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Universal Mobile Telecommunications System (UMTS);
LTE;
Interworking between the IP Multimedia (IM) Core Network (CN)
subsystem and Circuit Switched (CS) networks
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ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
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Contents

Intellectual Property Rights	2
Foreword.....	2
Modal verbs terminology.....	2
Foreword.....	14
1 Scope	15
2 References	15
3 Definitions and abbreviations.....	21
3.1 Definitions	21
3.2 Abbreviations	21
4 General	23
4.1 General interworking overview	23
5 Network characteristics	23
5.1 Key characteristics of ISUP/BICC based CS networks	23
5.2 Key characteristics of IM CN subsystem	24
6 Interworking with CS networks	24
6.1 Interworking reference model	24
6.1.1 Interworking reference points and interfaces	24
6.1.2 Interworking functional entities	25
6.1.2.1 Signalling Gateway Function (SGW)	25
6.1.2.2 Media Gateway Control Function (MGCF)	25
6.1.2.3 IP Multimedia - Media Gateway Function (IM-MGW)	25
6.2 Control plane interworking model.....	25
6.3 User plane interworking model	25
7 Control plane interworking	25
7.1 General	26
7.2 Interworking between CS networks supporting ISUP and the IM CN subsystem	26
7.2.1 Services performed by network entities in the control plane	27
7.2.1.1 Services performed by the SS7 signalling function	27
7.2.1.2 Services of the SGW	27
7.2.1.3 Services of the MGCF.....	27
7.2.1.4 Services of the SIP signalling function	27
7.2.2 Signalling interactions between network entities in the control plane.....	27
7.2.2.1 Signalling between the SS7 signalling function and MGCF	27
7.2.2.1.1 Signalling from MGCF to SS7 signalling function	27
7.2.2.1.2 Signalling from SS7 signalling function to MGCF	28
7.2.2.1.3 Services offered by SCTP and M3UA.....	28
7.2.2.2 Signalling between the MGCF and SIP signalling function.....	28
7.2.3 SIP-ISUP protocol interworking	28
7.2.3.1 Incoming call interworking from SIP to ISUP at I-MGCF	28
7.2.3.1.1 Sending of IAM.....	28
7.2.3.1.2 Coding of the IAM	29
7.2.3.1.2A Coding of the IAM when Number Portability is supported.....	42
7.2.3.1.2B Coding of the IAM for Carrier Routeing.....	45
7.2.3.1.3 Sending of COT.....	45
7.2.3.1.3A Sending of SAM	46
7.2.3.1.4 Sending of 180 ringing	47
7.2.3.1.4A Sending of 183 Session Progress for early media scenarios.....	50
7.2.3.1.4B Sending of 181Call is being forwarded	52
7.2.3.1.4C Sending of 183 Session Progress for overlap signalling using the in-dialog method	53
7.2.3.1.4D Sending of 183 Session Progress to carry ISUP Cause	53
7.2.3.1.5 Sending of the 200 OK (INVITE).....	54

7.2.3.1.6	Sending of the Release message (REL).....	56
7.2.3.1.7	Coding of the REL.....	56
7.2.3.1.8	Receipt of the Release Message	57
7.2.3.1.9	Receipt of RSC, GRS or CGB (H/W oriented)	59
7.2.3.1.9a	Receipt of REFER	60
7.2.3.1.10	Autonomous Release at I-MGCF	60
7.2.3.1.11	Internal through connection of the bearer path.....	61
7.2.3.2	Outgoing Call Interworking from ISUP to SIP at O-MGCF.....	61
7.2.3.2.1	Sending of INVITE	61
7.2.3.2.1a	Sending of INVITE without determining the end of address signalling.....	64
7.2.3.2.2	Coding of the INVITE.....	66
7.2.3.2.2A	Coding of the INVITE when Number Portability is supported	78
7.2.3.2.2B	Coding of the INVITE for Carrier Routeing	80
7.2.3.2.2C	Coding of INVITE with instance-id in form of IMEI URN	80
7.2.3.2.3	Receipt of CONTINUITY.....	81
7.2.3.2.4	Sending of ACM and awaiting answer indication	81
7.2.3.2.5	Coding of the ACM	84
7.2.3.2.6	Sending of the Call Progress message (CPG).....	87
7.2.3.2.7	Coding of the CPG	89
7.2.3.2.7a	Receipt of 200 OK(INVITE).....	91
7.2.3.2.7b	Internal through connection of the bearer path.....	91
7.2.3.2.8	Sending of the Answer Message (ANM).....	91
7.2.3.2.9	Coding of the ANM.....	91
7.2.3.2.10	Sending of the Connect message (CON)	93
7.2.3.2.11	Coding of the CON.....	93
7.2.3.2.11A	Receipt of a reINVITE request.....	93
7.2.3.2.12	Receipt of Status Codes 4xx, 5xx or 6xx.....	93
7.2.3.2.13	Receipt of a BYE.....	96
7.2.3.2.14	Receipt of the Release Message	96
7.2.3.2.15	Receipt of RSC, GRS or CGB (H/W oriented)	96
7.2.3.2.16	Autonomous Release at O-MGCF.....	96
7.2.3.2.17	Special handling of 580 precondition failure received in response to either an INVITE or UPDATE	97
7.2.3.2.18	Sending of CANCEL.....	97
7.2.3.2.19	Receipt of SIP redirect (3xx) response	98
7.2.3.2.20	Sending of INFO for overlap signalling using the in-dialog method	98
7.2.3.3	Timers	99
7.3	Interworking between CS networks supporting BICC and the IM CN subsystem.....	99
7.3.1	Services performed by network entities in the control plane	100
7.3.2	Signalling interactions between network entities in the control plane.....	100
7.3.2.1	Signalling between the SS7 signalling function and MGCF.....	100
7.3.2.1.1	Signalling from MGCF to SS7 signalling function	100
7.3.2.1.2	Signalling from SS7 signalling function to MGCF	101
7.3.2.1.3	Services offered by STC, SCTP and M3UA	101
7.3.2.2	Signalling between the MGCF and SIP signalling function.....	101
7.3.3	SIP-BICC protocol interworking	101
7.3.3.1	Incoming call interworking from SIP to BICC at I-MGCF.....	101
7.3.3.1.1	Sending of IAM	101
7.3.3.1.2	Coding of IAM	101
7.3.3.1.2A	Coding of the IAM when Number Portability is supported.....	102
7.3.3.1.2B	Coding of the IAM for Carrier Routeing.....	102
7.3.3.1.3	Sending of COT.....	102
7.3.3.1.3A	Sending of SAM	103
7.3.3.1.4	Sending of 180 Ringing.....	103
7.3.3.1.4A	Sending of 183 Session Progress for early media scenarios	103
7.3.3.1.4B	Sending of 181 Call is being forwarded	103
7.3.3.1.4C	Sending of 183 Session Progress for overlap signalling using the in-dialog method	103
7.3.3.1.4D	Sending of 183 Session Progress to carry ISUP Cause	103
7.3.3.1.5	Sending of the 200 OK (INVITE).....	103
7.3.3.1.6	Sending of the Release message (REL).....	103
7.3.3.1.7	Coding of the REL.....	104
7.3.3.1.8	Receipt of the Release Message	104

7.3.3.1.9	Receipt of RSC, GRS or CGB (H/W oriented)	104
7.3.3.1.9a	Receipt of REFER	104
7.3.3.1.9b	Autonomous Release at I-MGCF	104
7.3.3.1.10	Internal through connection of the bearer path	104
7.3.3.1.11	Out of Band DTMF	104
7.3.3.2	Outgoing Call Interworking from BICC to SIP at O-MGCF	104
7.3.3.2.1	Sending of INVITE	104
7.3.3.2.1a	Sending of INVITE without determining the end of address signalling	105
7.3.3.2.2	Coding of the INVITE	105
7.3.3.2.2A	Coding of the INVITE when number portability is supported	106
7.3.3.2.2B	Coding of the INVITE for Carrier Routeing	106
7.3.3.2.2C	Coding of INVITE with instance-id in form of IMEI URN	106
7.3.3.2.3	Sending of UPDATE	106
7.3.3.2.4	Sending of ACM and Awaiting Answer indication	107
7.3.3.2.5	Coding of the ACM	107
7.3.3.2.6	Sending of the Call Progress message (CPG)	107
7.3.3.2.7	Coding of the CPG	107
7.3.3.2.7a	Receipt of 200 OK (INVITE)	107
7.3.3.2.7b	Internal through connection of the bearer path	107
7.3.3.2.8	Sending of the Answer Message (ANM)	107
7.3.3.2.9	Coding of the ANM	107
7.3.3.2.10	Sending of the Connect message (CON)	107
7.3.3.2.11	Coding of the CON	107
7.3.3.2.11A	Receipt of re-INVITE requests	107
7.3.3.2.12	Receipt of Status Codes 4xx, 5xx or 6xx	107
7.3.3.2.13	Receipt of a BYE	108
7.3.3.2.14	Receipt of the Release Message	108
7.3.3.2.15	Receipt of RSC, GRS or CGB (H/W oriented)	108
7.3.3.2.16	Out of Band DTMF	108
7.3.3.2.17	Sending of CANCEL	108
7.3.3.2.18	Autonomous Release at O-MGCF	108
7.3.3.2.19	Special handling of 580 precondition failure received in response to either an INVITE or UPDATE	108
7.3.3.2.20	Receipt of SIP redirect (3xx) response	108
7.3.3.2.21	Sending of INFO for overlap signalling using the in-dialog method	108
7.3.3.3	Timers	108
7.4	Supplementary Services	108
7.4.1	Calling line identification presentation/restriction (CLIP/CLIR)	109
7.4.2	Connected line presentation and restriction (COLP/COLR)	109
7.4.2.0	General	109
7.4.2.1	Incoming Call Interworking from SIP to BICC/ISUP at the I-MGCF	109
7.4.2.1.1	INVITE to IAM interworking (SIP to ISUP/BICC calls)	109
7.4.2.1.2	ANM/CON to 200 OK (INVITE)	109
7.4.2.2	Outgoing Call Interworking from BICC/ISUP to SIP at O-MGCF	110
7.4.2.2.1	IAM to INVITE interworking (ISUP to SIP calls)	110
7.4.2.2.2	1XX to ANM or CON interworking	110
7.4.2.2.3	200 OK (INVITE) to ANM/CON interworking	111
7.4.3	Direct Dialling In (DDI)	111
7.4.4	Malicious call identification	112
7.4.5	Subaddressing (SUB)	112
7.4.5.1	General	112
7.4.5.2	Interworking at I-MGCF	112
7.4.5.3	Interworking at O-MGCF	113
7.4.6	Call Forwarding Busy (CFB)/ Call Forwarding No Reply (CFNR) / Call Forwarding Unconditional (CFU) / Call Deflection (CD)	114
7.4.6.1	General	114
7.4.6.2	Interworking at the O-MGCF	115
7.4.6.2.1	General	115
7.4.6.2.2	Interworking SIP to ISUP	115
7.4.6.2.3	Interworking ISUP to SIP	119
7.4.6.3	Interworking at the I-MGCF	121
7.4.6.3.1	General	121

7.4.6.3.2	Interworking from SIP to ISUP	121
7.4.6.3.3	Interworking from ISUP to SIP	124
7.4.7	Void	128
7.4.8	Explicit Call Transfer (ECT)	128
7.4.9	Call Waiting	128
7.4.10	Call Hold	128
7.4.10.1	Session hold initiated from the IM CN subsystem side	128
7.4.10.2	Session hold initiated from the CS network side	129
7.4.11	Call Completion on busy subscriber	131
7.4.12	Completion of Calls on No Reply (CCNR)	131
7.4.13	Terminal Portability (TP)	131
7.4.14	Conference calling (CONF) / Three-Party Service (3PTY)	131
7.4.15	Void	131
7.4.16	Closed User Group (CUG)	131
7.4.17	Multi-Level Precedence and Pre-emption (MLPP)	131
7.4.18	Global Virtual Network Service (GVNS)	131
7.4.19	International telecommunication charge card (ITCC)	132
7.4.20	Reverse charging (REV)	132
7.4.21	User-to-User Signalling (UUS)	132
7.4.21.0	General	132
7.4.21.1	User-to-User Signalling (UUS) service 1 (implicit)	132
7.4.21.1.0	General	132
7.4.21.1.1	Void	132
7.4.21.1.2	User-to-user information Interworking from SIP to ISUP	132
7.4.21.1.3	User-to-user information Interworking from ISUP to SIP	132
7.4.21.2	User-to-User Signalling (UUS) service 1 (explicit)	133
7.4.21.3	User-to-User Signalling (UUS) service 2 (explicit)	133
7.4.21.4	User-to-User Signalling (UUS) service 3 (explicit)	133
7.4.22	Multiple Subscriber Number (MSN)	133
7.4.23	Anonymous Call rejection	133
7.4.23.0	General	133
7.4.23.1	ISUP-SIP protocol interworking at the I-MGCF	133
7.4.23.2	SIP-ISUP protocol interworking at the O-MGCF	133
7.4.24	Customized Alerting Tones (CAT) in the 3GPP CS domain	133
7.5	IMS Supplementary Services	133
7.5.1	Originating Identification Presentation (OIP) and Originating Identification Restriction (OIR)	134
7.5.2	Terminating Identification Presentation (TIP) and Terminating Identification Restriction (TIR)	134
7.5.2.1	General	134
7.5.2.2	Interworking at the O-MGCF	134
7.5.2.3	Interworking at the I-MGCF	135
7.5.2.4	Timer	136
7.5.3	void	136
7.5.4	Communication Diversion (CDIV)	136
7.5.4.1	General	136
7.5.4.2	Interworking at the O-MGCF	137
7.5.4.2.1	General	137
7.5.4.2.2	Call forwarding within the ISUP Network appeared	142
7.5.4.3	Interworking at the I-MGCF	144
7.5.5	Communication Hold (HOLD)	151
7.5.6	Conference call (CONF)	151
7.5.6.1	General	151
7.5.6.2	Subscribing for the conference event package	151
7.5.6.3	Interworking the notification	151
7.5.7	Anonymous Communication Rejection (ACR) and Communication Barring (CB)	152
7.5.8	Message Waiting Indication (MWI)	152
7.5.9	Malicious Communication Identification (MCID)	152
7.5.9.0	General	152
7.5.9.1	Interworking at the O-MGCF	153
7.5.9.1.0	General	153
7.5.9.1.1	Interworking of the MCID XML Request schema with the ISUP MCID request indicators	153
7.5.9.1.2	Interworking of the ISUP MCID response indicators with the MCID XML Response schema	153

7.5.9.1.3	Interworking of the ISUP Calling Party Number in an Identification Response with the OrigPartyIdentity within the MCID XML Response schema.....	154
7.5.9.1.4	Interworking of the ISUP Generic Number in an Identification Response with the GenericNumber within the MCID XML Response schema	154
7.5.9.2	Interworking at the I-MGCF	154
7.5.9.2.1	General	154
7.5.9.2.2	Interworking of identification Request	154
7.5.9.2.3	Interworking of identification Response.....	154
7.5.10	Closed User Group (CUG)	155
7.5.10.0	General	155
7.5.10.1	Interworking at the I-MGCF	155
7.5.10.2	Interworking at the O-MGCF.....	156
7.5.11	CCBS/CCNR	157
7.5.11.0	General	157
7.5.11.1	Interworking at the I-MGCF	157
7.5.11.2	Interworking at the O-MGCF.....	159
7.5.12	Communication Waiting (CW).....	161
7.5.12.0	General	161
7.5.12.1	Interworking at the I-MGCF	161
7.5.12.2	Interworking at the O-MGCF.....	161
7.5.13	Customized Alerting Tones (CAT).....	161
7.5.13.1	General	161
7.5.13.2	Early session model.....	161
7.5.13.2.1	Interworking at the O-MGCF	161
7.5.13.2.2	MGCF – IM-MGW Interaction for CAT service	162
7.5.13.3	Forking model	166
7.5.13.4	Gateway model	166
8	User plane interworking	166
8.1	Interworking between IM CN subsystem and bearer independent CS network	166
8.1.1	Transcoder-less Mb to Nb Interworking	167
8.1.1.1	Initialisation	167
8.1.1.2	Time alignment	167
8.1.1.3	Rate control	167
8.1.1.4	Frame quality indication	168
8.1.1.5	Framing	168
8.1.1.6	Transcoding.....	168
8.1.1.7	Discontinuous transmission	168
8.1.1.8	Timing and sequence information.....	168
8.2	Interworking between IM CN subsystem and TDM-based CS network	169
8.3	Transcoding requirements	169
8.4	Diffserv code point requirements	169
8.5	DTMF handling	169
9	MGCF – IM-MGW Interaction.....	170
9.1	Overview	170
9.2	Mn signalling interactions	170
9.2.1	Network model	170
9.2.2	Basic IM CN subsystem originated session.....	171
9.2.2.1	BICC forward bearer establishment.....	171
9.2.2.1.1	IM-MGW selection	171
9.2.2.1.2	CS network side bearer establishment.....	171
9.2.2.1.3	IM CN subsystem side termination reservation.....	171
9.2.2.1.4	IM CN subsystem side session establishment	171
9.2.2.1.5	Through-connection	172
9.2.2.1.6	Codec handling.....	172
9.2.2.1.7	Failure handling in MGCF	172
9.2.2.1.8	Message sequence chart.....	172
9.2.2.2	BICC backward bearer establishment	174
9.2.2.2.1	IM-MGW selection	174
9.2.2.2.2	IM CN subsystem side termination reservation.....	174
9.2.2.2.3	IM CN subsystem side session establishment	174

9.2.2.2.4	CS network side bearer establishment	175
9.2.2.2.5	Through-connection	175
9.2.2.2.6	Codec handling.....	175
9.2.2.2.7	Failure handling in MGCF	175
9.2.2.2.8	Message sequence chart.....	175
9.2.2.3	ISUP.....	176
9.2.2.3.1	IM-MGW selection	176
9.2.2.3.2	IM CN subsystem side termination reservation.....	177
9.2.2.3.3	IM CN subsystem side session establishment	177
9.2.2.3.4	CS network side circuit reservation.....	177
9.2.2.3.5	Through-connection	177
9.2.2.3.6	Continuity check.....	178
9.2.2.3.7	Codec handling.....	178
9.2.2.3.8	Voice processing function	178
9.2.2.3.9	Failure handling in MGCF	178
9.2.2.3.10	Message sequence chart.....	178
9.2.3	Basic CS network originated session	180
9.2.3.1	BICC forward bearer establishment	180
9.2.3.1.1	IM-MGW selection	180
9.2.3.1.2	IM CN subsystem side termination reservation.....	180
9.2.3.1.3	IM CN subsystem side session establishment	180
9.2.3.1.4	CS network side bearer establishment.....	180
9.2.3.1.5	Called party alerting	181
9.2.3.1.6	Called party answer	181
9.2.3.1.7	Through-Connection.....	181
9.2.3.1.8	Codec handling.....	181
9.2.3.1.9	Failure handling in MGCF	181
9.2.3.1.10	Message sequence chart.....	181
9.2.3.2	BICC Backward bearer establishment	183
9.2.3.2.1	IM-MGW selection	183
9.2.3.2.2	CS network side bearer establishment.....	183
9.2.3.2.3	IM CN subsystem side termination reservation.....	183
9.2.3.2.4	IM CN subsystem side session establishment	184
9.2.3.2.5	Called party alerting	184
9.2.3.2.6	Called party answer	184
9.2.3.2.7	Through-Connection.....	184
9.2.3.2.8	Codec handling.....	184
9.2.3.2.9	Failure handling in MGCF	185
9.2.3.2.10	Message sequence chart.....	185
9.2.3.3	ISUP.....	187
9.2.3.3.1	IM-MGW selection	187
9.2.3.3.2	CS network side circuit reservation.....	187
9.2.3.3.3	IM CN subsystem side termination reservation.....	187
9.2.3.3.4	IM CN subsystem side session establishment	187
9.2.3.3.5	Called party alerting	188
9.2.3.3.6	Called party answer	188
9.2.3.3.7	Through-Connection.....	188
9.2.3.3.8	Continuity Check.....	188
9.2.3.3.9	Codec handling.....	188
9.2.3.3.10	Voice Processing function.....	189
9.2.3.3.11	Failure handling in MGCF	189
9.2.3.3.12	Message sequence chart.....	189
9.2.3.4	Handling of Forking	191
9.2.3.4.1	Detection of Forking.....	191
9.2.3.4.2	IM CN subsystem side session establishment	191
9.2.3.4.3	IM CN subsystem side session establishment completion	192
9.2.3.4.4	Message sequence chart.....	192
9.2.4	Session release initiated from IM CN subsystem side	195
9.2.4.1	BICC	195
9.2.4.1.1	Session release in the IM CN subsystem side.....	195
9.2.4.1.2	Session release in the CS network side.....	195
9.2.4.1.3	Message sequence chart.....	195

9.2.4.2	ISUP	196
9.2.4.2.1	Session release in the IM CN subsystem side.....	196
9.2.4.2.2	Session release in the CS network side.....	196
9.2.4.2.3	Message sequence chart.....	196
9.2.5	Session release initiated from CS network side	196
9.2.5.1	BICC	196
9.2.5.1.1	Session release in the CS network side.....	196
9.2.5.1.2	Session release in the IM CN subsystem side.....	197
9.2.5.1.3	Message sequence chart.....	197
9.2.5.2	ISUP	197
9.2.5.2.1	Session release in the CS network side.....	197
9.2.5.2.2	Session release in the IM CN subsystem side.....	197
9.2.5.2.3	Message sequence chart.....	198
9.2.6	Session release initiated by MGCF.....	198
9.2.6.1	BICC	198
9.2.6.1.1	Session release in the CS network side.....	198
9.2.6.1.2	Session release in the IM CN subsystem side.....	198
9.2.6.1.3	Message sequence chart.....	198
9.2.6.2	ISUP	199
9.2.6.2.1	Session release in the CS network side.....	199
9.2.6.2.2	Session release in the IM CN subsystem side.....	199
9.2.6.2.3	Message sequence chart.....	199
9.2.7	Session release initiated by IM-MGW.....	200
9.2.7.1	BICC	200
9.2.7.1.1	Session release in the CS network side.....	200
9.2.7.1.2	Session release in the IM CN subsystem side.....	200
9.2.7.1.3	Message sequence chart.....	200
9.2.7.2	ISUP.....	201
9.2.7.2.1	Session release in the CS network side.....	201
9.2.7.2.2	Session release in the IM CN subsystem side.....	201
9.2.7.2.3	Message sequence chart.....	202
9.2.8	Handling of RTP telephone events	202
9.2.8.1	Sending DTMF digits out-of-band to CS CN (BICC).....	203
9.2.8.2	Sending and receiving DTMF digits inband to/from CS CN (ISUP or BICC)	205
9.2.8.3	Receiving DTMF digits out-of-band from CS CN (BICC)	206
9.2.9	Session hold initiated from IM CN subsystem	207
9.2.10	Session hold initiated from CS network	209
9.2.11	Explicit Congestion Notification Support.....	210
9.2.11.1	General	210
9.2.11.1a	Incoming Call Interworking from SIP to ISUP/BICC at I-MGCF.....	210
9.2.11.1b	Outgoing Call Interworking from ISUP/BICC to SIP at O-MGCF	211
9.2.11.1c	Detection of ECN failures by IM-MGW	211
9.2.11.2	Message sequence chart	211
9.3	Mn Signalling procedures	212
9.3.1	Procedures related to terminations towards the IM CN Subsystem	212
9.3.1.1	Reserve IMS connection point	213
9.3.1.2	Configure IMS resources	213
9.3.1.3	Reserve IMS Connection point and configure remote resources	214
9.3.1.4	Release IMS termination.....	216
9.3.1.5	Detect IMS RTP Tel event.....	216
9.3.1.6	Notify IMS RTP Tel event.....	216
9.3.1.7	Void.....	217
9.3.1.8	Send IMS RTP Tel event	217
9.3.1.9	Stop IMS RTP Tel event	217
9.3.1.10	Termination heartbeat indication	217
9.3.1.11	IMS Bearer Released.....	217
9.3.1.12	End IMS RTP Tel event.....	217
9.3.1.13	IMS Send Tone	217
9.3.1.14	IMS Stop Tone	217
9.3.1.15	IMS Tone Completed.....	217
9.3.1.16	ECN Failure Indication	218
9.3.2	Procedures related to a termination towards an ISUP network.....	218

9.3.2.1	Reserve TDM circuit.....	218
9.3.2.2	Change TDM through-connection	219
9.3.2.3	Activate TDM voice-processing function	219
9.3.2.4	Send TDM tone.....	219
9.3.2.5	Stop TDM tone.....	219
9.3.2.6	Play TDM announcement	219
9.3.2.7	TDM announcement completed.....	219
9.3.2.8	Stop TDM announcement	219
9.3.2.9	Continuity check	219
9.3.2.10	Continuity check verify.....	220
9.3.2.11	Continuity check response	220
9.3.2.12	Release TDM termination.....	220
9.3.2.13	Termination Out-of-Service	221
9.3.2.14	Termination heartbeat indication	221
9.3.2.15	Bearer Released.....	221
9.3.2.16	TDM tone completed	221
9.3.3	Procedures related to a termination towards a BICC network.....	221
9.3.4	Non-call related procedures	222
9.3.5	Multiple IP Realms	223
9.4	Multimedia Priority Service (MPS) Support.....	224
9.4.1	General.....	224
9.4.2	IM-MGW Resource Congestion in ADD response, request is queued.....	224
9.4.3	IM-MGW Resource Congestion in ADD response, MGCF seizes new IM-MGW	225
9.4.4	IM-MGW Priority Resource Allocation	225
9.4.5	IM-MGW Priority User Data marking.....	226
Annex A (informative):	Void	227
Annex B (normative):	Codec Negotiation between a BICC CS network and the IM CN subsystem.....	228
B.1	Introduction	228
B.2	Control plane interworking	228
B.2.1	Incoming call interworking from SIP to BICC at I-MGCF.....	228
B.2.1.1	Sending of IAM	228
B.2.1.2	Sending of SDP answer	228
B.2.2	Outgoing call interworking from BICC to SIP at O-MGCF	228
B.2.2.1	Sending of INVITE.....	228
B.2.2.2	Responding to serving node initiating codec negotiation	229
B.2.3	Mid-call interworking from SIP to BICC at I-MGCF or O-MGCF	229
B.2.3.1	Receipt of SDP offer.....	229
B.2.3.2	Generating SDP answer	230
B.2.4	Mid-call interworking from BICC to SIP at I-MGCF or O-MGCF	230
B.2.4.1	Receipt of mid-call codec negotiation request.....	230
B.2.4.2	Responding to serving node initiating mid-call codec negotiation	230
B.2.4.3	Receipt of codec modification request.....	231
B.2.5	Codec parameter translation between BICC CS network and the IM CN subsystem	231
B.2.5.1	Codec parameters for 3GPP AMR-NB codecs.....	232
B.2.5.2	Codec parameters for 3GPP AMR-WB codecs	233
B.2.5.3	Codec parameters for 3GPP non-AMR codecs.....	235
B.2.5.4	Codec parameters for ITU-T codecs.....	235
B.3	MGCF – IM-MGW interaction during interworking of codec negotiation.....	236
B.3.1	Basic IM CN subsystem originated session	236
B.3.1.1	BICC forward bearer establishment	237
B.3.1.1.1	IM-MGW selection	237
B.3.1.1.2	CS network side bearer establishment.....	237
B.3.1.1.3	IM CN subsystem side session establishment	237
B.3.1.1.4	Through-connection	237
B.3.1.1.5	Codec handling	238
B.3.1.1.6	Failure handling in MGCF	238
B.3.1.1.7	Message sequence chart	238

B.3.2	Basic CS network originated session.....	240
B.3.2.1	BICC forward bearer establishment.....	240
B.3.2.1.1	IM-MGW selection.....	240
B.3.2.1.2	IM CN subsystem side termination reservation.....	240
B.3.2.1.3	IM CN subsystem side session establishment.....	240
B.3.2.1.4	CS network side bearer establishment.....	240
B.3.2.1.5	Called party alerting.....	241
B.3.2.1.6	Called party answer.....	241
B.3.2.1.7	Through-Connection.....	241
B.3.2.1.8	Codec handling.....	241
B.3.2.1.9	Failure handling in MGCF.....	241
B.3.2.1.10	Message sequence chart.....	241
B.3.3	CS network initiated mid-call codec negotiation.....	244
B.3.4	IM CN subsystem initiated mid-call codec negotiation.....	245
Annex C (normative): Interworking of CPC parameter.....		246
C.1	Interworking SIP to ISUP.....	246
C.2	Interworking ISUP to SIP.....	247
Annex D: Void.....		248
Annex E (normative): Multimedia interworking between the IP Multimedia Core Network (CN) Subsystem (IMS) and Circuit Switched (CS) networks.....		249
E.1	Basic Multimedia calls interworking between the IMS and CS Networks scenarios.....	249
E.2	Control plane interworking.....	249
E.2.1	General.....	249
E.2.2	Functionalities required in the MGCF for multimedia calls support.....	250
E.2.3	IM CN subsystem originated session.....	250
E.2.3.1	Preconditions used at IMS side.....	250
E.2.3.1.1	Interactions between H.245 or MONA and SIP/SDP.....	250
E.2.3.2	Preconditions not used at IMS side.....	252
E.2.3.2.1	Interactions between H.245 or MONA and SIP/SDP.....	252
E.2.3.3	Fallback to speech at session establishment.....	254
E.2.4	CS network originated session.....	254
E.2.4.1	Interactions between SIP/SDP and H.245 or MONA.....	254
E.2.4.1.1	Normal Call setup.....	254
E.2.4.1.2	Call setup if multimedia call can not be recognized in an unambiguous manner.....	256
E.2.4.1.3	Fallback to speech during call setup.....	256
E.2.4.2	CS originated - IM CN transit - CS terminated.....	257
E.2.5	Service change.....	258
E.2.5.2.1	SCUDIF.....	258
E.2.5.2.1.0	General.....	258
E.2.5.2.1.1	IM CN subsystem originated change.....	258
E.2.5.2.1.2	CS network originated change.....	260
E.2.5.2.2	Non-SCUDIF case (ISUP or BICC without SCUDIF).....	261
E.2.5.2.2.1	Change from multimedia to audio.....	261
E.2.5.2.2.2	Change from speech to multimedia.....	262
E.2.6	Call release.....	262
E.2.6.1	Call release initiated from the IM CN subsystem side.....	262
E.2.6.2	Call release initiated from the CS network side.....	263
E.2.6.3	Call release initiated from the interworking node.....	264
E.3	User plane interworking.....	265
E.3.1	Functionalities required in the IM-MGW for multimedia calls support.....	265
E.4	MGCF and IM-MGW interactions.....	265
E.4.1	Introduction.....	265
E.4.2	Mn signalling interactions.....	266
E.4.2.1	Introduction.....	266
E.4.2.2	H.248 Context Model.....	266

E.4.2.3	Transport of H.245 messages between the MGCF and IM-MGW	266
E.4.2.3.1	General	266
E.4.2.3.2	Transport from MGCF to IM-MGW	267
E.4.2.3.3	Transport from IM-MGW to MGCF	267
E.4.2.4	Call establishment procedure	267
E.4.2.5	Handling of H.245 indication message	270
E.4.2.5.1	Overview	270
E.4.2.5.2	Function Not Understood / Function Not Supported message	270
E.4.2.5.3	User Input Indication message	271
E.4.2.6	Handling of H.245 Command message	271
E.4.2.6.1	Overview	271
E.4.2.6.2	Flow control command	271
E.4.2.6.3	End Session Command	272
E.4.2.6.4	videoFastUpdatePicture	272
E.4.2.7	Mn Signalling Interactions to support the Media Oriented Negotiation Acceleration (MONA)	273
E.4.2.7.1	Overview	273
E.4.2.7.2	Mn Interactions for MONA preference messages	275
E.4.2.7.3	Mn Interactions for MONA MPCs	277
E.4.2.7.4	Mn Interactions for MONA SPCs	279
E.4.2.7.4.1	General	279
E.4.2.7.4.2	Transport from MGCF to IM-MGW	279
E.4.2.7.4.3	Transport from IM-MGW to MGCF	280
E.4.2.7.4.4	Termination of SPC procedure	281
E.4.2.7.5	Mn Interactions for fallback from MONA procedures to standard H.324 setup	282
E.4.2.8	Interworking between RTCP messages and H.245 messages	283
E.4.2.8.1	Overview	283
E.4.2.8.2	IM CN subsystem originated RTCP messages	283
E.4.2.8.3	CS network originated H.245 messages	284
E.4.3	Mn Signalling procedures	285
E.4.3.1	Overview	285
E.4.3.2	Add Multiplex Termination	286
E.4.3.3	Configure Multiplex Termination	287
E.4.3.4	Signal H245 Message	288
E.4.3.5	Notify H245 Message	288
E.4.3.6	Notify MONA Preference Reception	289
E.4.3.7	Notify MONA Preference Completed	289
E.4.3.8	Signal SPC	290
E.4.3.9	Notify SPC	290
E.4.3.10	Notify MPC	291
E.4.3.11	Notify Detection of Legacy Interworking	291
E.4.3.12	Request RTCP-Interworking	292
E.4.3.13	Notify RTCP-Interworking	292
E.4.3.14	Signal-H.245-Interworking	293
E.4.3.15	Stop MPC	293
E.4.3.16	Stop SPC	293
E.4.3.17	Stop MONA Negotiation	294
Annex F (normative):	PSTN XML Scheme	296
F.1	Scope	296
F.2	MIME type	296
F.3	XML Schema definition	296
F.4	IANA registration template	301
Annex G (informative):	Void	304
Annex H (normative):	Interworking of Originating Line Information (OLI) parameter (network option)	305
H.1	Interworking SIP to ISUP	305

H.2	Interworking ISUP to SIP	305
Annex I (normative):	GTT interworking between the IP Multimedia Core Network (CN) Subsystem (IMS) and Circuit Switched (CS) networks	306
I.1	Overview of GTT interworking between the IMS and Circuit Switched (CS) networks	306
I.2	Control plane interworking	307
I.2.1	General	307
I.2.2	Functionalities required in the MGCF for GTT calls support	307
I.2.3	IM CN subsystem originated session	307
I.2.3.1	Initial INVITE with an SDP offer including a text media line	307
I.2.4	CS network originated session	308
I.2.4.1	General.....	308
I.2.4.2	Initial INVITE with an SDP offer including audio only	308
I.2.5	Subsequent SDP offer/answer exchange adding text to an audio session	309
I.3	User plane interworking	309
I.3.1	Functionalities required in the IM-MGW for GTT support	309
I.3.2	Monitoring of text/modem signals on the CS side	309
I.3.3	Multiplexing between the CS and IMS streams	310
I.3.4	Conversion between text/modem and Real-Time Text over RTP	310
I.4	MGCF and IM-MGW interactions.....	310
I.4.1	Introduction	310
I.4.2	Mn signalling interactions	310
I.4.2.1	Introduction.....	310
I.4.2.2	H.248 Context Model	311
I.4.2.3	Specific Mn signalling for GTT.....	311
I.4.2.4	IM CN subsystem originated session between the MGCF and IM-MGW	312
I.4.2.4.1	Initial INVITE with an SDP offer including Real-Time Text.....	312
I.4.2.5	CS network originated session.....	314
I.4.2.5.1	Initial INVITE with an SDP offer only including audio	314
I.4.3	Mn Signalling procedures	315
I.4.3.1	Overview	315
Annex J (informative):	Call Flow for Customized Alerting Tone (CAT) interworking between CS network and IMS	316
J.1	Introduction	316
J.2	IMS CAT provided by the terminating IMS user using gateway model towards user served in CS networks	316
J.2.1	Callflow without using precondition mechanism	316
Annex K (normative):	T.38 interworking between the IP Multimedia Core Network (CN) Subsystem (IMS) and Circuit Switched (CS) networks	318
K.1	General	318
K.2	Recommend T.38 configuration.....	318
K.3	Handling T.38 SDP attributes at the I-MGCF.....	319
K.4	Handling T.38 SDP attributes at the O-MGCF	320
K.5	Applicable T.38 SDP attributes at the Mn Interface	321
Annex L (informative):	Change history	322
History		324

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

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- x the first digit:
 - 1 presented to TSG for information;
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- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

1 Scope

The present document specifies the principles of interworking between the 3GPP IM CN subsystem and BICC/ISUP based legacy CS networks, in order to support IM basic voice, data and multimedia calls.

The present document addresses the areas of control and user plane interworking between the IM CN subsystem and CS networks through the network functions, which include the MGCF and IM-MGW. For the specification of control plane interworking, areas such as the interworking between SIP and BICC or ISUP are detailed in terms of the processes and protocol mappings required for the support of both IM originated and terminated voice and multimedia calls.

Other areas addressed encompass the transport protocol and signalling issues for negotiation and mapping of bearer capabilities and QoS information.

The present document specifies the interworking between 3GPP profile of SIP (as detailed according to TS 24.229 [9]) and BICC or ISUP, as specified in ITU-T Recommendations Q.1902.1 to Q.1902.6 [30] and ITU-T Q761 to Q764 [4] respectively.

The present document also specifies the interworking between circuit switched multimedia telephony service, as described in TS 26.110 [78] TS 26.111 [79], and ITU-T Recommendation H.324 [81] and packet switched multimedia services, as described in TS 26.235 [80] and TS 26.236 [32], in particular and the interworking between the 3GPP profile of SIP and the inband control protocols for multimedia communication as specified in ITU-T Recommendations H.245 [82] and H.324 Annex K [81].

The present document addresses two interworking scenarios with respect to the properties of the CS network:

- The CS network does not use any 3GPP specific additions.
- The CS network uses 3GPP specific additions.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] ITU-T Recommendation G.711 (11/88): "Pulse Code Modulation (PCM) of voice frequencies".
- [2] ITU-T Recommendation H.248.1 (05/02): "Gateway control protocol: Version 2".
- [3] ITU-T Recommendation Q.701 (03/93), Q.702 (11/88), Q.703 (07/96), Q.704 (07/96), Q.705 (03/93), Q.706 (03/93), Q.707 (11/88), Q.708 (03/99), Q.709 (03/93): "Functional description of the message transfer part (MTP) of Signalling System No. 7".
- [4] ITU-T Recommendations Q.761 to Q.764 (12/99): "Specifications of Signalling System No.7 ISDN User Part (ISUP)".
- [5] Void.
- [6] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [7] Void.
- [8] 3GPP TS 24.228: "Signalling flows for the IP multimedia call control based on SIP and SDP".