

ISUP ITU

ETSI 2001

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:

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. Specify in a note what in the module that does comply and what that does not.
-	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 63
<b>2 Introduction to ISUP signalling procedures</b>				Title
2.1 Address signalling			X	Note 2 Page 63
2.2 Basic procedures	X			
2.3 Signalling methods			X	Note 3 Page 63
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 63
Compatibility procedure	X			Note 5 Page 63
Simple segmentation	X			
Tones and announcements	X			Note 4 Page 63
Propagation delay determination procedure	X			Note 4 Page 63
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 63
Transportation of User teleservice information	X			Note 4 Page 63
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		
MTP pause and resume	X			

Table 1 Q.761

References	C	N	P	Comments
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 63
Generic digit transfer	X			Note 4 Page 63
Generic notification procedure	X			Note 4 Page 63
Service activation	X			Note 4 Page 63
Simple service activation procedure	-			Note 4 Page 63
Remote operations procedure	X			Note 4 Page 63
Network specific procedures	X			Note 4 Page 63



Table 1 Q.761

References	C	N	P	Comments
Pre-release information transport		X		
Supplementary services				Title
DDI	X			Note 4 Page 63
MSN	X			Note 4 Page 63
CLIP/CLIR	X			Note 4 Page 63
COLP/COLR	X			Note 4 Page 63
MCID	X			Note 4 Page 63
Sub-addressing	X			Note 4 Page 63
Terminal portability	X			Note 4 Page 63
Call forwarding	X			Note 4 Page 63
Call deflection	X			Note 4 Page 63
Explicit Call Transfer		X		
Call waiting	X			Note 4 Page 63
Call hold	X			Note 4 Page 63
Completion of Calls to Busy Subscriber		X		
Conference calling	X			Note 4 Page 63
Three party service	X			Note 4 Page 63
CUG	X			Note 4 Page 63
MLPP	X			Note 4 Page 63
Global Virtual Network Service (GVNS)		X		
International telecommunication charge card (ITCC)		X		
Reverse charging		X		

Table 1 Q.761

References	C	N	P	Comments
UUS, Service 1 (implicit)	X			Note 4 Page 63
UUS, Service 1 (explicit)	X			Note 4 Page 63
UUS, Service 2	X			Note 4 Page 63
UUS, Service 3	X			Note 4 Page 63 Note 6 Page 63
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
5.2 SCCP method of end-to-end signalling		X		
5.3 Pass-along method of end-to-end signalling	X			



Table 1 Q.761

References	C	N	P	Comments
<b>6 Future enhancements and Compatibility procedure</b>	X			
6.1 Version compatibility	X			Note 3 Page 63
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 63

### 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		
2.3 Blocking message(BLO)	X			
2.4 Blocking acknowledgement message (BLA)	X			
2.5 Call progress message (CPG)	X			

Table 2 Q.762

Reference	C	N	P	Comments
2.6 Charge information message (CRG)	X			Note 4 Page 63
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 Page 63
2.14 Circuit group query response message (CQR) (national use)			X	Note 8 Page 63
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			



Table 2 Q.762

Reference	C	N	P	Comments
2.19 Facility accepted message (FAA)	X			Note 4 Page 63 Note 36 Page 65
2.20 Facility message (FAC) (national use)	X			Note 4 Page 63 Note 11 Page 63
2.21 Facility reject message (FRJ)	X			Note 4 Page 63 Note 36 Page 65
2.22 Facility request message (FAR)	X			Note 4 Page 63 Note 12 Page 63
2.23 Forward transfer message (FOT)			X	Note 10 Page 63
2.24 Identification request message (IDR)	X			Note 4 Page 63 Note 11 Page 63
2.25 Identification response message (IRS)	X			Note 4 Page 63 Note 11 Page 63
2.26 Information message (INF) (national use)	X			Note 13 Page 63
2.27 Information request message (INR) (national use)	X			Note 13 Page 63
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 63 Note 11 Page 63

Table 2 Q.762

Reference	C	N	P	Comments
2.32 Overload message (OLM) (national use)			X	Note 14 Page 63
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			
2.39 Subsequent address message (SAM)			X	Note 14 Page 63
2.40 Suspend message (SUS)	X			
2.41 Unblocking message (UBL)	X			
2.42 Unblocking acknowledgment 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			





Table 2 Q.762

Reference	C	N	P	Comments
2.46 User-to-user information message (USR)	X			Note 4 Page 63 Note 6 Page 63
<b>3 Signalling parameters</b>			X	Note 15 Page 64
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
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			

Table 2 Q.762

Reference	C	N	P	Comments
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			
3.22 Circuit state indicator	X			Note 8 Page 63
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			



Table 2 Q.762

Reference	C	N	P	Comments
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			
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			

Table 2 Q.762

Reference	C	N	P	Comments
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			
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			



Table 2 Q.762

Reference	C	N	P	Comments
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			
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			

Table 2 Q.762

Reference	C	N	P	Comments
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			
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			



Table 2 Q.762

Reference	C	N	P	Comments
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			
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 63
4.19 Charge information response indicator (national use)			X	Note 13 Page 63
4.20 Circuit identification code	X			
4.21 Closed user group call indicator	X			
4.22 Coding standard	X			

Table 2 Q.762

Reference	C	N	P	Comments
4.23 Component ID tag		X		
4.24 Component type	X			
4.25 Component type tag		X		
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			
4.33A 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			





Table 2 Q.762

Reference	C	N	P	Comments
4.39 Event presentation restricted indicator	X			
4.40 Extension indicator	X			
4.41 GVNS user group identification		X		
4.42 Feature code	X			
4.43 Filler	X			
4.44 Holding indicator (national use)		X		Note 13 Page 63
4.45 Hold provided indicator (national use)			X	Note 13 Page 63
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			

Table 2 Q.762

Reference	C	N	P	Comments
4.55 ISDN user part preference indicator	X			
4.56 Length (of each component or of an information element)	X			
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			



Table 2 Q.762

Reference	C	N	P	Comments
4.70 Network specific facilities indicator (national use)	X			
4.71 Notification indicator	X			
4.72 Notification subscription option	X			
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		

Table 2 Q.762

Reference	C	N	P	Comments
4.84 Pass on not possible indicator	X			
4.85 Precedence level	X			
4.86 Problem code	X			
4.87 Protocol class	X			
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			



Table 2 Q.762

Reference	C	N	P	Comments
4.101A Sequence indicator		X		
4.102 Set (national use)	X			
4.103 Signalling point code (national use)	X			
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			

Table 2 Q.762

Reference	C	N	P	Comments
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 64



Table 3 Q.763

References	C	N	P	Comments
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		
<b>2 Parameter formats and codes</b>				Title
2.1 Message type codes			X	Note 7 Page 63 Note 8 Page 63 Note 11 Page 63
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 64
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			

Table 3 Q.763

References	C	N	P	Comments
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			
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			





Table 3 Q.763

References	C	N	P	Comments
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			
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			

Table 3 Q.763

References	C	N	P	Comments
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			
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			



Table 3 Q.763

References	C	N	P	Comments
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			
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

Table 3 Q.763

References	C	N	P	Comments
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
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



Table 3 Q.763

References	C	N	P	Comments
3.90 Network Routing Number			X	Note4 Note 15
3.91 Number Port ability Forward Information			X	Note4 Note 15
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

Table 3 Q.763

References	C	N	P	Comments
<b>4 ISDN user part messages and codes</b>			X	Note 7 Page 63 Note 8 Page 63 Note 11 Page 63
<b>Annex A</b>				Title
Interpretation of spare codes	X			Note 15 Page 64
Tables for handling of unrecognized parameter values			X	Note 15 Page 64
Type A exchanges	X			
Type B exchanges		X		
<b>Annex B</b>				Title
General description of component encoding rules	X			Note 4 Page 63

## 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 63 Note 17 Page 64 Note 18 Page 64
2.1 Successful call set-up	X				
2.1.1 Forward address signalling - En bloc operation	X				



Table 4 Q.764

References	C	N	P	N relev	Comments
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			
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 63 Note 18 Page 64
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 64
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			
2.1.4.5 Actions required at an incoming international exchange		X			

Table 4 Q.764

References	C	N	P	N relev	Comments
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 64
2.1.4.8 Return of address complete message in interworking situations		X			
2.1.4.9 Access delivery indication	X				Note 19 Page 64
2.1.5 Call progress (basic call)			X		Note 18 Page 64
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			



Table 4 Q.764

References	C	N	P	N relev	Comments
2.1.5.3 Actions required at the originating exchange	X				
2.1.6 Information messages			X		Note 13 Page 63 Note 20 Page 64
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 64
2.1.7.1 Actions required at the destination exchange	X				
2.1.7.2 Actions required at an intermediate national exchange		X			
2.1.7.3 Actions required at an outgoing international exchange		X			

Table 4 Q.764

References	C	N	P	N relev	Comments
2.1.7.4 Actions required at an intermediate international exchange		X			
2.1.7.5 Actions required at an incoming international exchange		X			
2.1.7.6 Actions required at the originating exchange	X				
2.1.7.7 Return of answer from automatic terminals	X				
2.1.8 Continuity-check	X				
2.1.9 Charging			X		Note 4 Page 63
2.1.10 Forward transfer message		X			
2.1.11 Transit network selection (national use)			X		Note 4 Page 63
2.1.12 Simple segmentation	X				
2.1.12.1 Interworking with Q.767 and Blue Book (1988 version) ISDN-User Parts	X				



Table 4 Q.764

References	C	N	P	N relev	Comments
2.1.13 Procedure for Nx64 kbit/s Connection type.	-				
2.1.14 Carrier selection information			X		Note 4 Page 63
2.1.15 Global Call Reference			X		Note 4 Page 63
2.2 Unsuccessful call set-up			X		Note 18 Page 64
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 63
2.2.5 Address incomplete	X				
2.3 Normal call release			X		Note 18 Page 64
2.3.1 Release initiated by a calling party	X				
2.3.2 Release initiated by a called party	X				

Table 4 Q.764

References	C	N	P	N relev	Comments
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 64
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 63
2.5.1 - 2.5.4 (omitted)			X		Note 4 Page 63
2.6 Propagation delay determination procedure			X		Note 4 Page 63
2.6.1 (omitted)			X		
2.7 Echo control procedure			X		Note 4 Page 63
2.7.1 - 2.7.3 (omitted)			X		Note 4 Page 63
2.8 Network features	X				Title



Table 4 Q.764

References	C	N	P	N relev	Comments
2.8.1 Autom atic repeat attempt	X				
2.8.2 Blocking and unblockin g 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 63
2.8.3.2 Inter pretation of circuit states			X		Note 8 Page 63
2.9 Abnormal conditions			X		Title Note 21 Page 64
2.9.1 Dual seizure	X				
2.9.1.1 Unguarded interval	X				

Table 4 Q.764

References	C	N	P	N relev	Comments
2.9.1.2 Detection of dual seizure	X				
2.9.1.3 Preventive action			X		Note 21 Page 64
2.9.1.4 Action to be taken on detection of dual seizures	-				
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 Abnormal circuit group reset message procedures	X				
2.9.4 Failure in the blockin g/unblocking sequence	X				
2.9.5 Receipt of unreasona ble signalling information messages	X				
2.9.5.1 Handling of unexpected messages	X				





Table 4 Q.764

References	C	N	P	N relev	Comments
2.9.5.2 General requirements on receipt of unrecognized signalling information messages and parameters	X				Note 22 Page 64  Note 9
2.9.5.3 Procedures for the hand ling of the unrecognized messages or parameters	X				Note 22 Page 64
2.9.5.3.1 Unrecognized messages	X				
2.9.5.3.2 Unrecognized parameters	X				Note 5 Page 63  Note 15 Page 64
2.9.5.3.3 Unrecognized parameter values	X				Note 5 Page 63  Note 15 Page 64
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 63
2.9.5.4.2 Type B exchanges		X			

Table 4 Q.764

References	C	N	P	N relev	Comments
2.9.5.5 Procedures for handling unreasonable information	X				Note 4 Page 63
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 Page 63
2.9.9.1 Procedures	X				
2.10 ISDN User Part signalling congestion control	X				



Table 4 Q.764

References	C	N	P	N relev	Comments
2.10.1 General	X				
2.10.2 Procedures	X				
2.11 Automatic congestion control	X				Note 23 Page 64
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			

Table 4 Q.764

References	C	N	P	N relev	Comments
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			
Annex A			X		Note 24 Page 64
Annex B	X				
Annex C			X		Note 4 Page 63
Annex D			X		Note 4 Page 63
Annex E			X		Note 4 Page 63
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			



Table 5 Q.730

References	C	N	P	Comments
1.2 Network specific facilities (national option)	X			Note 4 Page 63
1.2.1 Sending unsolicited information (national use)	X			Note 25 Page 64
1.3 Generic procedures				Title
1.3.1 Service activation (national use)				Title
1.3.1.1 General description	X			Note 4 Page 63
1.3.1.2 Service activation procedure			X	Note 4 Page 63 Note 11 Page 63
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 63 Note 11 Page 63
1.3.3.2 Remote operations procedure in ISDN user part	X			Note 4 Page 63 Note 11 Page 63
1.3.3.3 Error performance	X			Note 4 Page 63 Note 11 Page 63
1.3.4 Generic notification procedure	X			Note 4 Page 63
1.3.5 Generic number transfer	X			Note 4 Page 63

Table 5 Q.730

References	C	N	P	Comments
1.4 End-to-end signalling			X	Title
1.4.1 Introduction			X	Note 3 Page 63
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 63
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 63 Note 26 Page 64



Table 5 Q.730

References	C	N	P	Comments
1.6 List of supplementary services	-			Note 4 Page 63 Note 26 Page 64
1.7 Association of supplementary services to bearer services and teleservices	-			Note 4 Page 63 Note 26 Page 64
1.8 Definition of supplementary services	-			Note 4 Page 63 Note 26 Page 64
Appendix I	-			Note 4 Page 63 Note 26 Page 64

## 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 64

Table 6 Q.752

References	C	N	P	Comments
1.4.2 <no heading\>			X	Note 27 Page 64
1.5 Collection of measurements	-			
1.6 Definition of terms	-			
1.6.1 fault (F)			X	Note 28 Page 64
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 Page 64
1.7.1.4 <no heading\>	X			
1.7.1.5 <no heading\>	X			
1.7.1.6 <no heading\>		X		Note 29 Page 64
1.7.1.7 <no heading\>		X		Note 29 Page 64





Table 6 Q.752

References	C	N	P	Comments
1.7.2 Intervals for measurements		X		Note 29 Page 64
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\>	-			

Table 6 Q.752

References	C	N	P	Comments
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			
6.3.1.2 SCCP unavailability		X		
6.3.2 SCCP configuration management		X		Note 7 Page 63
6.3.3 SCCP performance	-			
6.3.3.1 Utilization			X	Note 1 Page 63
6.3.3.2 SCCP Quality of Service			X	Note 1 Page 63
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 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 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 65

Table 6 Q.752

References	C	N	P	Comments
Table 10.2 Start of local ISDN User Part unavailable - busy			X	Note 30 Page 65
Table 10.3 ISDN User Part available			X	Note 30 Page 65
Table 10.4 Total duration of ISDN UP unavailable			X	Note 30 Page 65
Table 10.5 Start of local ISDN User Part congestion			X	Note 30 Page 65
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 65
Table 10.9 Stop of remote ISDN User Part unavailable		X		Note 31 Page 65
Table 10.10 Duration remote of ISDN UP unavailable		X		Note 31 Page 65
Table 10.11 Start of remote ISDN User Part congestion		X		Note 31 Page 65
Table 10.12 Stop of remote ISDN User Part congestion		X		Note 31 Page 65



Table 6 Q.752

References	C	N	P	Comments
Table 10.13 Duration of remote ISDN User Part congestion		X		Note 31 Page 65
Table 11 ISDN User Part Utilization	-			
Table 11.1 Total ISDN UP messages sent			X	Note 32 Page 65
Table 11.2 Total ISDN UP messages received			X	Note 32 Page 65
Table 12 ISDN User Part errors	-			
Table 12.1 No ack for cct reset within T17			X	Note 33 Page 65
Table 12.2 No GRA received for GRS within T23			X	Note 33 Page 65
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 6 Q.752

References	C	N	P	Comments
Table 12.9 Missing 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 Page 65
Table 12.17 No UBA received for UBL within T15			X	Note 34 Page 65
Table 12.18 No CGBA received for CGB within T19			X	Note 34 Page 65



Table 6 Q.752

References	C	N	P	Comments
Table 12.19 No CGUA received for CGU within T21			X	Note 34 Page 65
Table 12.20 Message format error			X	Note 35 Page 65
Table 12.21 Unexpected message rxcvd.			X	Note 35 Page 65
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			

Table 7 ETS 300 356

References	C	N	P	Comments
ETS 300 356-4 Calling Line Identification Restriction (CLIR)	X			
ETS 300 356-5 Connected Line Identification Presentation (COLP)	X			
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		





Table 7 ETS 300 356

References	C	N	P	Comments
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		
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		

Table 7 ETS 300 356

References	C	N	P	Comments
ETS 300 356-34 Protocol Implementation Conformance Statement (PICS)proforma specification for Supplementary services		X		
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 Information 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

- [12] Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 3 for the international interface; Part 6: Connected Line Identification Restriction (COLR) supplementary services..ETS 300 356-6,1998
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