCITT Recommendation Q.763 moduleA(0)}

```
DEFINITIONS    ::=
BEGIN
EXPORTS  OPERATION, ERROR

Component      ::= CHOICE {  invoke          [1]    IMPLICIT Invoke,
                             returnResult    [2]    IMPLICIT ReturnResult,
                             returnError     [3]    IMPLICIT ReturnError,
                             reject          [4]    IMPLICIT Reject }

-- The Components are sequences of data elements.

Invoke         ::= SEQUENCE { invokeID, InvokeID Type,
                              linkedID [0] IMPLICIT InvokeID Type OPTIONAL,
                              operationCode OPERATION,
                              parameter ANY DEFINED BY operationCode OPTIONAL }
                              -- ANY is filled by the single ASN.1 data type
                              -- following the key word PARAMETER in the type definition
                              -- of a particular operation.

ReturnResult   ::= SEQUENCE { invokeID InvokeID Type,
                              SEQUENCE { operationCode OPERATION,
                              parameters ANY DEFINED BY operationCode }OPTIONAL }
                              -- ANY is filled by the single ASN.1 data type
                              -- following the key word RESULT in the type definition
                              -- of a particular operation.

ReturnError    ::= SEQUENCE { invokeID InvokeId Type
                              errorCode ERROR,
                              parameter ANY DEFINED BY errorCode
                              OPTIONAL }
                              -- ANY is filled by the single ASN.1 data type
                              -- following the key word PARAMETER in the type definition
                              -- of a particular error.

Reject         ::= SEQUENCE { invokeId CHOICE, InvokeId Type, NULL },
                              problem CHOICE {
                              generalProblem       [0]    IMPLICIT GeneralProblem,
                              invokeProblem        [1]    IMPLICIT InvokeProblem,
                              returnResultProblem  [2]    IMPLICIT ReturnResultProblem,
                              returnErrorProblem   [3]    IMPLICIT ReturnErrorProblem }}

InvokedIdType  ::= INTEGER (–128 ... 127).
```

```
-- OPERATIONS

-- Operations are specified with the OPERATION MACRO. When an operation is specified, the
-- valid parameter set, results and errors for that operation are indicated. Default values and
-- optional parameters are permitted.

OPERATION  MACRO
BEGIN                          ::=


TYPE  NOTATION                 ::=  Parameter Result Errors LinkedOperations
VALUE  NOTATION                ::=  value (VALUE  CHOICE {
                                        localValue INTEGER,
                                        globalValue OBJECT  IDENTIFIER })

Parameter                      ::=  "PARAMETER" NamedType | empty

Result                         ::=  "RESULT" ResultType | empty

Errors                         ::=  "ERRORS"  "{"ErrorNames"}" | empty

LinkedOperations               ::=  "LINKED" "{"LinkedOperationNames"}" | empty

ResultType                     ::=  NamedType | empty

ErrorNames                     ::=  ErrorList | empty

ErrorList                      ::=  Error | ErrorList", "Error

LinkedOperationNames           ::=  operationList | empty

operationList                  ::=  operation | OperationList", "operation

NamedType                      ::=  identifiertype | type

END       -- end of Operation Macro


Error                          ::=  value (ERROR)
                                       -- shall reference an error value

                                    | type
                                       -- shall reference an error type if no error value is specified

Operation                      ::=  value (OPERATION)
                                       -- shall reference an Operation Value

                                    | type
                                       -- shall reference an Operation type if no Operation value is specified

-- ERRORS

-- Errors are specified with the ERROR MACRO. When an error is specified, the valid parameters
-- for that error are indicated. Default values and optional parameters are permitted.

ERROR  MACRO                   ::=
BEGIN


TYPE  NOTATION                 ::=  PARAMETER
VALUE  NOTATION                ::=  value (VALUE CHOICE {
                                        localValue INTEGER,
                                        globalValue OBJECT IDENTIFIER })

Parameter                      ::=  "PARAMETER" NamedType | empty

NamedType                      ::=  identifier type | type

END       -- end of Error Macro
```

```
-- PROBLEMS

GeneralProblem          ::= INTEGER  { unrecognizedComponent (0)
                                       mistypedComponent (1)
                                       badlyStructuredComponent (2) }

InvokeProblem           ::= INTEGER  { duplicateInvokeID (0)
                                       unrecognizedOperation  (1)
                                       mistypedParameter (2)
                                       resourceLimitation (3)
                                       initiatingRelease (4)
                                       unrecognizedLinkedID  (5)
                                       linkedResponseUnexpected (6)
                                       unexpectedLinkedOperation (7) }

ReturnResultProblem     ::= INTEGER  { unrecognizedInvokeID (0)
                                       returnResultUnexpected  (1)
                                       mistypedParameter (2) }

ReturnErrorProblem      ::= INTEGER  { unrecognizedInvokeID (0)
                                       returnErrorUnexpected (1)
                                       unrecognizedError (2)
                                       unexpectedError (3)
                                       mistypedParameter (4) }

END     -- end of ISUPRemoteOperation Module.
```

3.49 Service activation @

The format of the service activation parameter field is shown in Figure 49.

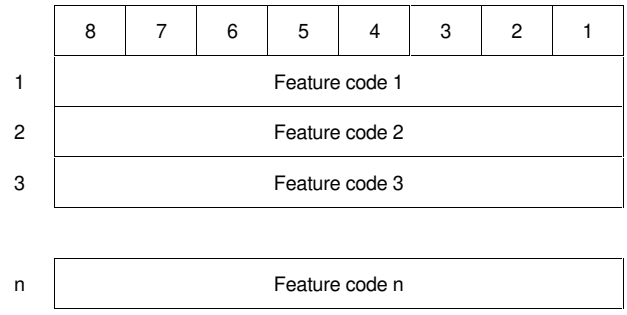


FIGURE 49/Q.763

Service activation parameter field

The following feature codes are used in the service activation parameter field:

0000 0000 to 0111 1011 } reserved for international use

0111 1100 to 1111 1110 } reserved for international use

1111 1111 reserved for extension

3.50 Signalling point code @

The format of the signalling point code parameter field is shown in Figure 50.

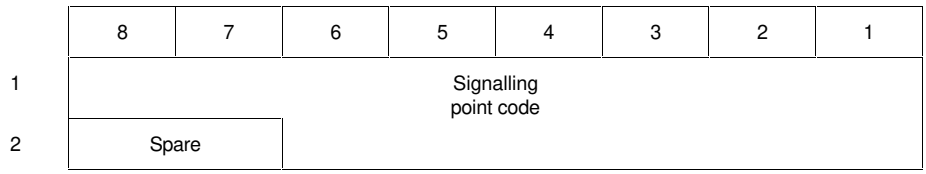


FIGURE 50/Q.763

Signalling point code parameter field

3.51 Subsequent number

The format of the subsequent number parameter field is shown in Figure 51.

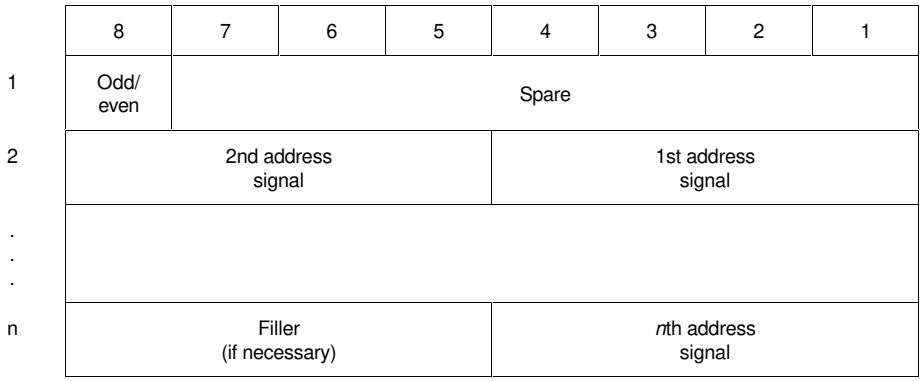


FIGURE 51/Q.763

Subsequent number parameter field

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

a) Odd/even indicator: see 3.9 a)

b) Address signal: see 3.9 e)

c) Filler: see 3.9 f).

3.52 Suspend/resume indicators

The format of the suspend/resume indicators parameter field is shown in Figure 52.

8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A

FIGURE 52/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

3.53 Transit network selection @

The format of the transit network selection parameter field is shown in Figure 53.

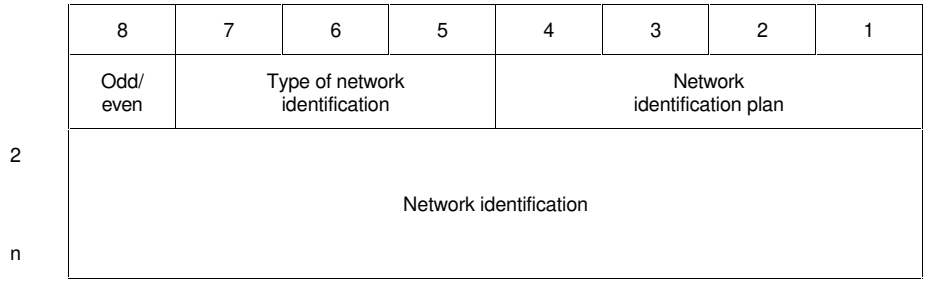


FIGURE 53/Q.763

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 spare

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 coding principle given in 3.9 e).

3.54 Transmission medium requirement

The format of the transmission medium requirement parameter field is shown in Figure 54.

8	7	6	5	4	3	2	1
Transmission medium requirement (TMR)							

FIGURE 54/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	reserved for alternate speech (service 2)/64 kbit/s unrestricted (service 1)
00000101	reserved for alternate 64 kbit/s unrestricted (service 1)/speech (service 2)
00000110	64 kbit/s preferred
00000111	2 × 64 kbit/s unrestricted
00001000	384 kbit/s unrestricted
00001001	1536 kbit/s unrestricted
00001010	1920 kbit/s unrestricted
00001011 to 11111111	spare

3.55 Transmission medium requirement prime

The format of the transmission medium requirement prime parameter field corresponds to the format shown in Figure 54, except that the coding rules for optional parameter are applied.

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

00000000	speech
00000001	spare
00000010	reserved for 64 kbit/s unrestricted
00000011	3.1 kHz audio
00000100	reserved for alternate speech (service 2)/64 kbit/s unrestricted (service 1)
00000101	reserved for alternate 64 kbit/s unrestricted (service 1)/speech (service 2)
00000110	reserved for 64 kbit/s preferred
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 to 11111111	spare

3.56 Transmission medium used

The format of the transmission medium used parameter field corresponds to the format shown in Figure 54, except that the coding rules for optional parameter are applied.

The codings are identical to codings in section 3.55.

3.57 User service information

The format of the user service information parameter field is shown in Figure 55. 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.

The codes to be used in the subfields of the user service information parameter field are defined in the bearer capability information element in Recommendation Q.931.

	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		Iinformation 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				

NOTES

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

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

3 Octets 3, 4, 5 or any combination of these octets may be omitted. Octet 3 may be extended as described in Table 4-6/Q.931.

FIGURE 55/Q.763

User service information parameter field

3.58 User service information prime

The format of the user service information prime parameter field is shown in Figure 55.

The codes used for the user service information prime parameter field correspond to the codes shown in clause 4/Q.931.

3.59 User teleservice information

The format of the user teleservice information parameter field is shown in Figure 56. This format is the same as the high layer compatibility information element from Recommendation Q.931 and not all capabilities coded here are supported at this time.

The codes to be used in the user teleservice information parameter field are defined in the high layer compatibility information element in Recommendation Q.931.

	8	7	6	5	4	3	2	1
1		Coding standard		Interpretation			Presentation	
2	0/1 ext.	High layer characteristics identification						
	1 ext.	Extended high layer characteristics identification						

FIGURE 56/Q.763

User teleservice information parameter field

3.60 User-to-user indicators

The format of the user-to-user indicators parameter field is shown in Figure 57.

8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A

FIGURE 57/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: Network discard indicator

0 no information
1 user-to-user information discarded by the network

3.61 User-to-user information

The format of the user-to-user information parameter is shown in Figure 58.

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

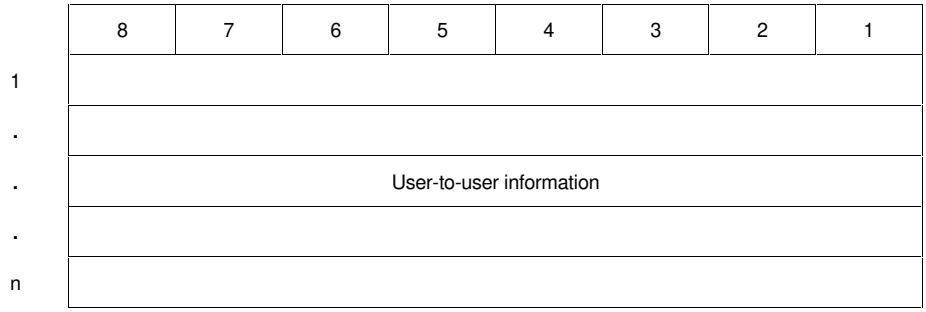


FIGURE 58/Q.763

User-to-user information parameter field

4 ISDN user part messages and codes

In Tables 21 to 49, 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 subclause 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 Tables 21 to 49.

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 5 and are not shown explicitly in Tables 4 to 42.

TABLE 21/Q.763

Message Type: Address complete

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Backward call indicators	3.5	F	2
Optional backward call indicators	3.37	O	3
Call reference @	3.8	O	7
Cause indicators	3.12	O	4-?
User-to-user indicators	3.60	O	3
User-to-user information	3.61	O	3-131
Access transport	3.3	O	3-?
Generic notification ind. (Note)	3.25	O	3
Transmission medium used	3.56	O	3
Echo control information	3.19	O	3
Access delivery information	3.2	O	3
Redirection number	3.46	O	5-12
Parameter compatibility information	3.41	O	4-?
Call diversion information	3.6	O	3
Network specific facility @	3.36	O	4-?
Remote operations @	3.48	O	3-?
Service activation @	3.49	O	3-?
Redirection number restr.	3.47	O	3
End of optional parameters	3.20	O	1
NOTE – This parameter may be repeated.			

TABLE 22/Q.763

Message Type: Answer

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Backward call indicators	3.5	O	4
Optional backward call indicators	3.37	O	3
Call reference @	3.8	O	7
User-to-user indicators	3.60	O	3
User-to-user information	3.61	O	3-131
Connected number	3.16	O	4-12
Access transport	3.3	O	3-?
Access delivery information	3.2	O	3
Generic notification ind. (Note)	3.25	O	3
Parameter compatibility information	3.41	O	4-?
Call history information	3.7	O	4
Generic number (Note)	3.26	O	4-12
Transmission medium used	3.56	O	3
Network specific facility @	3.36	O	4-?
Remote operations @	3.48	O	?
Redirection number	3.46	O	5-12
Service activation @	3.49	O	3-?
Echo control information	3.19	O	3
Redirection number restr.	3.47	O	3
End of optional parameters	3.20	O	1
NOTE – This parameter may be repeated.			

TABLE 23/Q.763

Message Type: Call progress

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Event information	3.21	F	1
Cause indicators	3.12	O	4-?
Call reference @	3.8	O	7
Backward call indicators	3.5	O	4
Optional backward call indicators	3.37	O	3
Access transport	3.3	O	3-?
User-to-user indicators	3.60	O	3
Redirection number	3.46	O	5-12
User-to-user information	3.61	O	3-131
Generic notification ind. (Note)	3.25	O	3
Network specific facility @	3.36	O	4-?
Remote operations @	3.48	O	?
Transmission medium used	3.56	O	3
Access delivery information	3.2	O	3
Parameter compatibility information	3.41	O	4
Call diversion information	3.6	O	3
Service activation @	3.49	O	3-?
Redirection number restr.	3.47	O	3
End of optional parameters	3.20	O	1
NOTE – This parameter may be repeated.			

TABLE 24/Q.763

Message Type: Circuit group query response @

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Range and status[a)]	3.43	V	2
Circuit state indicator @	3.14	V	3-33
a) The status subfield is not present.			

TABLE 25/Q.763

Message Type: Circuit group reset acknowledgement

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Range and status	3.43	V	3-34

TABLE 26/Q.763

Message Type: Confusion

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Cause indicators	3.12	V	4-20
End of optional parameters	3.20	O	1

TABLE 27/Q.763

Message Type: Connect

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Backward call indicators	3.5	F	2
Optional backward call indicators	3.37	O	3
Connected number	3.16	O	4-12
Call reference @	3.8	O	7
User-to-user indicators	3.60	O	3
User-to-user information	3.61	O	3-131
Access transport	3.3	O	3-?
Network specific facility @	3.36	O	4-?
Generic notification ind. (Note)	3.25	O	3
Remote operations @	3.48	O	?
Transmission medium used	3.56	O	3
Echo control information	3.19	O	3
Access delivery information	3.2	O	3
Call history information	3.7	O	3
Parameter compatibility information	3.41	O	4-?
Redirection number	3.46	O	5-12
Service activation @	3.49	O	3-?
Generic number (Note)	3.26	O	4-12
Redirection number restr.	3.47	O	3
End of optional parameters	3.20	O	1
NOTE – This parameter may be repeated.			

TABLE 28/Q.763

Message type: Continuity

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Continuity indicators	3.18	F	1

TABLE 29/Q.763

Message Type: Facility reject

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Facility indicator	3.22	F	1
Cause indicators	3.12	V	4
User-to-user indicators	3.60	O	3
End of optional parameters	3.20	O	1

TABLE 30/Q.763

Message Type: Information @

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Information indicators	3.28	F	2
Calling party's category	3.11	O	3
Calling party number	3.10	O	5-12
Call reference	3.8	O	7
Connection request	3.17	O	7-9
Parameter compatibility information	3.41	O	4-?
Network specific facility	3.36	O	6-?
End of optional parameters	3.20	O	1

TABLE 31/Q.763

Message Type: Information request @

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Information request indicators	3.29	F	2
Call reference	3.8	O	7
Network specific facility	3.36	O	4-?
Parameter compatibility information	3.41	O	4-?
End of optional parameters	3.20	O	1

TABLE 32/Q.763

Message Type: Initial address

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Nature of connection indicators	3.35	F	1
Forward call indicators	3.23	F	2
Calling party's category	3.11	F	1
Transmission medium requirement	3.54	F	1
Called party number	3.9	V	4-11
Transit network selection @	3.53	O	4-?
Call reference @	3.8	O	7
Calling party number	3.10	O	4-12
Optional forward call indicators	3.38	O	3
Redirecting number	3.44	O	4-12
Redirection information	3.45	O	3-4
Closed user group interlock code	3.15	O	6
Connection request	3.17	O	7-9
Original called number	3.39	O	4-12
User-to-user information	3.61	O	3-131
Access transport	3.3	O	3-?
User service information	3.57	O	4-13
User-to-user indicators	3.60	O	3
Generic number (Note 2)	3.26	O	5-13
Propagation delay counter	3.42	O	4
User service information prime	3.58	O	4-13
Network specific facility @	3.36	O	4-?
Generic digit @ (Note 1)	3.24	O	?
Originating ISC point code	3.40	O	4
User service information prime	3.58	O	7
Remote operations @	3.48	O	?
Parameter compatibility information	3.41	O	4-?
Generic notification (Note 1)	3.25	O	3
Service activation @	3.49	O	3-?
Generic reference (Note 2)	3.27	O	5-?
MLPP precedence	3.34	O	8
Transmission medium requirement prime	3.55	O	3
Location number	3.30	O	5-12
End of optional parameters	3.20	O	1

NOTES

1 This parameter may be repeated.

2 For further study.

TABLE 33/Q.763

Message Type: Release

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Cause indicators	3.12	V	3-?
Redirection information @	3.45	O	3-4
Redirection number @	3.46	O	5-12
Access transport	3.3	O	3-?
Signalling point code @	3.50	O	4
User-to-user information	3.61	O	3-131
Automatic congestion level	3.4	O	4
Network specific facility @	3.36	O	4-?
Access delivery information	3.2	O	3
Parameter compatibility information	3.41	O	4-?
Redirection number restric.	3.47	O	3
User-to-user indicators	3.60	O	3
End of optional parameters	3.20	O	1

TABLE 34/Q.763

Message Type: Release complete

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Cause indicators	3.12	O	5-6
End of optional parameters	3.20	O	1

TABLE 35/Q.763

Message Type: Subsequent address

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Subsequent number	3.51	V	3-10
End of optional parameters	3.20	O	1
NOTE – No new optional parameters are allowed in the subsequent message.			

TABLE 36/Q.763

Message Type: User-to-user information

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
User-to-user information	3.61	V	2-130
Access transport	3.3	O	3-?
End of optional parameters	3.20	O	1

TABLE 37/Q.763

Message Type: Forward transfer

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Call reference @	3.8	O	7
End of optional parameters	3.20	O	1

TABLE 38/Q.763

Message Type: Resume, Suspend

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Suspend/resume indicators	3.52	F	1
Call reference @	3.8	O	7
End of optional parameters	3.20	O	1

TABLE 39/Q.763

Message Type: Blocking
Blocking acknowledgement
Continuity check request
Loop back acknowledgement @
Overload @
Reset circuit
Unblocking
Unblocking acknowledgement
Unequipped circuit identification code @

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

TABLE 40/Q.763

Message Type: Circuit group blocking
Circuit group blocking acknowledgement
Circuit group unblocking
Circuit group unblocking acknowledgement

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Circuit group supervision message type indicator	3.13	F	1
Range and status	3.43	V	3-34

TABLE 41/Q.763

Message Type: Circuit group reset
Circuit group query @

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Range and status[a)]	3.43	V	2

a) The status subfield is not present.

TABLE 42/Q.763

Message Type: Facility accepted
Facility request

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Facility indicator	3.22	F	1
User-to-user indicators	3.60	O	3
Call reference @	3.8	O	7
Connection request	3.17	O	9
Parameter compatibility information	3.41	O	4-?
End of optional parameters	3.20	O	1

TABLE 43/Q.763

Message Type: Pass-along @

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Message type Mandatory fixed part Mandatory variable part Optional part	Any message in Tables 21 to 49 which is relevant only at the "endpoint" of a connection as defined in 3/Q.764		

TABLE 44/Q.763

Message Type: User part test
User part available

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Parameter compatibility information	3.41	O	4-?
End of optional parameter	3.20	O	1

TABLE 45/Q.763

Message Type: Facility @

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Message compatibility information	3.33	O	4
Parameter compatibility information	3.41	O	4-?
Remote operations	3.48	O	?
Service activation	3.49	O	3-?
End of optional parameter	3.20	O	1

TABLE 46/Q.763

Message Type: Network resource management

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Message compatibility information	3.33	O	4
Parameter compatibility information	3.41	O	4-?
Echo control information	3.19	O	3
Transmission medium used	3.55	O	3
End of optional parameter	3.20	O	1

TABLE 47/Q.763

Message Type: Identification request

Parameter name	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
MCID request indicators	3.31	O	3-?
Message compatibility information	3.33	O	4-?
Parameter compatibility information	3.41	O	4-?
End of optional parameter	3.20	O	1

TABLE 48/Q.763

Message Type: Identification response

Parameter name	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
MCID response indicator	3.32	O	3-?
Message compatibility information	3.33	O	4-?
Parameter compatibility information	3.41	O	4-?
Calling party number	3.10	O	5-12
Access transport	3.3	O	3-?
Generic number (Note)	3.26	O	5-13
End of optional parameter	3.20	O	1
NOTE – This parameter may be repeated.			

TABLE 49/Q.763

Message Type: Segmentation

Parameter	Reference (subclause)	Type	Length (octets)
Message type	2.1	F	1
Access transport	3.3	O	3-?
User-to-user information	3.61	O	3-131
Message compatibility information	3.33	O	4-5
Generic digit (Note)	3.24	O	?
Generic notification (Note)	3.25	O	3
Generic number (Note)	3.26	O	5-13
End of optional parameter	3.20	O	1
NOTE – This parameter may be repeated.			

Annex A

Interpretation of spare codes

(This annnex forms an integral part of this Recommendation)

This annex describes interpretations which can be applied when a recognized parameter is received containing codes currently indicated as being spare in this Recommendation. 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.

For the remaining cases, listed in Table A.2, 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 determinating that an entire parameter should be considered uninterpretable are described in 2.10.5.3/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	(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".	

Tables for handling of unrecognized parameter values

Reference see 2.10.5.3/Q.764.

Type A exchanges

Unrecognized parameter values should be handled as indicated below in Type A exchanges (Type A exchanges as described in 2.10.5.2/Q.764). See also 2.10.5.3 iii)/Q.764.

Required actions:

Default – Handle as if the default value was received.

Ignore – The value is "don't care"; the received value may be passed on unchanged or reset to zero.

No default – Pass to call control.

Table A.2 shows the reaction of a Type A exchange.

The tables show the normal actions unless specific procedural text in Recommendations Q.764 and Q.73x-Series states otherwise.

TABLE A.2/Q.763 (sheet 1 of 5)

Type A exchanges

Reference (subclause)	Title	Action
3.4	Automatic congestion level	Discard parameter
3.5	Backward call indicators	
	Charge ind. Bits BA:	Default: 10 "charge"
	Called party status ind. Bits DC:	Default: 00 "no indication"
	Called party category ind. Bits FE:	Default: 00 "no indication"
	End to end method ind. Bits HG:	Default: 00 "no end to end method available"
	End to end information ind. (national use) Bit J:	Default: 0 "no end to end info available"
	Holding ind. (national use) Bit L:	Default: 0 "holding not requested"
	SCCP method ind. Bits PO:	Default: 00 "no indication"
3.9	Called party number	
	Nature of address ind.	Send release with cause 28
	Numbering plan ind.	Send release with cause 28
	Spare	Ignore
	Address signals	Send release with cause 28 (Note)
	Filler	Default: 0000

TABLE A.2/Q.763 (sheet 2 of 5)

Type A exchanges

Reference (subclause)	Title	Action
3.10	Calling party number	
	Nature of address ind.	Discard parameter
	Number incomplete ind.	Discard parameter
	Numbering plan ind.	Discard parameter
	Presentation restricted ind.	Default: 01 "presentation restricted"
	Screening ind.	Discard parameter
	Address signals	No Default
	Filler	Default: 000
3.11	Calling party's category	Default: 0000 1010 "ordinary subscriber"
3.12	Cause indicators	
	Coding standard	Default: 00 "CCITT"
	Spare	Ignore
	Location	International: Default "international network". National: default "beyond an interwork point"
	Cause value	Default: "unspecified within class xxx"
3.13	Circuit group supervision message type indicator	
	Type ind. Bits BA:	Discard message
	Reserved Bits H-C:	Send confusion with cause 110
3.16	Connected number	
	Nature of address ind.	Discard parameter
	Spare	Ignore
	Numbering plan ind.	Discard parameter
	Presentation restricted ind.	Default: 01 "presentation restricted"
	Screening ind.	Discard parameter
	Address signals	No Default
	Filler	Default: 0000
3.18	Continuity indicators	
	Reserved Bits H-B:	Ignore

TABLE A.2/Q.763 (sheet 3 of 5)

Type A exchanges

Reference (subclause)	Title	Action
3.21	Event information Event ind. Bits G-A:	 Discard message
3.22	Facility indicators	Discard message
3.23	Forward call indicators End to end method ind. Bits CB: End to end inform ind. (national use) Bit E: ISUP preference ind. Bits HG: SCCP method indicator Bits KJ: Spare Bit L: Reserved (national use) Bits P-M:	 Default: 00 “no end to end method available” Default: 0 “no end to end info available” Send release with cause 111 Default: 00 “no indication” Ignore Ignore
3.28	Information indicators CgPA response ind. (national use) Bits BA: Holding ind. (national use) Bit C: MCID response ind. (national use) Bit D: Spare Bit E: CgPC response ind. (national use) Bit F: Charge inform. resp. ind. (national use) Bit G: Solicited inf. ind. Bit H: Reserved Bits P-I:	 Default: “CgPA not included” Default: “Hold not provided” Default: “MCID not provided” Ignore Default: “CgPC not included” Default: “Charge inform. not included” Default: “Unsolicited” Ignore
3.29	Information request ind. Spare/Reserved Bits P-M, L-I, G, F, C:	 Ignore

TABLE A.2/Q.763 (sheet 4 of 5)

Type A exchanges

Reference (subclause)	Title	Action
3.35	Nature of connection ind. Satellite ind. Bits BA: Continuity ind. Bits DC: Reserved Bits H-F:	 Default: 10 "two satellites in the connection" See Type B exchange Ignore
3.37	Optional backward call indicators Reserved for national use Bits E-H:	 Ignore
3.38	Optional forward call indicators Closed user group call ind. Bits BA: Spare Bits G-D:	 Default: 00 "non-CUG call" Ignore
3.39	Original Called Number Nature of address ind. Numbering plan ind. Address present. restr. ind. Address signals Filler	 Discard parameter Discard parameter Default: "Presentation restricted" No default Default: 0000
3.43	Range and Status	See 2.9.2/Q.764 and 2.10.3/Q.764
3.44	Redirecting Number	As indicated in 3.10 in this table
3.45	Redirection information Redirection ind. Bits C-A: Original redirection reason, Bits H-E: Redirection counter, Bits K-I: Redirection reason, Bits P-N: Spare/Reserved Bits L, D:	 Default: "Call diversion, all redirection information presentation restricted" Default: "unknown (not available)" Default: "101" Default: "unknown/not available" Ignore

TABLE A.2/Q.763 (sheet 5 of 5)

Type A exchanges

Reference (subclause)	Title	Action
3.46	Redirection number	As indicated in 3.10 in this table
3.51	Subsequent Number	
	Spare Bits 1-7	Ignore
	Address signal	Send release with cause 28 (Note)
	Filler	Default: 0000
3.52	Suspend/Resume indicators	
	Reserved Bits H-B:	Ignore
3.54	Transmission medium requirement	Send release with cause 65
3.57	User Service Information	No Default
3.60	User to User Indicators	
	Service 1 Bits CB:	Default: 00 "no information"
	Service 2 Bits ED:	Default: 00 "no information"
	Service 3 Bits GF:	Default: 00 "no information"
NOTE – Evaluated as far as needed for routing.		

Type B exchanges

Table A.3 shows the reaction of a Type B exchange.

The following definitions are used.

Default – Handle as if the default value was received; the default value is sent.

Ignore – The value is "don't care", the received value may be passed on unchanged or reset to zero.

No default – Value received passed on unchanged.

The tables show the normal actions unless specific procedural text in Recommendations Q.764 and Q.73x-Series state otherwise.

TABLE A.3/Q.763 (sheet 1 of 4)

Type B exchanges

Reference (subclause)	Title	Action
3.4	Automatic congestion level	Discard parameter
3.5	Backward call indicator	
	Charge ind. Bits BA:	No default
	Called party status ind. Bits DC:	No default
	Called party category ind. Bits FE:	No default
	End to end method ind. Bits HG:	No default
	End to end information ind. (national use) Bit J:	No default
	Holding ind. (national use) Bit L:	Ignore (international transit) No Default (national transit)
	SCCP method ind. Bits PO:	No default
3.9	Called party number	
	Nature of address ind.	Send release with cause 28
	Numbering plan ind.	Send release with cause 28
	Spare	Ignore
	Address signals	Send release with cause 28 (Note)
	Filler	Default: 0000
3.10	Calling party number	
	Nature of address ind.	No default
	Number incomplete ind.	No default
	Numbering plan ind.	No default
	Presentation restric. ind.	No default
	Screening ind.	No default
	Address signals	No default
	Filler	Ignore
3.11	Calling party's category	No default
3.12	Cause indicators	
	Coding standard	No default
	Spare	Ignore
	Location	No default
	Cause value	No default

TABLE A.3/Q.763 (sheet 2 of 4)

Type B exchanges

Reference (subclause)	Title	Action
3.13	Circuit group supervision message type indicator	
	Type ind. Bits BA:	Discard message and send confusion with cause 110
	Reserved Bits H-C:	Ignore
3.16	Connected number	
	Nature of address ind.	No default
	Spare	Ignore
	Numbering plan ind.	No default
	Presentation restric. ind.	No default
	Screening indicator	No default
	Address signals	No default
	Filler	Ignore
3.18	Continuity indicators Bits H-B: spare	Ignore
3.21	Event information	
	Event ind. Bits G-A:	No default
3.22	Facility indicators	Discard message
3.23	Forward call indicator	
	End to end method ind. Bits CB:	No default
	End to end information ind. (national use) Bit E:	No default
	ISUP preference ind. Bits HG:	Send release with cause 111
	SCCP method ind. Bits KJ:	No default
	Spare Bit L:	Ignore
	Spare (national use) Bits P-M:	Ignore

TABLE A.3/Q.763 (sheet 3 of 4)

Type B exchanges

Reference (subclause)	Title	Action
3.28	Information indicators	
	Calling party address resp. ind. (national use) Bits BA:	No default
	Hold provided ind. (national use) Bit C:	No default
	Calling party's category resp. ind. (national use) Bit F:	No default
	Charge inform. resp. ind. (national use) Bit G:	No default
	Solicited inform. ind. Bit H:	Default: 0 "solicited"
	Spare Bits L-I, E, D:	Ignore
3.29	Inform. request indicators	
	Spare/reserved (national use) Bits P-A:	Ignore
3.35	Nature of connection indicators	
	Satellite ind. Bits BA:	Default: 10 "two satellites in the connection"
	Continuity ind. Bits DC:	Default: 00 "continuity check not required" unless required on the outgoing circuit and send confusion with cause 110 + diagnostics
	Spare Bits H-F:	Ignore
3.37	Optional backward call indicators	
	Reserved (national use) Bits H-E:	Ignore
3.38	Optional forward call indicators	
	Closed user group call ind. Bits BA:	No default
	Spare Bits O-G:	Ignore
3.39	Original Called number	
	Nature of address indicator	No default
	Number incomplete indicator	No default
	Numbering plan indicator	No default
	Presentation restric. indicator	No default
	Screening indicator	No default
	Address signals	No default
	Filler	Ignore

TABLE A.3/Q.763 (sheet 4 of 4)

Type B exchanges

Reference (subclause)	Title	Action
3.43	Range and status	See 2.9.2/Q.764 and 2.10.3/Q.764
3.45	Redirection information	
	Redirection indicator Bits C-A:	No default
	Original redirection reason Bits H-E:	No default
	Redirection counter Bits K-I:	No default
	Redirection reason Bits P-N:	No default
	Spare Bits L, D:	Ignore
3.51	Subsequent Number	
	Spare Bits 1-7	Ignore
	Address signal	Send release with cause 28 (Note)
	Filler	Default: 0000
3.52	Suspend/Resume indicators	
	Spare Bits H-B:	Ignore
3.54	Transmission medium requirement	Send release with cause 65
3.57	User service information	No default
3.60	User to user indicators	
	Type Bit A	
	Service 1 Bits CB:	No default
	Service 2 Bits ED:	No default
	Service 3 Bits GF:	No default
NOTE – Evaluated as far as needed for routing.		

Annex B

General description of component encoding rules

(This annnex forms an integral part of this Recommendation)

B.1 General components structure

Each information element within a component has the same structure. An information element consists of three fields, which always appear in the following order. The Tag distinguishes one type from another and governs the interpretation of the Contents. The Length specifies the length of the Contents. The Contents is the substance of the element, containing the primary information the element is intended to convey. Figure B.1 shows an overview of a component and an information element.

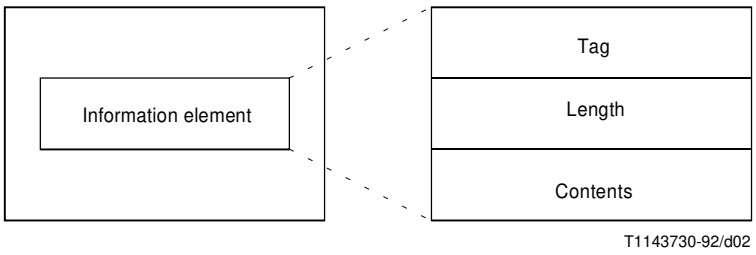


FIGURE B.1/Q.763

Structure of component and information element

Each field is coded using one or more octets. Octets are labelled as shown in Figure B.2. The first octet is the first transmitted. Bits in an octet are labelled as shown in Figure B.3, with bit A the least significant and the first transmitted.

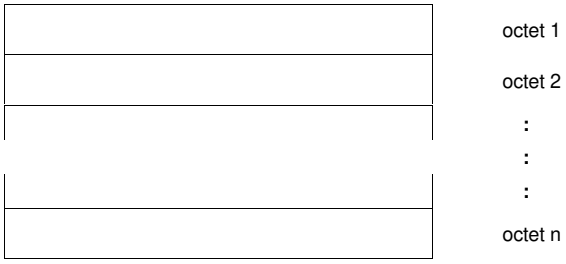


FIGURE B.2/Q.763

Octet labelling sheme

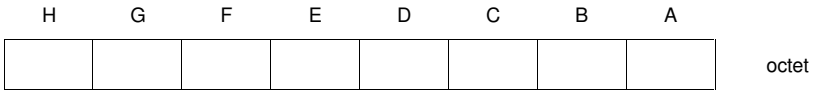
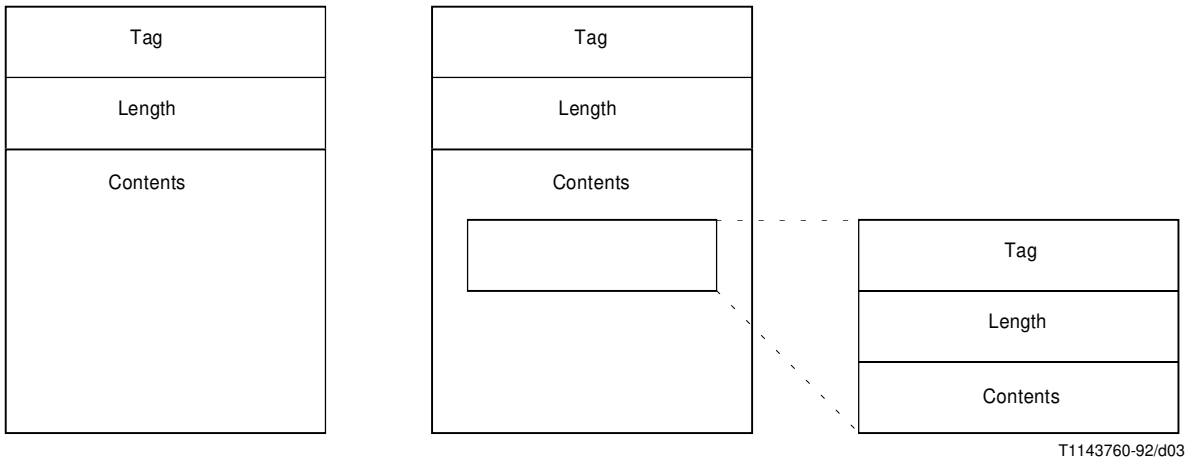


FIGURE B.3/Q.763

Bit labelling scheme

The contents of each element is either one value (Primitive) or one or more information element (Constructor), as shown in Figure B.4.



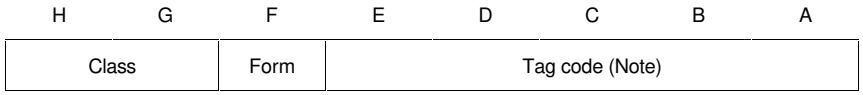
a) Primitive *b) Constructor*

FIGURE B.4/Q.763

Types of contents

B.2 Tags

An information element is first interpreted according to its position within the syntax of the message. The Tag distinguishes one information element from another and governs the interpretation of the Contents. It is one or more octets in length. The Tag is composed of “Class”, “Form” and “Tag code”, as shown in Figure B.5.



NOTE – The tag code may be extended to the following octet(s) as discussed in B.2.3.

FIGURE B.5/Q.763

Format of Tag

B.2.1 Tag class

All Tags use the two most significant bits (H and G) to indicate the Tag Class. These bits are coded as shown in Table B.1.

TABLE B.1/Q.763

Coding of tag class

Class	Coding (HG)
Universal	00
Application-wide	01
Context-specific	10
Private use	11

The universal class is used for Tags that are exclusively standardized in Recommendation X.209 and are application independent types. Universal Tags may be used anywhere a universal information element type is used. The universal class applies across all CCITT Recommendations, i.e. across Signalling System No. 7 ASEs, Recommendation X.400 MHS, etc.

The Application-wide class is used for information elements that are standardized across all applications (ASEs) using Signalling System No. 7.

The Context-specific class is used for information elements that are specified within the context of the next higher construction and take into account the sequence of other information elements within the same construction. This class may be used for tags in a construction, and the tags may be re-used in any other construction.

The Private Use class is reserved for information elements specific to a nation, a network or a private user. Such information elements are beyond the scope of this Recommendation.

B.2.2 Form of the information element

Bit F is used to indicate whether the element is “Primitive” or “Constructor”, as is shown in Table B.2. A primitive element is one whose structure is atomic (i.e. one value only). A constructor element is one whose content is one or more information elements which may themselves be constructor elements.

Both forms of elements are shown in Table B.2.

TABLE B.2/Q.763

Coding of element form

Element Form	Coding (F)
Primitive	0
Constructor	1

B.2.3 Tag Code

Bits A to E of the first octet of the Tag plus any extension octets represent a Tag code that distinguishes one element type from another of the same class. Tag codes in the range 00000 to 11110 (0 to 30 decimal) are provided in one octet.

The extension mechanism is to code bits A to E of the first octet as 11111. Bit H of the following octet serves as an extension indicator. If bit H of the extension octet is set to 0, then no further octets for this tag are used. If bit H is set to 1, the following octet is also used for extension of the Tag code. The resultant Tag consists of bits A to G of each extension octet, with bit G of the first extension octet being most significant and bit A of the last extension octet being least significant. Tag code 31 is encoded as 0011111 in bits G to A of a single extension octet. Higher tag codes continue from this point using the minimum possible number of extension octets.

Figure B.6 shows the detailed format of the Tag code.

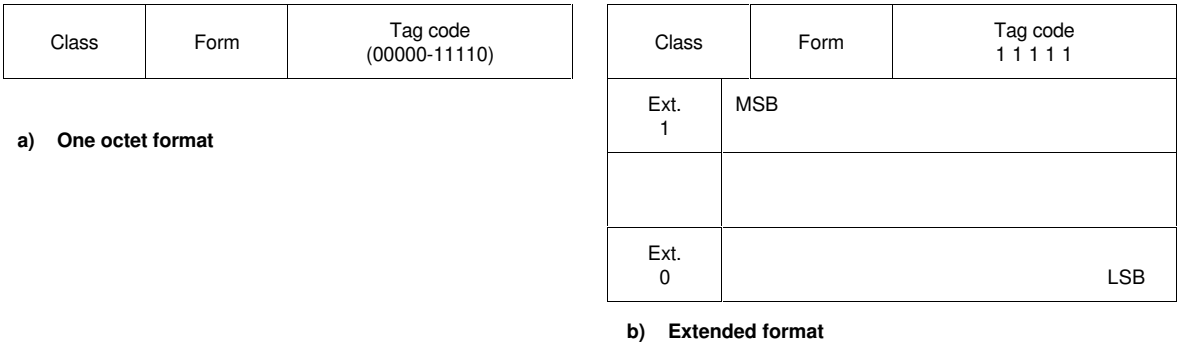


FIGURE B.6/Q.763

Format of the Tag Code

B.3 Length of the Contents

The length of the contents is coded to indicate the number of octets in the contents. The length does not include the Tag nor the Length of the Contents octets.

The Length of the Contents uses the short, long or indefinite form. If the length is less than 128 octets, the short form is used. In the short form, bit H is coded 0, and the length is encoded as a binary number using bits A to G.

If the length is greater than 127 octets, then the long form of the length of the contents is used. The long form length is from 2 to 127 octets long. Bit H of the first octet is coded 1, and bits A to G of the first octet encode a number one less than the size of the length in octets as an unsigned binary number whose MSB and LSB are bits G and A, respectively. The length itself is encoded as an unsigned binary number whose MSB and LSB are bit H of the second octet and Bit A of the last octet, respectively. This binary number should be encoded in the fewest possible octets, with no leading octets having the value 0.

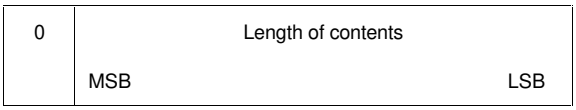
The indefinite form is one octet long and may (but need not) be used in place of the short or long form, whenever the element is a constructor. It has the value 1000 0000. When this form is employed, a special end-of-contents (EOC) indicator terminates the contents.

There is no notation for the end-of-contents indicator. Although considered part of the contents syntactically, the end-of-contents indicator has no semantic significance.

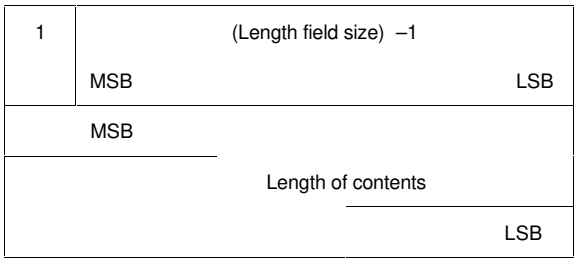
The representation for the end-of-contents indicator is an element whose class is universal, whose form is primitive, whose ID code has the value 0, and whose contents is unused and absent:

EOC	Length	Content
00 (hex)	00 (hex)	Absent

Figure B.7 shows the formats of the length field described above. The maximum value that may be encoded is constrained by the network message size limitations in the connectionless case.



a) Short form



b) Long form

Constructor Element tag
L = 1000 0000
Tag Length (Note) Contents
: : :
Tag Length (Note) Contents
EOC Tag = (0000 0000)
EOC Length = (0000 0000)

c) Indefinite form

NOTE – The length may take any of three forms: short, long and indefinite.

FIGURE B.7/Q.763

Format of length field

B.4 Contents

The contents is the substance of the element and contains the information the element is intended to convey. Its length is variable, but always an integral number of octets. The contents is interpreted in a type-dependent manner, i.e. according to the tag value.

References

[1] CCITT Recommendation X.208 *Specification of Abstract Syntax Notation One (ASN.1).*

[2] CCITT *Recommendation X.209 Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1).*

[3] CCITT Recommendation X.219 *Remote Operations: Model, Notation, and Service Definition.*

[4] CCITT Recommendation X.229 *Remote Operations: Protocol specification.*