

ISUP ITU

STATEMENT OF COMPLIANCE

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1 General

1.1 Introduction

This document contains a compliance statement for the Ericsson ITU-T 1999 ISUP module versus ITU-T 1999 rec. Q.761 - Q.764, Q.730 and Q.752, Reference [1] to Reference [6].

The functionality or compliance of the Call Control application is not addressed in this document.

1.2 Concept

The terms that will be used are:

C	Module complies with the specified paragraph in the standard
N	Module does not comply with the specified paragraph in the standard
P	Module complies partly with the specified paragraph in the standard
-	There is nothing to implement in the referred paragraph (used in column “ C”)





2 Compliance List

2.1 Integrated Services Digital Network (ISDN) User Part, ITU - 1999

2.1.1 Q.761, Functional Description of the Integrated Services Digital Network (ISDN) User Part

Table 1 Q.761

References	C	N	P	Comments
1 General			X	Note 1
2 Introduction to ISUP signaling procedures				Title
2.1 Address signaling	X			
2.2 Basic procedures	X			
2.3 Signaling methods			X	Note 3
2.4 Interworking				Title
2.4.1 ISUP interworking	X			
2.4.2 Interworking with other signaling systems or user parts	-			
3 Capabilities supported by the ISUP (Table 1)				Title
Basic call				Title
Speech/3.1 kHz audio	X			
64 kbits/s unrestricted	X			
Multirate connection types (> 64 kbits/s)		X		

Table 1 Q.761

References	C	N	P	Comments
N x 64 kbit/s connection types		X		
En bloc address signaling	X			
Overlap address signaling	X			
Transit network selection	X			
Continuity check	X			
Forward transfer	X			
Suspend and resume	X			
Signaling procedures for connection type allowing fallback capability	X			Note 4
Enhanced echo control signaling procedures		X		Note 38
Simplified echo control signaling procedures			X	Note 4
Automatic repeat attempt			X	Note 2
Blocking and unblocking of circuits and circuit groups	X			
Circuit group query	X			
Dual seizure	X			
Transmission alarm handling for digital inter-exchange circuits		X		
Reset of circuits and circuit groups	X			



Table 1 Q.761

References	C	N	P	Comments
Receipt of unreasonable signaling information	X			
Compatibility procedure	X			Note 5
Simple segmentation	X			
Propagation delay determination procedure	X			Note 4
Tones and announcements	X			Note 4
MTP pause and resume	X			
Access delivery information	X			Note 4
Transportation of User teleservice information	X			Note 4
Temporary trunk blocking			X	Note 15
ISDN User Part signaling congestion control	X			
Automatic congestion control	X			
Interaction between ISUP and INAP		X		
Unequipped circuit identification control	X			
Overlength messages	X			
Temporary Alternative Routing (TAR)			X	Note 4

Table 1 Q.761

References	C	N	P	Comments
Hop counter procedure			X	Note 4
Collect call request procedure			X	Note 4
ISDN user part availability control		X		
Generic signaling procedures for supplementary services (table 2)				Title
Pre-release information transport			X	Note 4
Application transport mechanism			X	Note 4
End-to-end signaling - Pass along method	X			
End-to-end signaling - SCCP Connection Oriented		X		
End-to-end signaling - SCCP Connectionless		X		
Generic number transfer	X			Note 4
Generic digit transfer	X			Note 4
Generic notification procedure	X			Note 4
Simple service activation procedure	X			Note 4
Remote operations procedure	X			Note 4
Network specific procedures	X			Note 4



Table 1 Q.761

References	C	N	P	Comments
Supplementary services				Title
DDI			X	Note 4
MSN			X	Note 4
CLIP/CLIR			X	Note 4
COLP/COLR			X	Note 4
MCID			X	Note 4
Sub-addressing			X	Note 4
Call Forwarding Busy			X	Note 4
Call Forwarding No Reply			X	Note 4
Call Forwarding Unconditional			X	Note 4
Call Deflection			X	Note 4
Explicit Call Transfer		X		
Call Waiting			X	Note 4
Call HOLD			X	Note 4
Completion of Calls to Busy Subscriber			X	Note 4
Completion of Calls on No Reply			X	Note 4
Terminal Portability			X	Note 4
Conference calling			X	Note 4
Three-Party Service			X	Note 4
CUG			X	Note 4
MLPP			X	Note 4
Global Virtual Network Service (GVNS)		X		

Table 1 Q.761

References	C	N	P	Comments
International telecommunication charge card (ITCC)		X		
Reverse charging		X		
UUS, Service 1 (implicit)	X			Note 4
UUS, Service 1 (explicit)	X			Note 4
UUS, Service 2	X			Note 4
UUS, Service 3	X			Note 4 ,Note 6
3.1 Internationally applicable class	X			
3.2 National use class	X			
4 Services assumed from the MTP				Title
4.1 General	X			
4.2 Description of primitives	X			
4.2.1 Transfer	X			
4.2.2 Pause	X			
4.2.3 Resume	X			
4.2.4 Status	X			
5 End-to-end signaling				Title
5.1 General			X	Note 3
5.2 SCCP method of end-to-end signaling		X		
5.3 Pass-along method of end-to-end signaling	X			



Table 1 Q.761

References	C	N	P	Comments
6 Future enhancements and Compatibility procedure	X			
6.1 Version compatibility	X			
6.2 Additional coding guidelines for compatibility of ISDN User Parts				Title
6.2.1 Messages	X			
6.2.2 Parameters	X			Note 5

2.1.2 Q.762, General Function of Messages and Signals

Table 2 Q.762

Reference	C	N	P	Comments
General	-			
2 Signaling messages			X	Note 8 Note 10 Note 14
2.1 Address complete message (ACM)	X			
2.2 Answer message (ANM)	X			
2.3 Blocking message (BLO)	X			
2.4 Blocking acknowledgment message (BLA)	X			
2.5 Call progress message (CPG)	X			Note 43

Table 2 Q.762

Reference	C	N	P	Comments
2.6 Charge information message (CRG)	X			Note 4
2.7 Circuit group blocking message (CGB)	X			
2.8 Circuit group blocking acknowledgement message (CGBA)	X			
2.9 Circuit group reset message (GRS)	X			
2.10 Circuit group reset acknowledgement message (GRA)	X			
2.11 Circuit group unblocking message (CGU)	X			
2.12 Circuit group unblocking acknowledgement message (CGUA)	X			
2.13 Circuit group query message (CQM) (national use)			X	Note 8
2.14 Circuit group query response message (CQR) (national use)			X	Note 8
2.15 Confusion message (CFN)	X			
2.16 Connect message (CON)	X			
2.17 Continuity message (COT)	X			



Table 2 Q.762

Reference	C	N	P	Comments
2.18 Continuity check request message (CCR)	X			
2.19 Facility accepted message (FAA)	X			Note 4 ,Note 37
2.20 Facility message (FAC) (national use)	X			Note 4 ,Note 11
2.21 Facility reject message (FRJ)	X			Note 4 ,Note 37
2.22 Facility request message (FAR)	X			Note 4 Note 12
2.23 Forward transfer message (FOT)			X	Note 10
2.24 Identification request message (IDR)	X			Note 4,Note 11
2.25 Identification response message (IRS)	X			Note 4, Note 11
2.26 Information message (INF) (national use)	X			Note 13
2.27 Information request message (INR) (national use)	X			Note 13
2.28 Initial address message (IAM)	X			
2.29 Loop back acknowledgement message (LPA) (national use)	X			

Table 2 Q.762

Reference	C	N	P	Comments
2.30 Loop Prevention (LOP)		X		
2.31 Network resource management message (NRM)	X			Note 4,Note 11
2.32 Overload message (OLM) (national use)			X	Note 14
2.33 Pass-along message (PAM)	X			
2.34 Release message (REL)	X			
2.35 Release complete message (RLC)	X			
2.36 Reset circuit message (RSC)	X			
2.37 Resume message (RES)	X			
2.38 Segment ation message (SGM)	X			
2.39 Subsequent address message (SAM)	X			
2.40 Suspend message (SUS)	X			
2.41 Unblocking message (UBL)	X			
2.42 Unblocking acknowledgement message (UBA)	X			
2.43 Unequipped circuit identif ication code message (UCIC) (national use)	X			



Table 2 Q.762

Reference	C	N	P	Comments
2.44 User part available message (UPA)	X			
2.45 User part test message (UPT)	X			
2.46 User-to-user information message (USR)	X			Note 4, Note 6
3 Signaling parameters			X	Note 16
3.1 Access delivery information			X	Note 5
3.2 Access transport	X			
3.3 Automatic congestion level	X			
3.4 Backward call indicators	X			
3.5 Backward GVNS			X	Note 5
3.6 Call diversion information	X			
3.7 Call diversion treatment indicators			X	Note 5
3.8 Call history information	X			
3.9 Call offering treatment indicators			X	Note 5
3.10 Call reference	X			
3.11 Call transfer number			X	Note 5
3.12 Call transfer reference			X	Note 5
3.13 Called IN number			X	Note 5

Table 2 Q.762

Reference	C	N	P	Comments
3.14 Called party number	X			
3.15 Calling party number	X			
3.16 Calling party category	X			
3.17 Cause indicators	X			
3.18 CCSS			X	Note5
3.19 Charged party indicator identification			X	Note5
3.20 Circuit assignment map	X			
3.21 Circuit group supervision message type indicator	X			
3.22 Circuit state indicator	X			Note 8
3.23 Closed user group interlock code	X			
3.24 Collect call request			X	Note 4, Note 5
3.25 Conference treatment indicators			X	Note 4, Note 5
3.26 Connected number	X			
3.27 Connection request	X			
3.28 Continuity indicators	X			
3.29 Correlation id			X	Note5
3.30 Display information			X	Note5



Table 2 Q.762

Reference	C	N	P	Comments
3.31 Echo control information	X			
3.32 End of optional parameters	X			
3.33 Event information	X			
3.34 Facility indicator	X			
3.35 Forward call indicators	X			
3.36 Forward GVNS			X	Note5
3.37 Generic digits (national use)	X			
3.38 Generic notification	X			
3.39 Generic number	X			
3.40 Generic reference (reserved)	X			
3.41 Hop counter			X	Note5
3.42 Information indicators	X			
3.43 Information request indicators	X			
3.44 Location number	X			
3.45 Loop prevention indicators		X		
3.46 MCID request indicator	X			
3.47 MCID response indicator	X			

Table 2 Q.762

Reference	C	N	P	Comments
3.48 Message compatibility information	X			
3.49 MLPP precedence	X			
3.50 Nature of connection indicators	X			
3.51 Network management controls			X	Note5
3.52 Network specific facilities (national use)	X			
3.53 Optional backward call indicators	X			
3.54 Optional forward call indicators	X			
3.55 Original called number	X			
3.56 Origination ISC point code	X			
3.57 Parameter compatibility information parameter	X			
3.58 Propagation delay counter	X			
3.59 Range and status	X			
3.60 Redirect capability	X			
3.61 Redirect counter		X		
3.62 Redirecting number	X			
3.63 Redirection information	X			



Table 2 Q.762

Reference	C	N	P	Comments
3.64 Redirection number	X			
3.65 Redirection number restriction indicator	X			
3.66 Remote operations (national use)	X			
3.67 SCF id	X			
3.68 Service activation parameter (national use)	X			
3.69 Signaling point code (national use)	X			
3.70 Subsequent number	X			
3.71 Suspend/Resume indicator	X			
3.72 Transit network selection (national use)	X			
3.73 Transmission medium requirement	X			
3.74 Transmission medium requirement prime	X			
3.75 Transmission medium used	X			
3.76 UID action indicators			X	Note5
3.77 UID capability indicators			X	Note5
3.78 User service information	X			

Table 2 Q.762

Reference	C	N	P	Comments
3.79 User service information prime	X			
3.80 User teleservice information	X			
3.81 User-to-user indicators	X			
3.82 User-to-user information	X			
4 Parameter information				
4.1 Access delivery indicator	X			
4.2 Address presentation restricted indicator	X			
4.3 Address signal	X			
4.4 Binary code	X			
4.5 Call diversion may occur indicator	X			
4.6 Call identity	X			
4.7 Call to be offered indicator		X		
4.8 Call to be offered indicator		X		
4.9 Called party\qs category indicator	X			
4.10 Called party\qs status indicator	X			
4.11 Calling party address request indicator	X			



Table 2 Q.762

Reference	C	N	P	Comments
4.12 Calling party address response indicator	X			
4.13 Calling party\qs category request indicator	X			
4.14 Calling party\qs category response indicator	X			
4.15 Cause value	X			
4.16 CCSS call indicator				
4.17 Charge indicator	X			
4.18 Charge information request indicator (national use)		X		Note 13
4.19 Charge information response indicator (national use)			X	Note 13
4.20 Circuit identification code	X			
4.21 Closed user group call indicator	X			
4.22 Coding standard	X			
4.23 Component ID tag		X		
4.24 Component type	X			
4.25 Component type tag		X		

Table 2 Q.762

Reference	C	N	P	Comments
4.26 Conference acceptance indicator		X		
4.27 Connected line identity request indicator	X			
4.28 Continuity check indicator	X			
4.29 Credit	X			
4.30 Diagnostic	X			
4.31 Discard message indicator	X			
4.32 Discard parameter indicator	X			
4.33 Echo control device indicator	X			
4.34 Encoding scheme	X			
4.35 End-to-end information indicator	X			
4.36 End-to-end method indicator	X			
4.37 Error code	X			
4.38 Event indicator	X			
4.39 Event presentation restricted indicator	X			
4.40 Extension indicator	X			
4.41 GVNS user group identification		X		



Table 2 Q.762

Reference	C	N	P	Comments
4.42 Feature code	X			
4.43 Filler	X			
4.44 Holding indicator (national use)		X		Note 13
4.45 Hold provided indicator (national use)			X	Note 13
4.46 In-band information indicator	X			
4.47 Incoming half echo control device request indicator	X			
4.48 Incoming echo control device response indicator	X			
4.49 Instruction indicator	X			
4.50 Internal network number	X			
4.51 Interworking indicator	X			
4.52 Invoke ID (national use)	X			
4.53 ISDN access indicator	X			
4.54 ISDN user part indicator	X			
4.55 ISDN user part preference indicator	X			
4.56 Length (of each component or of an information element)	X			

Table 2 Q.762

Reference	C	N	P	Comments
4.57 Linked ID (national use)	X			
4.58 Local reference	X			
4.59 Location	X			
4.60 Look for busy (LFB)	X			
4.61 MLPP service domain	X			
4.62 MLPP user indicator	X			
4.63 More instructions indicator	X			
4.64 National/international call indicator	X			
4.65 Nature of address indicator	X			
4.66 Network discard indicator	X			
4.67 Network identification plan (national use)	X			
4.68 Network identification (national use)	X			
4.69 Network identity (national use)	X			
4.70 Network specific facilities indicator (national use)	X			
4.71 Notification indicator	X			
4.72 Notification subscription option	X			



Table 2 Q.762

Reference	C	N	P	Comments
4.73 Nth upgraded parameter name		X		
4.74 Number incomplete indicator	X			
4.75 Numbering plan indicator	X			
4.76 Number qualifier indicator	X			
4.77 Odd/even indicator	X			
4.78 Operation code	X			
4.79 Original redirection reason	X			
4.80 Originating participating service provider indicator		X		
4.81 Outgoing echo control device request indicator	X			
4.82 Outgoing echo control device information indicator	X			
4.83 Parameter tag		X		
4.84 Pass on not possible indicator	X			
4.85 Precedence level	X			
4.86 Problem code	X			
4.87 Protocol class	X			

Table 2 Q.762

Reference	C	N	P	Comments
4.88 Protocol profile	X			
4.89 Protocol control indicator	X			
4.90 Range	X			
4.91 Redirecting indicator	X			
4.92 Redirecting reason	X			
4.93 Redirection counter	X			
4.94 Redirection possible indicator	X			
4.95 Release call indicator	X			
4.96 Routing label	X			
4.97 Satellite indicator	X			
4.98 SCCP method indicator	X			
4.99 Screening indicator	X			
4.100 Send notification indicator	X			
4.101 Sequence (national use)	X			
4.102 Set (national use)	X			
4.103 Signaling point code (national use)	X			
4.104 Simple segmentation indicator	X			



Table 2 Q.762

Reference	C	N	P	Comments
4.105 Solicited information indicator	X			
4.106 Status	X			
4.107 T9 timer indicator		X		
4.108 T9 timer instruction indicator		X		
4.109 Temporary alternative routing indicator		X		
4.110 Terminating access indicator		X		
4.111 Terminating network routing number		X		
4.112 Through connection indicator		X		
4.113 Through connection instruction indicator		X		
4.114 Transit at intermediate exchange indicator	X			
4.115 Type	X			
4.116 Type of digits (national use)	X			
4.117 Type of network identification (national use)	X			

2.1.3 Q.763, Formats and Codes

Table 3 Q.763

References	C	N	P	Comments
1 General	X			
1.1 Routing label	X			
1.2 Circuit identification code	X			
1.3 Message type code	X			
1.4 Formatting principles	X			
1.5 Mandatory fixed part	X			
1.6 Mandatory variable part	X			
1.7 Optional part	X			
1.8 End of optional parameters octet	X			
1.9 Order of transmission	X			
1.10 Coding of spare bits	X			
1.11 National message types and parameters			X	Note 16
1.12 Rules for the allocation of message types codes and parameter name codes	X			
1.13 Meaning of “ spare” codes and “ reserved” codes	X			
2 Parameter formats and codes				Title



Table 3 Q.763

References	C	N	P	Comments
2.1 Message type codes			X	Note 7, Note 8, Note 11
2.2 Coding of the length indicator	X			
2.3 Coding of the pointers	X			
3 ISDN User Part parameters				Title
3.1 Parameter names			X	Note 15
3.2 Access delivery information (open)	X			
3.3 Access transport	X			
3.4 Automatic congestion level	X			
3.5 Backward call indicators	X			
3.6 Call diversion information	X			
3.7 Call history information	X			
3.8 Call reference	X			
3.9 Called party number	X			
3.10 Calling party number	X			
3.11 Calling party\qs category	X			
3.12 Cause indicators	X			
3.13 Circuit group supervision message type indicator	X			

Table 3 Q.763

References	C	N	P	Comments
3.14 Circuit state indicator	X			
3.15 Closed user group interlock code	X			
3.16 Connected number	X			
3.17 Connection request (open)	X			
3.18 Continuity indicators	X			
3.19 Echo control information	X			
3.20 End of optional parameters indicator	X			
3.21 Event information	X			
3.22 Facility indicator	X			
3.23 Forward call indicator	X			
3.24 Generic digits	X			
3.25 Generic notification indicator	X			
3.26 Generic number	X			
3.27 Generic reference (reserved)	X			
3.28 Information indicators	X			
3.29 Information request indicators	X			



Table 3 Q.763

References	C	N	P	Comments
3.30 Location number	X			
3.31 MCID request indicators	X			
3.32 MCID response indicators	X			
3.33 Message compatibility information	X			
3.34 MLPP precedence	X			
3.35 Nature of connection indicators	X			
3.36 Network specific facility	X			
3.37 Optional backward call indicators	X			
3.38 Optional forward call indicators	X			
3.39 Original called number	X			
3.40 Origination ISC point code	X			
3.41 Parameter compatibility information	X			
3.42 Propagation delay counter	X			
3.43 Range and status	X			
3.44 Redirecting number	X			
3.45 Redirection information	X			

Table 3 Q.763

References	C	N	P	Comments
3.46 Redirection number	X			
3.47 Redirection number restriction parameter	X			
3.48 Remote operations	X			
3.49 Service activation	X			
3.50 Signaling point code	X			
3.51 Subsequent number	X			
3.52 Suspend/resume indicators	X			
3.53 Transit network selection	X			
3.54 Transmission medium requirement	X			
3.55 Transmission medium requirement prime	X			
3.56 Transmission medium used	X			
3.57 User service information	X			
3.58 User service information prime	X			
3.59 User teleservice information	X			
3.60 User-to-user indicators	X			
3.61 User-to-user information	X			



Table 3 Q.763

References	C	N	P	Comments
3.62 Backward GVNS			X	Note5
3.63 CCSS			X	Note5
3.64 Call transfer number			X	Note5
3.65 Call transfer reference			X	Note5
3.66 Forward GVNS			X	Note5
3.67 Loop prevention indicators		X		
3.68 Network management controls			X	Note5
3.69 Circuit assignment map	X			
3.70 Correlation id			X	Note5
3.71 SCF id		X		
3.72 Call diversion treatment indicators			X	Note5
3.73 Called IN number			X	Note5
3.74 Call offering treatment indicators		X		
3.75 Charged party identification (national use)			X	Note5
3.76 Conference treatment indicators			X	Note5
3.77 Display information			X	Note5
3.78 UID action indicators			X	Note5

Table 3 Q.763

References	C	N	P	Comments
3.79 UID capability indicators			X	Note5
3.80 Hop counter			X	Note5
3.81 Collect call request			X	Note5
3.82 CCNR possible indicator			X	Note5
3.83 Application Transport Parameter (APP)			X	Note5
3.87 Called Directory Number			X	Note5
3.88 Calling Geodetic Location			X	Note5
3.89 HTR Information			X	Note5
3.90 Network Routing Number			X	Note5
3.91 Number Portability Forward Information			X	Note5
3.92 Original Called IN Number			X	Note5
3.93 Pivot Capability			X	Note5
3.94 Pivot Routing Backward Information			X	Note5
3.95 Pivot Routing Forward Information			X	Note5
3.96 Pivot Routing Indicator			X	Note5
3.97 Pivot Status			X	Note5



Table 3 Q.763

References	C	N	P	Comments
3.98 Query On Release Capability			X	Note5
3.99 Redirect Backward Information			X	Note5
3.100 Redirect Capability			X	Note5
3.101 Redirect Counter			X	Note5
3.102 Redirect Forward Information			X	Note5
3.103 Redirect Status			X	Note5
4 ISDN user part messages and codes			X	Note 7,Note 8,Note 11
Annex A				Title
Interpretation of spare codes				Note 15
Tables for handling of unrecognized parameter values			X	Note 15
Type A exchanges			X	Note 22
Type B exchanges		X		Note 22
Annex B				Title
General description of component encoding rules	X			Note 4

2.1.4 Q.764, Signaling Procedures

Table 4 Q.764

References	C	N	P	N relev	Comments
1 General	X				
2 Basic call control and signaling procedures			X		Note 17,Note 18,Note 41
2.1 Successful call set-up	X				
2.1.1 Forward address signaling - En bloc operation			X		Note 4
2.1.1.1 Actions required at the originating exchange	X				
2.1.1.2 Actions required at an intermediate national exchange		X			
2.1.1.3 Actions required at an outgoing international exchange		X			
2.1.1.4 Actions required at an intermediate international exchange		X			
2.1.1.5 Actions required at an incoming international exchange		X			



Table 4 Q.764

References	C	N	P	N relev	Comments
2.1.1.6 Actions required at the destination exchange	X				
2.1.1.7 Called party number for operator calls		X			
2.1.1.7.1 International transit operator call		X			
2.1.1.7.2 International terminal operator call		X			
2.1.1.8 Called party number for calls to testing and measuring devices	X				
2.1.2 Forward address signaling - Overlap operation			X		Note 18
2.1.2.1 Actions required at the originating exchange	X				
2.1.2.2 Actions required at an intermediate national exchange		X			
2.1.2.3 Actions required at an outgoing international exchange		X			

Table 4 Q.764

References	C	N	P	N relev	Comments
2.1.2.4 Actions required at an intermediate international exchange		X			
2.1.2.5 Action s required at an incoming international exchange		X			
2.1.2.6 Actions required at the destination exchange	X				
2.1.2.7 Called party number for operator calls		X			
2.1.2.8 Called party number for calls to testing and measuring devices	X				
2.1.3 Calling party number	X				
2.1.4 Address complete message or connect message			X		Note 18
2.1.4.1 Actions required at the destination exchange	X				



Table 4 Q.764

References	C	N	P	N relev	Comments
2.1.4.2 Actions required at an intermediate national exchange		X			
2.1.4.3 Action s required at an outgoing international exchange		X			
2.1.4.4 Actions required at an intermediate international exchange		X			
2.1.4.5 Action s required at an incoming international exchange		X			
2.1.4.6 Action s required at the originating exchange	X				
2.1.4.7 Throu gh-connection and awaiting answer indi cation at the destination exchange	X				Note 19
2.1.4.8 Return of address complete message in interworking situations		X			
2.1.4.9 Acce ss delivery indication	X				Note 19

Table 4 Q.764

References	C	N	P	N relev	Comments
2.1.5 Call progress (basic call)			X		Note 36, Note 41
2.1.5.1 Actions required at the destination exchange	X				
2.1.5.2 Actions required at an intermediate national, outgoing international, intermediate international and incoming international exchange		X			
2.1.5.3 Actions required at the originating exchange	X				
2.1.6 Information messages			X		Note 13, Note 20
2.1.6.1 Requesting information	X				
2.1.6.2 Sending solicited information	X				
2.1.6.3 Receiving solicited information message	X				
2.1.7 Answer message			X		Note 18
2.1.7.1 Actions required at the destination exchange	X				



Table 4 Q.764

References	C	N	P	N relev	Comments
2.1.7.2 Actions required at an intermediate national exchange		X			
2.1.7.3 Action s required at an outgoing international exchange		X			
2.1.7.4 Actions required at an intermediate international exchange		X			
2.1.7.5 Action s required at an incoming international exchange		X			
2.1.7.6 Action s required at the originating exchange	X				
2.1.7.7 Return of answer from automatic terminals	X				
2.1.8 Continui ty-check	X				
2.1.9 Chargin g			X		Note 4
2.1.10 Forw ard transfer message			X		Note 10
2.1.11 Transit network selection (national use)			X		Note 4

Table 4 Q.764

References	C	N	P	N relev	Comments
2.1.12 Simple segmentation	X				
2.1.12.1 Interworking with Q.767 and Blue Book (1988 version) ISDN-User Parts	X				
2.1.13 Procedure for Nx64 kbit/s Connection type.		X			Note 17
2.2 Unsuccessful call set-up			X		Note 18
2.2.1 Actions at exchange initiating a release message	X				
2.2.2 Actions at intermediate exchange		X			
2.2.3 Actions at the controlling exchange (i.e. the exchange controlling the call)	X				
2.2.4 Tones and announcements	X				Note 4
2.2.5 Address incomplete	X				
2.3 Normal call release			X		Note 18
2.3.1 Release initiated by a calling party	X				



Table 4 Q.764

References	C	N	P	N relev	Comments
2.3.2 Release initiated by a called party	X				
2.3.3 Release initiated by the network	X				
2.3.4 Storage and release of IAM information	X				
2.3.5 Pre-release information transport			X		Note 4
2.4 Suspend, resume			X		Note 18
2.4.1 Suspend	X				
2.4.2 Resume	X				
2.4.3 Expiration of timer (T6) or timer (T38)	X				
2.5 Signaling procedures for connection type allowing fallback			X		Note 4, Note 18
2.6 Propagation delay determination procedure			X		Note 4, Note 18
2.7 Echo control signaling procedures			X		Note 4, Note 18, Note 38
2.8 Network features			X		Note 2
2.8.1 Automatic repeat attempt			X		Note 2

Table 4 Q.764

References	C	N	P	N relev	Comments
2.8.2 Blocking and unblocking of circuits and circuit groups	X				
2.8.2.1 Other actions on receipt of a blocking message	X				
2.8.2.2 Circuit group blocking and unblocking messages	X				
2.8.2.3 Abnormal blocking and circuit group blocking procedures	X				
2.8.3 Circuit group query (national use)					Title
2.8.3.1 General			X		Note 8
2.8.3.2 Interpretation of circuit states			X		Note 8
2.9 Abnormal conditions			X		Note 21
2.9.1 Dual seizure	X				
2.9.1.1 Unguarded interval	X				
2.9.1.2 Detection of dual seizure	X				



Table 4 Q.764

References	C	N	P	N relev	Comments
2.9.1.3 Preventive action			X		Note 21
2.9.1.4 Action to be taken on detection of dual seizures	X				
2.9.2 Transm ission alarm handling for digital inte r-exchange circuits		X			
2.9.3 Reset of circuits and circuit groups	X				
2.9.3.1 Reset circuit message	X				
2.9.3.2 Circuit group reset message	X				
2.9.3.3 Abno rmal circuit group reset message procedures	X				
2.9.4 Failure in the blockin g/unblocking sequence	X				
2.9.5 Receipt of unreasona ble signaling information messages			X		Note 42
2.9.5.1 Handling of unexpected messages			X		Note 36, Note 39

Table 4 Q.764

References	C	N	P	N relev	Comments
2.9.5.2 General requirements on receipt of unrecognized signaling information messages and parameters			X		Note 22, Note 40 Note 42 Note 9
2.9.5.3 Procedures for the handling of the unrecognized messages or parameters			X		Note 22, Note 40
2.9.5.3.1 Unrecognized messages			X		Note 22
2.9.5.3.2 Unrecognized parameters			X		Note 5, Note 15, Note 22
2.9.5.3.3 Unrecognized parameter values			X		Note 5, Note 15
2.9.5.4 Procedures for the handling of responses indicating unrecognized information has been sent					Title
2.9.5.4.1 Type A exchanges			X		Note 4, Note 22
2.9.5.4.2 Type B exchanges		X			Note 22
2.9.5.5 Procedures for handling unreasonable information	X				Note 4



Table 4 Q.764

References	C	N	P	N relev	Comments
2.9.6 Failure to receive a "release complete" message - Timer T1 and T5	X				
2.9.7 Failure to receive a response to an information request message	X				
2.9.8 Other failure conditions					Title
2.9.8.1 Inability to release in response to a release message	X				
2.9.8.2 Call-failure	X				
2.9.8.3 Abnormal release conditions	X				
2.9.9 Temporary trunk blocking (TTB) (national use)			X		Note 14
2.9.9.1 Procedures	X				
2.10 ISDN User Part signaling congestion control	X				
2.10.1 General	X				
2.10.2 Procedures	X				

Table 4 Q.764

References	C	N	P	N relev	Comments
2.11 Automatic congestion control	X				Note 23
2.11.1 Receipt of a release message containing an automatic congestion level parameter	X				
2.11.2 Actions taken during overload	X				
2.12 Unequipped circuit identification code message (national use)	X				
2.13 ISDN User Part availability control	X				
2.13.1 General	X				
2.13.2 Procedures	X				
2.14 MTP Pause/Resume	X				
2.15 Overlength messages	X				
2.16 Support for Temporary Alternative Routing (TAR)			X		Note 4
2.17 Hop counter procedure			X		Note 4



Table 4 Q.764

References	C	N	P	N relev	Comments
2.17.1 Actions at the initiating exchange			X		Note 4
2.17.2 Actions at an intermediate exchange		X			
2.17.3 Actions at the destination local exchange			X		Note 4
2.18 Call collect request procedure			X		Note 4
2.19 Support for hard to reach network management functions			X		Note 4
2.20 Calling geodetic location procedure			X		Note 4
Annex A			X		Note 24
Annex B	X				
Annex C			X		Note 4, Note 22, Note 38
Annex D			X		Note 4, Note 22
Annex E			X		Note 4
Annex F	X				
Annex G	X				

2.1.5 Q.730 ISDN Supplementary Services

Table 5 Q.730

References	C	N	P	Comments
1 General	-			

Table 5 Q.730

References	C	N	P	Comments
1.1 Exceeding the maximum message length	X			
1.2 Network specific facilities (national option)	X			Note 4
1.2.1 Sending unsolicited information (national use)	X			Note 25
1.3 Generic procedures				Title
1.3.1 Service activation (national use)				Title
1.3.1.1 General description	X			Note 4
1.3.1.2 Service activation procedure			X	Note 4, Note11
1.3.1.3 Error procedures	X			
1.3.2 General digit transfer (national use)	X			
1.3.3 Remote operations service (ROSE) (national use)				Title
1.3.3.1 General description	X			Note 4, Note11
1.3.3.2 Remote operations procedure in ISDN user part	X			Note 4, Note11
1.3.3.3 Error performance	X			Note 4, Note11
1.3.4 Generic notification procedure	X			Note 4



Table 5 Q.730

References	C	N	P	Comments
1.3.5 Generic number transfer	X			Note 4
1.4 End-to-end signaling			X	Title
1.4.1 Introduction			X	Note 3
1.4.2 Pass-along method (national use)	X			
1.4.3 SCCP method		X		
1.4.4 Chaining of ISDN user part end-to-end signaling connections		X		
1.4.5 Use of the protocol control indicator (PCI)	X			Note 4
1.4.6 Operation of the pass-along method (national use)	X			
1.4.7 Operation of the SCCP method - Connectionless services (national use)		X		
1.4.8 Operation of the SCCP method - Connection-oriented service		X		
1.4.9 Interface elements between ISDN user part and SCCP (embedded transfer)		X		
1.5 Layout of service Recommendations	-			Note 4, Note 26

Table 5 Q.730

References	C	N	P	Comments
1.6 List of supplementary services	-			Note 4, Note 26
1.7 Association of supplementary services to bearer services and teleservices	-			Note 4, Note 26
1.8 Definition of supplementary services	-			Note 4, Note 26
Appendix I	-			Note 4, Note 26

2.2 Monitoring and Measurements for SS7 Networks, ITU Q.752 - 1999

Table 6 Q.752

References	C	N	P	Comments
1 Introduction	-			
1.1 General	-			
1.1.1 <no heading\>	X			
1.1.2 <no heading\>		X		
1.2 Network view	-			
1.2.1 <no heading\>	-			
1.3 Guidelines for uses of measurements	-			
1.3.1 <no heading\>	-			
1.4 Grouping of measurements	-			
1.4.1 <no heading\>			X	Note 27
1.4.2 <no heading\>			X	Note 27



Table 6 Q.752

References	C	N	P	Comments
1.5 Collection of measurements				
1.6 Definition of terms	-			
1.6.1 fault (F)			X	Note 28
1.6.2 configuration (C)	X			
1.6.3 performance (P)	X			
1.6.4 accounting (A)	-			
1.6.5 network planning and administration (N)	X			
1.6.6 near real time measurements (R)	X			
1.7 Listing of measurements	-			
1.7.1 General	-			
1.7.1.1 <no heading>	-			
1.7.1.2 <no heading>	X			
1.7.1.3 <no heading>			X	Note 29
1.7.1.4 <no heading>	X			
1.7.1.5 <no heading>	X			
1.7.1.6 <no heading>		X		Note 29
1.7.1.7 <no heading>		X		Note 29
1.7.2 Intervals for measurements		X		Note 29

Table 6 Q.752

References	C	N	P	Comments
2 MTP monitoring and measurements	-			
3 SCCP monitoring and measurements	-			
4 ISDN-UP monitoring and measurements	-			
4.1 General	X			
4.2 Table 10				
4.2.1 <no heading\>	-			
4.2.2 <no heading\>	-			
4.2.3 <no heading\>	-			
4.2.4 <no heading\>	-			
4.2.5 <no heading\>	-			
4.3 Table 11				
4.3.1 <no heading\>	-			
4.4 Table 12				
4.4.1 <no heading\>	-			
4.4.2 <no heading\>	-			
4.4.3 <no heading\>	-			
4.4.4 <no heading\>	-			
4.4.5 <no heading\>	-			
4.4.6 <no heading\>	-			



Table 6 Q.752

References	C	N	P	Comments
5 TC monitoring and measurements	-			
6 Uses of measurements	-			
6.1 Introduction	-			
6.2 Message transfer part (MTP)	-			
6.3 Signaling connection control part (SCCP)	-			
6.3.1 SCCP fault management	-			
6.3.1.1 Routing failures	X			
6.3.1.2 SCCP unavailability		X		
6.3.2 SCCP configuration management		X		Note 7
6.3.3 SCCP performance	-			
6.3.3.1 Utilization			X	Note 1
6.3.3.2 SCCP Quality of Service			X	Note 1
6.4 Integrated services digital network user part (ISDN-UP)	-			
6.5 Transaction Capabilities (TC)	-			
6.6 Preparation of traffic forecasts	-			
6.7 Network planning	-			

Table 6 Q.752

References	C	N	P	Comments
6.8 Evaluation of maintenance force effectiveness	-			
Table 1 MTP Signaling Link Faults and Performance	-			
Table 2 MTP Signaling Link Availability	-			
Table 3 MTP Signaling Link Utilization	-			
Table 4 MTP Signaling Link Set and Route Set Availability	-			
Table 5 MTP Signaling Point Status	-			
Table 6 MTP Signaling Traffic Distribution (Signaling Route Utilization)	-			
Table 7 SCCP Error Performance	-			
Table 8 SCCP Subsystem Availability	-			
Table 9 SCCP Utilization	-			
Table 10 ISDN User Part Availability	-			
Table 10.1 Start of local ISDN UP unavailable - failure			X	Note 30



Table 6 Q.752

References	C	N	P	Comments
Table 10.2 Start of local ISDN User Part unavailable - busy			X	Note 30
Table 10.3 ISDN User Part available			X	Note 30
Table 10.4 Total duration of ISDN UP unavailable			X	Note 30
Table 10.5 Start of local ISDN User Part congestion			X	Note 30
Table 10.6 Stop of local ISDN User Part congestion		X		
Table 10.7 Duration of local ISDN User Part congestion		X		
Table 10.8 Start of remote ISDN User Part unavailable		X		Note 31
Table 10.9 Stop of remote ISDN User Part unavailable		X		Note 31
Table 10.10 Duration remote of ISDN UP unavailable		X		Note 31
Table 10.11 Start of remote ISDN User Part congestion		X		Note 31

Table 6 Q.752

References	C	N	P	Comments
Table 10.12 Stop of remote ISDN User Part congestion		X		Note 31
Table 10.13 Duration of remote ISDN User Part congestion		X		Note 31
Table 11 ISDN User Part Utilization	-			
Table 11.1 Total ISDN UP messages sent			X	Note 32
Table 11.2 Total ISDN UP messages received			X	Note 32
Table 12 ISDN User Part errors				Title
Table 12.1 No ack for cct reset within T17			X	Note 33
Table 12.2 No GRA received for GRS within T23			X	Note 33
Table 12.3 -	-			
Table 12.4 -	-			
Table 12.5 RLC not received within T5	X			
Table 12.6 Release initiated due to abnormal conditions		X		
Table 12.7 Circuit BLO (excessive errors detected by CRC)		X		



Table 6 Q.752

References	C	N	P	Comments
Table 12.8 Missing blocking ack in CGBA for previous CGB	X			
Table 12.9 Miss ing unblocking ack in CGUA for previous CGU	X			
Table 12.10 Abnormal blocking ack in CGBA for previous CGB	X			
Table 12.11 Abnormal unblocking ack in CGUA for previous CGU	X			
Table 12.12 Unexpected CGBA with abnormal blocking ack	X			
Table 12.13 Unexpected CGUA with abnormal unblocking ack	X			
Table 12.14 Unexpected BLA with abnormal blocking ack	X			
Table 12.15 Unexpected UBA with abnormal unblocking ack	X			
Table 12.16 No BLA received for BLO within T13			X	Note 34
Table 12.17 No UBA received for UBL within T15			X	Note 34

Table 6 Q.752

References	C	N	P	Comments
Table 12.18 No CGBA received for CGB within T19			X	Note 34
Table 12.19 No CGUA received for CGU within T21			X	Note 34
Table 12.20 Message format error			X	Note 35
Table 12.21 Unexpected message rxcvd.			X	Note 35
Table 12.22 Release due to unrecognised info.		X		
Table 12.23 Inability to release a circuit		X		
Table 13 Local TC Utilization	-			
Table 14 TC Fault Measurements	-			



3 Notes and Comments

Note 1	1. Using Signaling Connection Control Part (SCCP) as a service provider is not supported
Note 2	Automatic repeat attempt on continuity check failure is not supported.
Note 3	The Pass-along end-to-end signaling method is supported, but not the SCCP method.
Note 4	Procedures necessary to fully support this function/service is the responsibility of the Call Control application.
Note 5	Messages and parameters involved are transparently handled by this ISUP.
Note 6	Compatibility information regarding parameters is handled by Call Control.
Note 7	The USR message is allowed during all states of a call, even though the Facility request message will always be answered with Facility reject.
Note 8	A received CQR is correctly answered with a CQM. This ISUP never sends CQR.
Note 9	CMC, CMRJ and CMR are not supported, and will cause a Confusion message(CFN) to be sent.
Note 10	A received DRS will be either be treated like a normal REL, or answered with a CFN message. This ISUP never sends DRS.
Note 11	FOT can be sent by this ISUP, but discarded if received.
Note 12	FAC, IDR, IRS and NRM are either passed transparently to Call Control, or handled according to supplied compatibility information.
Note 13	Can be sent or received by this ISUP if configured as National message. Can be answered with FRJ without the delivering to the Call Control if configured.
Note 14	INR can be used only to request the Calling party number. Other indicators are always ignored. The Call control application is not engaged.

- Note 15** OLM message used in Temporary Trunk Blocking is never sent by this ISUP.
- Note 16** All parameters and indicators are handled by this ISUP module or passed transparently to/from the Call Control application, except those contained in unsupported messages.
- Note 17** National messages are, if defined in the ISUP module configuration file, passed transparently to/from the Call control application. National parameters are always passed transparently.
- Note 18** Multirate and Nx64kbit/s connection types are not supported.
- Note 19** Only action at the national originating and destination exchange is supported.
- Note 20** Depends on the functionality of the Call control application above ISUP.
- Note 21** This ISUP can be configured to send an INR when `Calling party number` is missing in the received IAM. The call will be held until an INF is received or timer T33 expires.
- Note 22** Additional methods are available.
- Note 23** Gateway exchange and Transit exchange roles are not supported.
- Note 24** An incoming ACC parameter is handled by this ISUP.
- Note 25** Load control may be applied by the Call control application and/or the Management function, in which case the ACC parameter will be included in outgoing Release messages.
- Note 26** The time-out values are defined in the configuration file
- Note 27** An unsolicited INF will be passed transparently to the Call control application.
- Note 28** Recommendations Q.731-Q.737 are not addressed in this document, since they describe functionality only applicable to a Call control application.
- Note 29** ISUP support most of the definition rules of the groups, but has not grouped them together.



- Note 30** Every fault or measurement is reported on occurrence instead of the first occurrence and then the number of occurrences in some interval.
- Note 31** Timestamps on events reported on occurrence are not supported by the ISUP module.
- Note 32** Unavailability measurements are architecturally dependent and are optional in the ITU standard. An indication of the module availability is reported.
- Note 33** Remote measurements are only necessary at gateway signaling points.
- Note 34** Measurements are not provided periodically but can be retrieved on-demand by an external management application.
- Note 35** Timeout of individual and group circuit reset (T17 and T23) is a combined measurement - no individual measure is available.
- Note 36** No distinction is made between individual and group circuit blocking therefore a combined measurement is used. i.e. T19 and T21 are used instead of T13 and T15.
- Note 37** A number of individual alarms are raised on unexpected and incorrectly formatted errors. These can be combined by an external management agent to obtain a single alarm where required.
- Note 38** If CPG message is received before reception of ACM message (unexpected CPG) during outgoing call setup phase it is configurable to release the call in this situation or not.
- Note 39** Can be sent or received by ISUP if configured as National message only. Otherwise will be discarded
- Note 40** Enhanced echo control signaling procedures are not supported.
- Note 41** If the circuit is seized by a call, and unexpected message is received before receipt of a backward message required for the call set-up, Reset Circuit Message is not sent.
- Note 42** ISUP on receipt of unrecognized messages and/or parameters does not include diagnostic field, dependent on the cause value, containing the message type code and/or parameter name(s).



Note 43

If CPG message is received before reception of ACM message (unexpected CPG) during outgoing call setup phase then the call will not be released. CPG also can not be sent before answer for outgoing call and discarded if received before answer for incoming calls.



Reference List

ITU Standard rec.

- [1] *Functional Description of the Integrated Services Digital Network (ISDN) User Part of Signaling System No. 7 (SS7), Q.761-1999.*
- [2] *Integrated Services Digital Network (ISDN) User Part of Signaling System No. 7 (SS7). General Function of Messages and Signals, Q.762-1999.*
- [3] *Integrated Services Digital Network (ISDN) User Part of Signaling System No. 7 (SS7). Formats and Codes, Q.763-1999.*
- [4] *Integrated Services Digital Network (ISDN) User Part of Signaling System No. 7 (SS7). Signaling Procedures, Q.764-1999.*
- [5] *ISDN Supplementary Services, Q.730-1999.*
- [6] *Monitoring and Measurements for Signaling System No 7 Networks, ITU Q.752 - 1999.*