

# ISUP ITU

## ETSI 2001

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### STATEMENT OF COMPLIANCE

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# 1 General

## 1.1 Introduction

This document describes how Ericsson SS7 ISUP ITU complies with the ETSI 2001 recommendations specified in ETSI ref[7] - ETSI ref[2]. For reasons of clarity, compliance with the ITU-T (09/99) recommendations detailed in references Reference [1] - Reference [6] (upon which specification [ETSI ref[7]] to [ETSI ref[30]] are based) is also described. The tables contain compliances with the ETSI based on the ITU standards.

## 1.2 Concept

The terms that will be used are:

<b>C</b>	Module complies with the specified paragraph in the standard.
<b>N</b>	Module does not comply with the specified paragraph in the standard.
<b>P</b>	Module complies partly with the specified paragraph in the standard. Specify in a note what in the module that does comply and what that does not.
<b>-</b>	There is nothing to implement in the referred paragraph (used in column "C").





## 2 Compliance Lists

### 2.1 Integrated Services Digital Network (ISDN) User Part, ETSI- 2001

#### 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
<b>1 General</b>			X	Note 1 Page 65
<b>2 Introduction to ISUP signalling procedures</b>				Title
2.1 Address signalling			X	Note 2 Page 65
2.2 Basic procedures	X			
2.3 Signalling methods			X	Note 3 Page 65
2.4 Interworking				Title
2.4.1 ISUP interworking	X			
2.4.2 Interworking with other signalling systems or user parts	-			
<b>3 Capabilities supported by the ISUP</b> (Table 1)				Title
Basic call				Title
Speech/3.1 kHz audio	X			
64 kbits/s unrestricted	X			

Table 1 Q.761

References	C	N	P	Comments
Multirate connection types ( > 64 kbits/s)		X		
N x 64 kbit/s connection types	X			
En bloc address signalling	X			
Overlap address signalling	X			
Transit network selection	X			
Continuity check	X			
Forward transfer	X			
Signalling procedures for connection type allowing fallback capability	X			Note 4 Page 65
Compatibility procedure	X			Note 5 Page 65
Simple segmentation	X			
Tones and announcements	X			Note 4 Page 65
Propagation delay determination procedure	X			Note 4 Page 65
Enhanced echo control signalling procedures		X		
Simplified echo control signalling procedures		X		
Automatic repeat attempt	X			
Blocking and unblocking of circuits and circuit groups	X			





Table 1 Q.761

References	C	N	P	Comments
Circuit group query	X			
Dual seizure	X			
Transmission alarm handling for digital inter-exchange circuits		X		
Reset of circuits and circuit groups	X			
Receipt of unreasonable signalling information	X			
Access delivery information	X			Note 4 Page 65
Transportation of User teleservice information	X			Note 4 Page 65
Suspend and resume	X			
Temporary trunk blocking		X		
ISDN User Part signalling congestion control	X			
Automatic congestion control	X			
Interaction between ISUP and INAP		X		
Unequipped circuit identification control	X			
ISDN user part availability control		X		

Table 1 Q.761

References	C	N	P	Comments
MTP pause and resume	X			
Overlength messages	X			
Temporary Alternative Routing (TAR)		X		
Hop counter procedure			X	Note4
Collect call request procedure			X	Note4
ISDN user part availability control		X		
Generic signalling procedures for supplementary services				Title
End-to-end signalling - Pass along method	X			
End-to-end signalling - SCCP Connection Oriented		X		
End-to-end signalling - SCCP Connectionless		X		
Generic number transfer	X			Note 4 Page 65
Generic digit transfer	X			Note 4 Page 65
Generic notification procedure	X			Note 4 Page 65
Service activation	X			Note 4 Page 65
Simple service activation procedure	-			Note 4 Page 65



Table 1 Q.761

References	C	N	P	Comments
Remote operations procedure	X			Note 4 Page 65
Network specific procedures	X			Note 4 Page 65
Pre-release information transport		X		
Supplementary services				Title
DDI	X			Note 4 Page 65
MSN	X			Note 4 Page 65
CLIP/CLIR	X			Note 4 Page 65
COLP/COLR	X			Note 4 Page 65
MCID	X			Note 4 Page 65
Sub-addressing	X			Note 4 Page 65
Terminal portability	X			Note 4 Page 65
Call forwarding	X			Note 4 Page 65
Call deflection	X			Note 4 Page 65
Explicit Call Transfer		X		
Call waiting	X			Note 4 Page 65
Call hold	X			Note 4 Page 65
Completion of Calls to Busy Subscriber		X		
Conference calling	X			Note 4 Page 65
Three party service	X			Note 4 Page 65
CUG	X			Note 4 Page 65
MLPP	X			Note 4 Page 65
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 Page 65
UUS, Service 1 (explicit)	X			Note 4 Page 65
UUS, Service 2	X			Note 4 Page 65
UUS, Service 3	X			Note 4 Page 65 Note 6 Page 65
CCNR		X		
MWI		X		
APM		X		
VPN		X		
3.1 Internationally applicable class	X			
3.2 National use class	X			
<b>4 Services assumed from the MTP</b>				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			
<b>5 End-to-end signalling</b>				Title
5.1 General			X	Note 3



Table 1 Q.761

References	C	N	P	Comments
5.2 SCCP method of end-to-end signalling		X		
5.3 Pass-along method of end-to-end signalling	X			
<b>6 Future enhancements and Compatibility procedure</b>	X			
6.1 Version compatibility	X			Note 3 Page 65
6.2 Additional coding guidelines for compatibility of ISDN User Parts				Title
6.2.1 Messages	X			
6.2.2 Parameters	X			Note 5 Page 65

## 2.1.2 Q.762, General Function of Messages and Signals

Table 2 Q.762

Reference	C	N	P	Comments
General	-			
<b>2 Signalling messages</b>			X	Note 8 Note 9 Note 13
2.1 Address complete message (ACM)	X			
2.2 Answer message (ANM)	X			
2.2A Application transport (APM)		X		

Table 2 Q.762

Reference	C	N	P	Comments
2.3 Blocking message(BLO)	X			
2.4 Blocking acknowledge ment message (BLA)	X			
2.5 Call progress message (CPG)	X			
2.6 Charge information message (CRG)	X			Note 4 Page 65
2.7 Circuit group blocking message (CGB)	X			
2.8 Circuit group blocking acknowledgem ent message (CGBA)	X			
2.9 Circuit group reset message (GRS)	X			
2.10 Circuit group reset ackn owldgement message (GRA)	X			
2.11 Circuit group unblocking message (CGU)	X			
2.12 Circuit group unblocking acknowledgem ent message (CGUA)	X			
2.13 Circuit group query message (CQM) (national use)			X	Note 8 Page 65



Table 2 Q.762

Reference	C	N	P	Comments
2.14 Circuit group query response message (CQR) (national use)			X	Note 8 Page 65
2.15 Confusion message (CFN)	X			
2.16 Connect message (CON)	X			
2.17 Continuity message (COT)	X			
2.18 Continuity check request message (CCR)	X			
2.19 Facility accepted message (FAA)	X			Note 4 Page 65 Note 36 Page 67
2.20 Facility message (FAC) (national use)	X			Note 4 Page 65 Note 11 Page 65
2.21 Facility reject message (FRJ)	X			Note 4 Page 65 Note 36 Page 67
2.22 Facility request message (FAR)	X			Note 4 Page 65 Note 12 Page 65
2.23 Forward transfer message (FOT)			X	Note 10 Page 65
2.24 Identification request message (IDR)	X			Note 4 Page 65 Note 11 Page 65
2.25 Identification response message (IRS)	X			Note 4 Page 65 Note 11 Page 65
2.26 Information message (INF) (national use)	X			Note 13 Page 65

Table 2 Q.762

Reference	C	N	P	Comments
2.27 Information request message (INR) (national use)	X			Note 13 Page 65
2.28 Initial address message (IAM)	X			
2.29 Loop back acknowledgment message (LPA) (national use)	X			
2.30 Loop Prevention (LOP)		X		
2.31 Network resource management message (NRM)	X			Note 4 Page 65 Note 11 Page 65
2.32 Overload message (OLM) (national use)			X	Note 14 Page 65
2.33 Pass-along message (PAM)	X			
2.33A Pre-release information (PRI)		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 Segmentation message (SGM)	X			





Table 2 Q.762

Reference	C	N	P	Comments
2.39 Subsequent address message (SAM)			X	Note 14 Page 65
2.40 Suspend message (SUS)	X			
2.41 Unblocking message (UBL)	X			
2.42 Unblocking acknowledgement message (UBA)	X			
2.43 Unequipped circuit identification code message (UCIC) (national use)	X			
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 Page 65 Note 6 Page 65
<b>3 Signalling parameters</b>			X	Note 15 Page 66
3.1 Access delivery indicator	X			
3.2 Access transport	X			
3.2A Application transport		X		
3.3 Automatic congestion level	X			
3.4 Backward call indicators	X			
3.5 Backward GVNS			X	Note4

Table 2 Q.762

Reference	C	N	P	Comments
3.6 Call diversion information	X			
3.7 Call diversion treatment indicators			X	Note4
3.8 Call history information	X			
3.9 Call offering treatment indicators			X	Note4
3.10 Call reference	X			
3.11 Call transfer number			X	Note4
3.12 Call transfer reference			X	Note4
3.13 Called IN number			X	Note4
3.14 Called party number	X			
3.15 Calling party number	X			
3.16 Calling party's category	X			
3.17 Cause values	X			
3.17A CCNR possible indicator		X		
3.18 CCSS			X	Note4
3.19 Charged party indicator identification			X	Note4
3.20 Circuit assignment map	X			
3.21 Circuit group supervision message type indicator	X			



Table 2 Q.762

Reference	C	N	P	Comments
3.22 Circuit state indicator	X			Note 8 Page 65
3.23 Closed user group interlock code	X			
3.24 Collect call request			X	Note4
3.25 Conference treatment indicators			X	Note4
3.26 Connected number	X			
3.27 Connection request	X			
3.28 Continuity indicators	X			
3.29 Correlation id			X	Note4
3.30 Display information			X	Note4
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	Note4
3.37 Generic digits (national use)	X			
3.38 Generic notification	X			

Table 2 Q.762

Reference	C	N	P	Comments
3.39 Generic number	X			
3.40 Generic reference (reserved)	X			
3.41 Hop counter			X	Note4
3.42 Information indicators	X			
3.43 Information request indicators	X			
3.44 Location number	X			
3.45 Loop prevention indicators			X	Note4
3.46 MCID request indicator	X			
3.47 MCID response indicator	X			
3.48 Message compatibility information	X			
3.49 MLPP precedence	X			
3.50 Nature of connection indicators	X			
3.51 Network management controls			X	Note4
3.52 Network specific facilities (national use)	X			
3.53 Optional backward call indicators	X			



Table 2 Q.762

Reference	C	N	P	Comments
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	Note4
3.62 Redirecting number	X			
3.63 Redirection information	X			
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 Signalling point code (national use)	X			

Table 2 Q.762

Reference	C	N	P	Comments
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	Note4
3.77 UID capability indicators			X	Note4
3.78 User service information	X			
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			
<b>4 Parameter information</b>			X	Note4
4.1 Access delivery indicator	X			



Table 2 Q.762

Reference	C	N	P	Comments
4.2 Address presentation restricted indicator	X			
4.3 Address signal	X			
4.3A Application context identifier		X		
4.3B Application transport instruction indicators		X		
4.3C APM segmentation indicator		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			
4.12 Calling party address response indicator	X			
4.13 Calling party\qs category request indicator	X			

Table 2 Q.762

Reference	C	N	P	Comments
4.14 Calling party\qs category response indicator	X			
4.15 Cause value	X			
4.15A CCNR possible indicator		X		
4.16 CCSS call indicator		X		
4.17 Charge indicator	X			
4.18 Charge information request indicator (national use)		X		Note 13 Page 65
4.19 Charge information response indicator (national use)			X	Note 13 Page 65
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		
4.26 Conference acceptance indicator		X		





Table 2 Q.762

Reference	C	N	P	Comments
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			
4.33A Encapsulated application information		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 Page 65
4.45 Hold provided indicator (national use)			X	Note 13 Page 65
4.46 In-band information indicator	X			
4.47 Incoming half echo control device request indicator	X			
4.48 Incoming half 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				
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 half echo control device request indicator	X			
4.82 Outgoing half echo control device response 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			
4.89 SCCP method indicator	X			
4.99 Screening indicator	X			
4.99A Segmentation local reference (SLR)		X		
4.100 Send notification indicator	X			
4.101 Sequence (national use)	X			
4.101A Sequence indicator		X		
4.102 Set (national use)	X			
4.103 Signalling point code (national use)	X			

Table 2 Q.762

Reference	C	N	P	Comments
4.104 Simple segmentation indicator	X			
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
<b>1 General</b>	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 Page 66
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			
1.14 Number lengths		X		

Table 3 Q.763

References	C	N	P	Comments
<b>2 Parameter formats and codes</b>				Title
2.1 Message type codes			X	Note 7 Page 65 Note 8 Page 65 Note 11 Page 65
2.2 Coding of the length indicator	X			
2.3 Coding of the pointers	X			
<b>3 ISDN User Part parameters</b>				Title
3.1 Parameter names			X	Note 15 Page 66
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's category	X			
3.12 Cause indicators	X			





Table 3 Q.763

References	C	N	P	Comments
3.13 Circuit group supervision message type indicator	X			
3.14 Circuit state indicator	X			
3.15 Closed user group interlock code	X			
3.16 Connected number	X			
3.17 Connection request (not required)	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			

Table 3 Q.763

References	C	N	P	Comments
3.29 Information request indicators	X			
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 (not required)	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			



Table 3 Q.763

References	C	N	P	Comments
3.45 Redirection information	X			
3.46 Redirection number	X			
3.47 Redirection number restriction parameter	X			
3.48 Remote operations	X			
3.49 Service activation	X			
3.50 Signalling 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			

Table 3 Q.763

References	C	N	P	Comments
3.61 User-to-user information	X			
3.62 Backward GVNS (not required)			X	Note 15
3.63 CCSS		X		
3.64 Call transfer number			X	Note 15
3.65 Call transfer reference			X	Note 15
3.66 Forward GVNS (not required)			X	Note 15
3.67 Loop prevention indicators			X	Note 15
3.68 Network management controls			X	Note 15
3.69 Circuit assignment map	-			
3.70 Correlation id			X	Note 15
3.71 SCF id		X		
3.72 Call diversion treatment indicators			X	Note 15
3.73 Called IN number			X	Note 15
3.74 Call offering treatment indicators			X	Note 15
3.75 Charged party identification (national use)			X	Note 15
3.76 Conference treatment indicators			X	Note 15



Table 3 Q.763

References	C	N	P	Comments
3.77 Display information			X	Note 15
3.78 UID action indicators			X	Note 15
3.79 UID capability indicators			X	Note 15
3.80 Hop counter			X	Note 15
3.81 Collect call request			X	Note 15
3.82 CCNR possible indicator			X	Note 15
3.83 Application Transport Parameter (APP)			X	Note 15
3.84 IN Service Compatibility			X	Note4 Note 15
3.85 Carrier Selection Information			X	Note4 Note 15
3.86 Global Call Reference			X	Note4 Note 15
3.87 Called Directory Number			X	Note4 Note 15
3.88 Calling Geodetic Location			X	Note4 Note 15
3.89 HTR Information			X	Note4
3.90 Network Routing Number			X	Note4 Note 15
3.91 Number Portability Forward Information			X	Note4 Note 15

Table 3 Q.763

References	C	N	P	Comments
3.92 Original Called IN Number			X	Note4 Note 15
3.93 Pivot Capability			X	Note4 Note 15
3.94 Pivot Routing Backward Information			X	Note4 Note 15
3.95 Pivot Routing Forward Information			X	Note4 Note 15
3.96 Pivot Routing Indicator			X	Note4 Note 15
3.97 Pivot Status			X	Note4 Note 15
3.98 Query On Release Capability			X	Note4 Note 15
3.99 Redirect Backward Information			X	Note4 Note 15
3.100 Redirect Capability			X	Note4 Note 15
3.101 Redirect Counter			X	Note4 Note 15
3.102 Redirect Forward Information			X	Note4 Note 15
3.103 Redirect Status			X	Note4 Note 15
4 ISDN user part messages and codes			X	Note 7 Page 65 Note 8 Page 65 Note 11 Page 65
Annex A				Title



Table 3 Q.763

References	C	N	P	Comments
Interpretation of spare codes	X			Note 15 Page 66
Tables for handling of unrecognized parameter values			X	Note 15 Page 66
Type A exchanges	X			
Type B exchanges		X		
<b>Annex B</b>				Title
General description of component encoding rules	X			Note 4 Page 65

## 2.1.4 Q.764, Signalling Procedures

Table 4 Q.764

References	C	N	P	N relev	Comments
<b>1 General</b>	X				
<b>2 Basic call control and signalling procedures</b>			X		Note 2 Page 65 Note 17 Page 66 Note 18 Page 66
2.1 Successful call set-up	X				
2.1.1 Forward address signalling - En bloc operation	X				
2.1.1.1 Actions required at the originating exchange	X				

Table 4 Q.764

References	C	N	P	N relev	Comments
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			
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			





Table 4 Q.764

References	C	N	P	N relev	Comments
2.1.1.8 Called party number for calls to testing and measuring devices	X				
2.1.2 Forward address signalling - Overlap operation			X		Note 2 Page 65 Note 18 Page 66
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			
2.1.2.4 Actions required at an intermediate international exchange		X			
2.1.2.5 Actions required at an incoming international exchange		X			
2.1.2.6 Actions required at the destination exchange	X				

Table 4 Q.764

References	C	N	P	N relev	Comments
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 Page 66
2.1.4.1 Actions required at the destination exchange	X				
2.1.4.2 Actions required at an intermediate national exchange		X			
2.1.4.3 Actions required at an outgoing international exchange		X			
2.1.4.4 Actions required at an intermediate international exchange		X			



Table 4 Q.764

References	C	N	P	N relev	Comments
2.1.4.5 Actions required at an incoming international exchange		X			
2.1.4.6 Actions required at the originating exchange	X				
2.1.4.7 Through-connection and awaiting answer indication at the destination exchange	X				Note 19 Page 66
2.1.4.8 Return of address complete message in interworking situations		X			
2.1.4.9 Access delivery indication	X				Note 19 Page 66
2.1.5 Call progress (basic call)			X		Note 18 Page 66
2.1.5.1 Actions required at the destination exchange	X				

Table 4 Q.764

References	C	N	P	N relev	Comments
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 Page 65 Note 20 Page 66
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 Page 66
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 Actions requ ired at the originating exchange	X				
2.1.7.7 Return of answer from automatic terminals	X				
2.1.8 Continu ity-check	X				
2.1.9 Chargin g			X		Note 4 Page 65
2.1.10 Forw ard transfer message		X			
2.1.11 Transit network selection (national use)			X		Note 4 Page 65

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.	-				
2.1.14 Carrier selection information			X		Note 4 Page 65
2.1.15 Global Call Reference			X		Note 4 Page 65
2.2 Unsuccessful call set-up			X		Note 18 Page 66
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 Page 65



Table 4 Q.764

References	C	N	P	N relev	Comments
2.2.5 Address incomplete	X				
2.3 Normal call release			X		Note 18 Page 66
2.3.1 Release initiated by a calling party	X				
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			
2.4 Suspend, resume			X		Note 18 Page 66
2.4.1 Suspend	X				
2.4.2 Resume	X				
2.4.3 Expiration of timer (T6) or timer (T38)	X				
2.5 Signalling procedures for connection type allowing fallback			X		Note 4 Page 65
2.5.1 - 2.5.4 (omitted)			X		Note 4 Page 65

Table 4 Q.764

References	C	N	P	N relev	Comments
2.6 Propagation delay determination procedure			X		Note 4 Page 65
2.6.1 (omitted)			X		
2.7 Echo control procedure			X		Note 4 Page 65
2.7.1 - 2.7.3 (omitted)			X		Note 4 Page 65
2.8 Network features	X				Title
2.8.1 Automatic repeat attempt	X				
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 Page 65





Table 4 Q.764

References	C	N	P	N relev	Comments
2.8.3.2 Interpretation of circuit states			X		Note 8 Page 65
2.9 Abnormal conditions			X		Title Note 21 Page 66
2.9.1 Dual seizure	X				
2.9.1.1 Unguarded interval	X				
2.9.1.2 Detection of dual seizure	X				
2.9.1.3 Preventive action			X		Note 21 Page 66
2.9.1.4 Action to be taken on detection of dual seizures	-				
2.9.2 Transm ission alarm handling for digital inter -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				

Table 4 Q.764

References	C	N	P	N relev	Comments
2.9.3.3 Abnormal circuit group reset message procedures	X				
2.9.4 Failure in the blocking/unblocking sequence	X				
2.9.5 Receipt of unreasonable signalling information messages	X				
2.9.5.1 Handling of unexpected messages	X				
2.9.5.2 General requirements on receipt of unrecognized signalling information messages and parameters	X				Note 22 Page 66 Note 9
2.9.5.3 Procedures for the handling of the unrecognized messages or parameters	X				Note 22 Page 66
2.9.5.3.1 Unrecognized messages	X				
2.9.5.3.2 Unrecognized parameters	X				Note 5 Page 65 Note 15 Page 66



Table 4 Q.764

References	C	N	P	N relev	Comments
2.9.5.3.3 Unrecogniz ed parameter values	X				Note 5 Page 65  Note 15 Page 66
2.9.5.4 Proce dures for the handling of responses indicating unrecognized information has been sent		X			Title
2.9.5.4.1 Type A exchanges	X				Note 4 Page 65
2.9.5.4.2 Type B exchanges		X			
2.9.5.5 Procedures for handling unreasonable information	X				Note 4 Page 65
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 informat ion request message	X				
2.9.8 Other failure conditi ons					Title

Table 4 Q.764

References	C	N	P	N relev	Comments
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 Abno rmal release conditions	X				
2.9.9 Tempor ary trunk bloc king (TTB) (national use)			X		Note 14 Page 65
2.9.9.1 Procedures	X				
2.10 ISDN User Part signalling congestion control	X				
2.10.1 Gener al	X				
2.10.2 Proce dures	X				
2.11 Automat ic congestion control	X				Note 23 Page 66
2.11.1 Receip t of a release message containing an automatic congestion level paramet er	X				
2.11.2 Action s taken during overload	X				



Table 4 Q.764

References	C	N	P	N relev	Comments
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			
2.17 Hop counter procedure			X		Note 4
2.17.1 Actions at the initiating exchange		X			
2.17.2 Actions at an intermediate exchange		X			
2.17.3 Actions at the destination local exchange		X			
2.18 Call collect request procedure		X			

Table 4 Q.764

References	C	N	P	N relev	Comments
Annex A			X		Note 24 Page 66
Annex B	X				
Annex C			X		Note 4 Page 65
Annex D			X		Note 4 Page 65
Annex E			X		Note 4 Page 65
Annex F	X				
Annex G	X				

## 2.1.5 Q.730 ISDN Supplementary Services

Table 5 Q.730

References	C	N	P	Comments
<b>1 General</b>	-			
1.1 Exceeding the maximum message length	X			
1.2 Network specific facilities (national option)	X			Note 4 Page 65
1.2.1 Sending unsolicited information (national use)	X			Note 25 Page 66
1.3 Generic procedures				Title
1.3.1 Service activation (national use)				Title
1.3.1.1 General description	X			Note 4 Page 65
1.3.1.2 Service activation procedure			X	Note 4 Page 65 Note 11 Page 65



Table 5 Q.730

References	C	N	P	Comments
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 Page 65 Note 11 Page 65
1.3.3.2 Remote operations procedure in ISDN user part	X			Note 4 Page 65 Note 11 Page 65
1.3.3.3 Error performance	X			Note 4 Page 65 Note 11 Page 65
1.3.4 Generic notification procedure	X			Note 4 Page 65
1.3.5 Generic number transfer	X			Note 4 Page 65
1.4 End-to-end signalling			X	Title
1.4.1 Introduction			X	Note 3 Page 65
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 signalling connections		X		
1.4.5 Use of the protocol control indicator (PCI)	X			Note 4 Page 65

Table 5 Q.730

References	C	N	P	Comments
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 Page 65 Note 26 Page 66
1.6 List of supplementary services	-			Note 4 Page 65 Note 26 Page 66
1.7 Association of supplementary services to bearer services and teleservices	-			Note 4 Page 65 Note 26 Page 66
1.8 Definition of supplementary services	-			Note 4 Page 65 Note 26 Page 66
Appendix I	-			Note 4 Page 65 Note 26 Page 66





## 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 Page 66
1.4.2 <no heading>			X	Note 27 Page 66
1.5 Collection of measurements	-			
1.6 Definition of terms	-			
1.6.1 fault (F)			X	Note 28 Page 66
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			

Table 6 Q.752

References	C	N	P	Comments
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 Page 66
1.7.1.4 <no heading\>	X			
1.7.1.5 <no heading\>	X			
1.7.1.6 <no heading\>		X		Note 29 Page 66
1.7.1.7 <no heading\>		X		Note 29 Page 66
1.7.2 Intervals for measurements		X		Note 29 Page 66
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\>	-			



Table 6 Q.752

References	C	N	P	Comments
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>	-			
5 TC monitoring and measurements	-			
6 Uses of measurements	-			
6.1 Introduction	-			
6.2 Message transfer part (MTP)	-			
6.3 Signalling connection control part (SCCP)	-			
6.3.1 SCCP fault management	-			
6.3.1.1 Routing failures	X			

Table 6 Q.752

References	C	N	P	Comments
6.3.1.2 SCCP unavailability		X		
6.3.2 SCCP configuration management		X		Note 7 Page 65
6.3.3 SCCP performance	-			
6.3.3.1 Utilization			X	Note 1 Page 65
6.3.3.2 SCCP Quality of Service			X	Note 1 Page 65
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	-			
6.8 Evaluation of maintenance force effectiveness	-			
Table 1 MTP Signalling Link Faults and Performance	-			
Table 2 MTP Signalling Link Availability	-			
Table 3 MTP Signalling Link Utilization	-			
Table 4 MTP Signalling Link Set and Route Set Availability	-			



Table 6 Q.752

References	C	N	P	Comments
Table 5 MTP Signalling Point Status	-			
Table 6 MTP Signalling Traffic Distribution (Signalling 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 Page 67
Table 10.2 Start of local ISDN User Part unavailable - busy			X	Note 30 Page 67
Table 10.3 ISDN User Part available			X	Note 30 Page 67
Table 10.4 Total duration of ISDN UP unavailable			X	Note 30 Page 67
Table 10.5 Start of local ISDN User Part congestion			X	Note 30 Page 67

Table 6 Q.752

References	C	N	P	Comments
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 Page 67
Table 10.9 Stop of remote ISDN User Part unavailable		X		Note 31 Page 67
Table 10.10 Duration remote of ISDN UP unavailable		X		Note 31 Page 67
Table 10.11 Start of remote ISDN User Part congestion		X		Note 31 Page 67
Table 10.12 Stop of remote ISDN User Part congestion		X		Note 31 Page 67
Table 10.13 Duration of remote ISDN User Part congestion		X		Note 31 Page 67
Table 11 ISDN User Part Utilization	-			
Table 11.1 Total ISDN UP messages sent			X	Note 32 Page 67



Table 6 Q.752

References	C	N	P	Comments
Table 11.2 Total ISDN UP messages received			X	Note 32 Page 67
Table 12 ISDN User Part errors	-			
Table 12.1 No ack for cct reset within T17			X	Note 33 Page 67
Table 12.2 No GRA received for GRS within T23			X	Note 33 Page 67
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 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 6 Q.752

References	C	N	P	Comments
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 Page 67
Table 12.17 No UBA received for UBL within T15			X	Note 34 Page 67
Table 12.18 No CGBA received for CGB within T19			X	Note 34 Page 67
Table 12.19 No CGUA received for CGU within T21			X	Note 34 Page 67
Table 12.20 Message format error			X	Note 35 Page 67





Table 6 Q.752

References	C	N	P	Comments
Table 12.21 Unexpected message rxcvd.			X	Note 35 Page 67
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	-			

## 2.3 Supplementary Services - ETS 300 356

Table 7 ETS 300 356

References	C	N	P	Comments
ETS 300 356-1 Basic Services	X			
ETS 300 356-2 ISDN Supplementary Services	X			
ETS 300 356-3 Calling Line Identification Presentation (CLIP)	X			
ETS 300 356-4 Calling Line Identification Restriction (CLIR)	X			
ETS 300 356-5 Connected Line Identification Presentation (COLP)	X			

Table 7 ETS 300 356

References	C	N	P	Comments
ETS 300 356-6 Connected Line Identification Restriction (COLR)	X			
ETS 300 356-7 Terminal Portability (TP)	X			
ETS 300 356-8 User to User Signalling (UUS)				
ETS 300 356-9 Closed User Group (CUG)	X			
ETS 300 356-10 Subaddressing (SUB)	X			
ETS 300 356-11 Malicious Call Identification (MCID)			X	Note 4
ETS 300 356-12 Conference Call add on (CONF)		X		
ETS 300 356-14 Explicit Call Transfer (ECT)		X		
ETS 300 356-15 Diversion Supplementary Services		X		
ETS 300 356-16 Call Hold (HOLD)	X			
ETS 300 356-17 Call Waiting (CW)	X			
ETS 300 356-18 Completion of Calls to Busy Subscriber (CCBS)		X		



Table 7 ETS 300 356

References	C	N	P	Comments
ETS 300 356-19 Three Party (3PTY)		X		
ETS 300 356-20 Completion of Calls on No Reply (CCNR)		X		
ETS 300 356-31 Protocol Implementation Conformance Statement (PICS) proforma specification for Basic services		X		
ETS 300 356-32 Test Suite Structure and Test Purposes (TSS&TP) specification for basic Services		X		
ETS 300 356-33 Abstract Test Suite (ATS) and partial protocol Implementation eXtra Informat ion for Testing (PIXIT) proforma specification for basic services.		X		
ETS 300 356-34 Protocol Implementation Conformance Statement (PICS) proforma specification for Supplementarys ervices		X		

Table 7 ETS 300 356

References	C	N	P	Comments
ETS 300 356-35 Test Suite Structure and Test Purposes (TSS&TP) specification for supplementary Services		X		
ETS 300 356-36 Abstract Test Suite (ATS)and partial protocol Implementation eXtra Informat ion for Testing (PIXIT) proforma specification for supplementary services.		X		



### 3 Notes and Comments

- Note 1:** Using Signalling Connection Control Part (SCCP) as a service provider is not supported.
- Note 2:** Overlap signalling is not supported for originating call setup.
- Note 3:** The Pass-along end-to-end signalling 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.
- Messages and parameters involved are transparently handled by this ISUP.
- Note 5:** Compatibility information regarding parameters is handled by Call Control.
- Note 6:** 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 7:** CMC, CMRJ and CMR are not supported, and will cause a Confusion message(CFN) to be sent.
- Note 8:** A received CQR is correctly answered with a CQM. This ISUP never sends CQR.
- Note 9:** A received DRS will be either be treated like a normal REL, or answered with a CFN message. This ISUP never sends DRS.
- Note 10:** Never sent by this ISUP, discarded if received.
- Note 11:** FAC, IDR, IRS and NRM are either passed transparently to Call Control, or handled according to supplied compatibility information.
- Note 12:** Never sent by this ISUP, answered with FRJ if received.
- Note 13:** INR can be used only to request the Calling party number. Other indicators are always ignored. The Call control application is not engaged.
- Note 14:** Never sent by this ISUP.

- Note 15:** 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 16:** 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 17:** Multirate connection types are not supported.
- Note 18:** Only action at the national originating and destination exchange is supported.
- Note 19:** Depends on the functionality of the Call control application above ISUP.
- Note 20:** 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 21:** Additional methods are available.
- Note 22:** Type B exchange is not supported.
- Note 23:** 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.
- An incoming ACC parameter is handled by this ISUP.
- Note 24:** The time-out values are defined in the configuration file
- Note 25:** An unsolicited INF will be passed transparently to the Call control application.
- Note 26:** Recommendations Q.731-Q.737 are not addressed in this document, since they describe functionality only applicable to a Call control application.
- Note 27:** ISUP support most of the definition rules of the groups, but has not grouped them together.
- Note 28:** Every fault or measurement is reported on occurrence instead of the first occurrence and then the number of occurrences in some interval.
- Note 29:** Timestamps on events reported on occurrence are not supported by the ISUP module.



- Note 30:** Unavailability measurements are architecturally dependent and are optional in the ITU standard. An indication of the module availability is reported.
- Note 31:** Remote measurements are only necessary at gateway signalling points.
- Note 32:** Measurements are not provided periodically but can be retrieved on-demand by an external management application.
- Note 33:** Timeout of individual and group circuit reset (T17 and T23) is a combined measurement - no individual measure is available.
- Note 34:** 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 35:** 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 36:** Can be sent or received by ISUP if configured as National message only. Otherwise will be discarded.







## Reference List

### ITU Standards:

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

### ETSI Standard Recommendations

- [7] *European Telecommunications Standard Institute, Integrated Services Digital Network (ISDN); Signalling System No. 7 ;ISDN User Part (ISUP) version 3 for the international interface; Part 1: Basic services, ETS 300 356-1,2001.*
- [8] *Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 2 for the international interface; Part 2: ISDN supplementary services..ETS 300 356-2,1998*
- [9] *Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 3for the international interface; Part 3:Calling Line Identification Presentation (CLIP) supplementary services..ETS 300 356-3,1998*
- [10] *Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 3for the international interface; Part 4:Calling Line Identification Restriction (CLIR) supplementary services..ETS 300 356-4,2001*
- [11] *Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 3for the international interface; Part 5:Connected Line Identification presentation (COLP) supplementary services..ETS 300 356-5,1998*

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