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TECHNICAL SPECIFICATION

**LTE;**  
**Functional architecture and information flows to support**  
**Mission Critical Push To Talk (MCPTT);**  
**Stage 2**  
**(3GPP TS 23.379 version 15.4.0 Release 15)**



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**ETSI**

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

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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.....	10
1 Scope .....	11
2 References .....	11
3 Definitions, symbols and abbreviations .....	12
3.1 Definitions .....	12
3.2 Symbols.....	13
3.3 Abbreviations .....	13
4 Introduction .....	15
5 Architectural requirements .....	15
5.1 Media routing requirements .....	15
5.2 Requirements for user identity management .....	15
5.3 MCPTT group affiliation and MCPTT group de-affiliation.....	15
5.4 MCPTT call requirements .....	16
5.4.1 General.....	16
5.4.2 Group call requirements.....	16
5.5 GCS AS requirements for the MCPTT service .....	16
5.6 Group selection .....	16
5.7 Bearer management.....	16
5.7.1 General.....	16
5.7.2 EPS bearer considerations .....	16
5.7.2.1 Void.....	16
5.7.2.2 Void.....	16
5.7.3 EPS unicast bearer considerations for MCPTT .....	16
5.7.4 MBMS bearer management .....	17
5.8 MCPTT system interconnect requirements.....	17
6 Involved business relationships.....	17
7 Functional model.....	17
7.1 General .....	17
7.2 Description of the planes .....	17
7.3 Functional model description .....	17
7.3.1 On-network functional model .....	17
7.3.2 Off-network functional model .....	19
7.4 Functional entities description.....	20
7.4.1 General.....	20
7.4.2 Application plane of MCPTT service .....	20
7.4.2.1 General .....	20
7.4.2.2 Common services core .....	20
7.4.2.3 MCPTT application service .....	20
7.4.2.3.1 MCPTT client.....	20
7.4.2.3.2 MCPTT server.....	20
7.4.2.3.3 Floor participant .....	22
7.4.2.3.4 Floor control server .....	22
7.4.2.3.5 Media distribution function .....	22
7.4.2.3.6 Media mixer .....	22
7.4.2.3.7 MCPTT user database .....	22
7.4.2.3.8 MC gateway server.....	22
7.4.3 Signalling control plane .....	23
7.5 Reference points .....	23
7.5.1 General reference point principle.....	23

7.5.2	Application plane of MCPTT service .....	23
7.5.2.1	General .....	23
7.5.2.2	Reference point MCPTT-1 (between the MCPTT client and the MCPTT server).....	23
7.5.2.3	Reference point MCPTT-2 (between the MCPTT server and the MCPTT user database).....	23
7.5.2.4	Reference point MCPTT-3 (between the MCPTT server and the MCPTT server and between the MCPTT server and the MC gateway server).....	24
7.5.2.5	Reference point MCPTT-4 (unicast between the floor control server and the floor participant) .....	24
7.5.2.6	Reference point MCPTT-5 (between the media distribution function and the EPS) .....	24
7.5.2.7	Reference point MCPTT-6 (between the MCPTT server and the EPS).....	24
7.5.2.8	Reference point MCPTT-7 (unicast between the media distribution function and the media mixer).....	24
7.5.2.9	Reference point MCPTT-8 (multicast between the media distribution function and the media mixer).....	24
7.5.2.10	Reference point MCPTT-9 (multicast between the floor control server and the floor participant).....	24
7.5.2.11	Reference point IWF-1 (between the MCPTT server and the interworking function to legacy systems).....	25
7.5.2.12	Reference points of common services core used in the MCPTT service .....	25
7.5.2.13	Reference point MCPTT-10 (between the MC gateway server and the MC gateway server in a different MCPTT system) .....	25
8	Identities .....	25
9	Application of functional model to deployments .....	25
10	Procedures and information flows.....	25
10.1	MCPTT service configuration.....	25
10.2	User authentication and authorization for MCPTT service .....	25
10.3	Affiliation and de-affiliation to/from MCPTT group(s).....	26
10.3a	Activation and de-activation of/from functional alias(es).....	26
10.4	MCPTT group selection .....	27
10.4.1	General.....	27
10.4.2	Information flows for group selection .....	27
10.4.2.1	Group selection change request.....	27
10.4.2.2	Group selection change response .....	27
10.4.2.3	Group selection change notification.....	27
10.4.3	Authorized user remotely changes another MCPTT user's selected MCPTT group – mandatory mode....	27
10.5	Pre-established session (on-network).....	28
10.5.1	General.....	28
10.5.2	Information flows for pre-established session .....	29
10.5.2.1	Pre-established session establishment .....	29
10.5.2.2	Pre-established session modification .....	29
10.5.2.3	Pre-established session release - client initiated.....	30
10.5.2.4	Pre-established session release - server initiated.....	30
10.5.2.5	Pre-established session call connect request .....	30
10.5.2.6	Pre-established session call disconnect request.....	31
10.5.3	Procedures.....	31
10.5.3.1	General .....	31
10.5.3.2	Call connect and disconnect procedures using pre-established session .....	31
10.5.3.2.1	Call connect over unicast.....	31
10.5.3.2.2	Call disconnect over unicast .....	32
10.6	Group call.....	33
10.6.1	General.....	33
10.6.2	On-network group call .....	33
10.6.2.1	General .....	33
10.6.2.2	Information flows for group call in on-network.....	33
10.6.2.2.1	MCPTT emergency group call request.....	33
10.6.2.2.1a	MCPTT emergency group call response .....	33
10.6.2.2.2	MCPTT in-progress emergency group state cancel request .....	33
10.6.2.2.2a	MCPTT in-progress emergency group state cancel response.....	34
10.6.2.2.3	MCPTT emergency alert request.....	34
10.6.2.2.3a	MCPTT emergency alert response .....	35
10.6.2.2.3b	MCPTT emergency alert area trigger .....	35
10.6.2.2.4	MCPTT emergency alert cancel request.....	35

10.6.2.2.4a	MCPTT emergency alert cancel response .....	35
10.6.2.2.5	MCPTT imminent peril group call request.....	36
10.6.2.2.5a	MCPTT imminent peril group call response .....	36
10.6.2.2.6	MCPTT in-progress imminent peril group state cancel request .....	36
10.6.2.2.6a	MCPTT in-progress imminent peril group state cancel response.....	37
10.6.2.2.7	Group call request (MCPTT client – MCPTT server).....	37
10.6.2.2.8	Group call request (MCPTT server – MCPTT server).....	37
10.6.2.2.9	Group call request (MCPTT server – MCPTT client).....	38
10.6.2.2.10	Group call response (MCPTT server – MCPTT client).....	38
10.6.2.2.11	Group call response (MCPTT server – MCPTT server).....	39
10.6.2.2.12	Group call response (MCPTT client – MCPTT server).....	39
10.6.2.2.13	Group call notify (MCPTT server – MCPTT client).....	39
10.6.2.2.14	Group call release request (MCPTT server – MCPTT client).....	39
10.6.2.2.14a	Group call release request (MCPTT client – MCPTT server).....	40
10.6.2.2.15	Group call release request (MCPTT server – MCPTT server).....	40
10.6.2.2.16	Group call release response (MCPTT client – MCPTT server).....	40
10.6.2.2.17	Group call release response (MCPTT server – MCPTT server).....	41
10.6.2.2.18	Group call rejoin request (MCPTT client – MCPTT server).....	41
10.6.2.2.19	Group call rejoin response (MCPTT server – MCPTT client) .....	41
10.6.2.2.20	Group join request (MCPTT client – MCPTT server).....	42
10.6.2.2.21	Group join response (MCPTT server – MCPTT client) .....	42
10.6.2.2.22	Group call leave request (MCPTT server – MCPTT client).....	43
10.6.2.2.23	Group call leave response (MCPTT client – MCPTT server) .....	43
10.6.2.2.24	Group interrogate request (MCPTT server – MCPTT server).....	43
10.6.2.2.25	Group interrogate response (MCPTT server – MCPTT server).....	44
10.6.2.2.26	Group-broadcast group call request (MCPTT client – MCPTT server) .....	44
10.6.2.2.27	Group-broadcast group call request (MCPTT server – MCPTT client) .....	44
10.6.2.2.28	Group-broadcast group call response (MCPTT client – MCPTT server).....	45
10.6.2.2.29	Group-broadcast group call response (MCPTT server – MCPTT client).....	45
10.6.2.2.30	Group-broadcast group call release request (MCPTT client – MCPTT server) .....	45
10.6.2.2.31	Group-broadcast group call release request (MCPTT server – MCPTT client) .....	45
10.6.2.2.32	Group-broadcast group call release response (MCPTT server – MCPTT client).....	46
10.6.2.2.33	Group-broadcast group call release response (MCPTT client – MCPTT server).....	46
10.6.2.3	Group call within one MCPTT system.....	46
10.6.2.3.1	Group call models.....	46
10.6.2.3.1.1	Pre-arranged group call .....	46
10.6.2.3.1.2	Chat group call.....	51
10.6.2.3.2	Exiting group call due to de-affiliation.....	56
10.6.2.4	Group call involving groups from multiple MCPTT systems .....	57
10.6.2.4.1	Group call for temporary groups across multiple MCPTT systems .....	57
10.6.2.4.1.1	Group call setup .....	57
10.6.2.4.1.2	Group call release .....	59
10.6.2.4.2	Group call for temporary group formed by group regroup procedure involving multiple MCPTT systems via trusted mode.....	60
10.6.2.4.3	Group call for an MCPTT group defined in the partner MCPTT system.....	62
10.6.2.4.3.1	Group call setup procedure – initiating side .....	62
10.6.2.4.3.2	Group call setup – terminating side .....	63
10.6.2.4.4	Merging of groups involving multiple MCPTT systems .....	64
10.6.2.5	Broadcast group call.....	65
10.6.2.5.1	General .....	65
10.6.2.5.2	Common broadcast group call procedure .....	65
10.6.2.5.2.1	Group-broadcast group call procedure.....	66
10.6.2.5.2.2	Group-broadcast group call procedure when a subordinate group has an on-going MCPTT emergency group call.....	68
10.6.2.5.2.3	Group-broadcast group call release procedure.....	69
10.6.2.5.2.4	Server-initiated broadcast group call release procedure.....	70
10.6.2.5.3	Temporary group – broadcast group call procedure.....	71
10.6.2.6	Emergency and imminent peril procedures.....	72
10.6.2.6.1	MCPTT emergency group call .....	72
10.6.2.6.1.1	MCPTT emergency group call commencement.....	72
10.6.2.6.1.2	MCPTT group call upgraded to an MCPTT emergency group call.....	74
10.6.2.6.1.3	MCPTT in-progress emergency group state cancel .....	76



10.6.2.6.2	MCPTT imminent peril group call .....	78
10.6.2.6.2.1	MCPTT imminent peril group call commencement .....	78
10.6.2.6.2.2	Imminent peril group call upgrade.....	80
10.6.2.6.2.3	MCPTT in-progress imminent peril group state cancel .....	81
10.6.2.6.3	MCPTT emergency alert .....	82
10.6.2.6.3.1	MCPTT emergency alert initiation .....	83
10.6.2.6.3.2	MCPTT emergency alert cancel .....	85
10.6.2.6.3.3	Entering MCPTT emergency alert area .....	86
10.6.2.7	Location of current talker.....	87
10.6.2.8	Temporary group call – user regroup .....	88
10.6.2.8.1	General .....	88
10.6.2.8.2	Group call setup.....	88
10.6.2.8.3	Group call end (by authorized user) .....	89
10.6.3	Off-network group call .....	91
10.6.3.1	General.....	91
10.6.3.2	Information flows for group call in off-network .....	91
10.6.3.2.1	Group call announcement.....	91
10.6.3.2.2	MCPTT upgrade to emergency call.....	91
10.6.3.2.3	MCPTT emergency group state cancel.....	92
10.6.3.2.4	Response.....	92
10.6.3.2.5	MCPTT emergency alert announcement .....	92
10.6.3.2.6	MCPTT emergency alert cancel announcement .....	92
10.6.3.2.7	MCPTT upgrade to imminent peril call.....	93
10.6.3.2.8	MCPTT imminent peril group call cancel .....	93
10.6.3.3	Group call setup .....	93
10.6.3.4	Passive join to group call .....	94
10.6.3.5	Join to ongoing group call when new entry member initiates the call with on-going group call id.....	95
10.6.3.6	Immediate group call announcement to join an ongoing group call .....	96
10.6.3.7	Group call release due to inactivity.....	97
10.6.3.8	Broadcast group call.....	97
10.6.3.9	Emergency and imminent peril procedures.....	98
10.6.3.9.1	Emergency group call.....	98
10.6.3.9.2	MCPTT imminent peril .....	99
10.6.3.9.3	MCPTT emergency alert .....	99
10.6.3.9.3.1	MCPTT emergency alert initiation .....	99
10.6.3.9.3.2	MCPTT emergency alert cancel .....	101
10.7	Private call.....	101
10.7.1	General.....	101
10.7.2	Private call in on-network.....	102
10.7.2.1	Information flows for private call in on-network .....	102
10.7.2.1.1	MCPTT private call request (MCPTT client to MCPTT server).....	102
10.7.2.1.2	MCPTT private call request (MCPTT server to MCPTT server).....	102
10.7.2.1.2a	MCPTT private call request (MCPTT server to MCPTT client).....	102
10.7.2.1.3	MCPTT private call response (MCPTT client to MCPTT server) .....	103
10.7.2.1.4	MCPTT private call response .....	103
10.7.2.1.4a	MCPTT private call end request.....	103
10.7.2.1.4b	MCPTT private call end response .....	104
10.7.2.1.5	MCPTT emergency private call request (MCPTT client to MCPTT server) .....	104
10.7.2.1.5a	MCPTT emergency private call request (MCPTT server to MCPTT client) .....	104
10.7.2.1.6	MCPTT progress indication .....	105
10.7.2.1.7	MCPTT ringing .....	105
10.7.2.2	Private call within one MCPTT system .....	105
10.7.2.2.1	Private call setup in automatic commencement mode.....	105
10.7.2.2.2	Private call setup in manual commencement mode .....	107
10.7.2.2.2.1	Description.....	107
10.7.2.2.2.2	Procedure .....	107
10.7.2.2.3	Private call release.....	109
10.7.2.2.3.1	Client initiated.....	109
10.7.2.2.3.2	Server initiated.....	110
10.7.2.3	Private call within several MCPTT systems .....	111
10.7.2.3.1	Private call setup in automatic commencement mode – MCPTT users in multiple MCPTT systems .....	111

10.7.2.3.2	Private call setup in manual commencement mode – MCPTT users in multiple MCPTT systems .....	113
10.7.2.3.3	Private call release – MCPTT users in multiple MCPTT systems .....	115
10.7.2.4	MCPTT emergency private call .....	115
10.7.2.4.1	MCPTT emergency private call commencement .....	115
10.7.2.4.2	MCPTT private call emergency upgrade .....	117
10.7.3	Private call in off-network .....	118
10.7.3.1	Information flows for private call in off-network .....	118
10.7.3.1.1	Call setup request .....	118
10.7.3.1.2	Call setup response .....	118
10.7.3.1.3	Call release request .....	118
10.7.3.1.4	Call release response .....	118
10.7.3.2	Use of ProSe capability for private call .....	118
10.7.3.3	Private call setup in automatic commencement mode .....	119
10.7.3.4	Private call setup in manual commencement mode .....	120
10.7.3.5	Private call release .....	121
10.7.3.6	MCPTT emergency private call .....	122
10.7.4	MCPTT private call call-back request .....	122
10.7.4.1	Information flows for MCPTT private call call-back request .....	122
10.7.4.1.1	MCPTT private call call-back request .....	122
10.7.4.1.2	MCPTT private call call-back response .....	122
10.7.4.1.3	MCPTT private call call-back cancel request .....	122
10.7.4.1.4	MCPTT private call call-back cancel response .....	123
10.7.4.2	MCPTT private call call-back request within one MCPTT system .....	123
10.7.4.3	MCPTT private call call-back cancel request within one MCPTT system .....	124
10.7.4.4	MCPTT private call call-back request fulfilment within one MCPTT system .....	125
10.8	Simultaneous session for MCPTT calls (on-network) .....	126
10.8.1	General .....	126
10.9	Floor control .....	126
10.9.1	Floor control for on-network MCPTT service .....	126
10.9.1.1	General .....	126
10.9.1.2	Information flows for floor control for on-network .....	126
10.9.1.2.1	General .....	126
10.9.1.2.2	Floor request .....	127
10.9.1.2.3	Floor granted .....	127
10.9.1.2.4	Floor rejected .....	127
10.9.1.2.5	Floor request cancel .....	128
10.9.1.2.6	Floor request cancel response .....	128
10.9.1.2.7	Floor request cancel notify .....	128
10.9.1.2.8	Floor idle .....	128
10.9.1.2.9	Floor release .....	129
10.9.1.2.9a	Multi-talker floor release .....	129
10.9.1.2.10	Floor taken .....	129
10.9.1.2.10a	Multi-talker floor taken .....	129
10.9.1.2.11	Floor revoked .....	130
10.9.1.2.12	Floor acknowledgement .....	130
10.9.1.2.13	Queue position request .....	130
10.9.1.2.14	Queue position info .....	130
10.9.1.2.15	Unicast media stop request .....	131
10.9.1.2.16	Unicast media resume request .....	131
10.9.1.3	Floor control within one MCPTT system .....	131
10.9.1.3.1	Floor request, floor granted and floor taken during an MCPTT session .....	131
10.9.1.3.1a	Floor request, floor granted and multi-talker floor taken during an MCPTT session enhanced with multi-talker control .....	133
10.9.1.3.2	Floor override .....	134
10.9.1.3.2.1	Floor override using floor revoked (also floor rejected) during an MCPTT session .....	134
10.9.1.3.2.2	Floor override without using floor revoked during an MCPTT session .....	136
10.9.1.3.2.3	Floor override using floor revoked (also floor rejected) during an MCPTT session enhanced with multi-talker control .....	137
10.9.1.3.2.4	Floor release during an MCPTT session enhanced with multi-talker control .....	139
10.9.1.3.3	Queue position during an MCPTT session .....	140
10.9.1.3.4	Floor request cancellation from the floor request queue .....	141



10.9.1.3.4.1	Floor request cancellation from the queue – MCPTT user initiated .....	141
10.9.1.3.4.2	Floor request cancellation from the queue - floor control server initiated .....	142
10.9.1.4	Floor control involving groups from multiple MCPTT systems .....	143
10.9.1.4.1	Partner MCPTT system routes all floor control messages to primary MCPTT system's floor control server .....	143
10.9.1.4.2	Partner MCPTT system performs filtering of floor control messages entering and leaving the partner MCPTT system .....	145
10.9.1.5	Floor control for audio cut-in enabled group .....	148
10.9.1.6	Unicast media stop and resume requests .....	149
10.9.2	Floor control for off-network MCPTT service .....	151
10.9.2.1	General .....	151
10.9.2.2	Information flows for floor control for off-network.....	152
10.9.2.2.1	General .....	152
10.9.2.2.2	..... Floor granted .....	152
10.9.2.3	Floor control during silence .....	152
10.9.2.3.1	Successful floor taken (No floor contention).....	152
10.9.2.4	Simultaneous floor requests .....	153
10.9.2.5	Floor request during speaking with queue .....	154
10.9.2.6	Floor request during speaking without queue .....	155
10.9.2.7	Override .....	156
10.9.2.8	Floor queue status .....	157
10.10	Use of MBMS transmission (on-network) .....	158
10.10.1	Information flows for MBMS Transmission .....	158
10.10.1.1	MapGroupToBearer .....	158
10.10.1.2	UnmapGroupFromBearer .....	159
10.10.1.3	Application group paging .....	159
10.10.2	Use of pre-established MBMS bearers .....	159
10.10.3	Use of dynamic MBMS bearer establishment .....	159
10.10.4	Call connect and disconnect over MBMS .....	159
10.10.4.1	General .....	159
10.10.4.2	Procedure .....	160
10.10.4.2.1	Call connect over MBMS .....	160
10.10.4.2.2	Call disconnect over MBMS .....	161
10.10.5	Switching from MBMS bearer to unicast bearer .....	161
10.10.6	Enhanced MCPTT group call setup procedure with MBMS bearer .....	162
10.10.6.1	Description .....	162
10.10.6.2	Procedure .....	162
10.11	MCPTT resource management (on-network).....	163
10.11.1	General.....	163
10.11.2	Request for unicast resources at session establishment .....	163
10.11.3	Request for modification of unicast resources .....	163
10.11.4	Management of multicast media bearers .....	164
10.11.5	Request for resources with shared priority .....	164
10.11.5.1	General .....	164
10.11.5.2	Procedure .....	164
10.12	MCPTT media plane transmissions with partner MCPTT systems (on-network).....	164
10.13	Location information (on-network).....	165
10.14	Ambient listening call .....	166
10.14.1	General.....	166
10.14.2	Information flows for ambient listening call.....	166
10.14.2.1	Ambient listening call request.....	166
10.14.2.2	Ambient listening call response .....	166
10.14.2.3	Ambient listening call release request.....	167
10.14.2.4	Ambient listening call release response .....	167
10.14.2.5	Ambient listening call release notification.....	167
10.14.3	Ambient listening call procedures .....	168
10.14.3.1	Remotely initiated ambient listening call setup.....	168
10.14.3.2	Locally initiated ambient listening call setup.....	169
10.14.3.3	Ambient listening call release – server initiated.....	170
10.14.3.4	Remotely initiated ambient listening call release – "listening" user initiated .....	171
10.14.3.5	Ambient listening call release – "listened to" user initiated .....	171

10.15	First-to-answer call setup .....	172
10.15.1	Description.....	172
10.15.2	Information flows for first-to-answer call.....	172
10.15.3	Procedure .....	172
10.16	Remotely initiated MCPTT call .....	174
10.16.1	General.....	174
10.16.2	Information flows for remotely initiated MCPTT call .....	174
10.16.2.1	Remotely initiated MCPTT call request .....	174
10.16.2.2	Remotely initiated MCPTT call response.....	175
10.16.3	Procedure .....	175
10.16.3.1	Remotely initiated MCPTT call request.....	175
10.17	Support for multiple devices .....	177
10.17.1	General.....	177
<b>Annex A (normative):    MCPTT related configuration data .....</b>		<b>178</b>
A.1	General .....	178
A.2	MCPTT UE configuration data .....	178
A.3	MCPTT user profile configuration data .....	179
A.4	MCPTT related group configuration data .....	186
A.5	MCPTT service configuration data .....	190
<b>Annex B (informative):    Local UE settings for MCPTT .....</b>		<b>194</b>
B.1	Local UE settings for MCPTT .....	194
<b>Annex C (informative):    Change history .....</b>		<b>195</b>
History	.....	198

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# Foreword

This Technical Specification has been produced by the 3<sup>rd</sup> 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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# 1 Scope

This document specifies the functional architecture, procedures and information flows needed to support the mission critical push to talk (MCPTT) service. The MCPTT service utilizes the common functional architecture to support MC services over LTE including the common services core defined in 3GPP TS 23.280 [16]. Support for both MCPTT group calls and MCPTT private calls operating in on-network and off-network modes of operation is specified.

The corresponding service requirements are defined in 3GPP TS 22.179 [2] and 3GPP TS 22.280 [17].

The present document is applicable primarily to MCPTT voice service using E-UTRAN access based on the EPC architecture defined in 3GPP TS 23.401 [8]. Certain application functions of the MCPTT service such as dispatch and administrative functions could also be supported via non-3GPP access networks but no additional functionality is specified to support non-3GPP access.

The MCPTT service requires preferential handling compared to normal telecommunication services e.g. in support of police or fire brigade including the handling of prioritised MCPTT calls for emergency and imminent threats.

The MCPTT service can be used for public safety applications and also for general commercial applications e.g. utility companies and railways.

In the present document, MCPTT calls between MCPTT users on different MCPTT systems are considered.

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# 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] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 22.179: "Mission Critical Push to Talk (MCPTT)"; Stage 1.
- [3] 3GPP TS 23.002: "Network Architecture".
- [4] 3GPP TS 23.203: "Policy and charging control architecture".
- [5] 3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".
- [6] 3GPP TS 23.237: "IP Multimedia Subsystem (IMS) Service Continuity; Stage 2".
- [7] 3GPP TS 23.303: "Proximity-based services (ProSe); Stage 2".
- [8] 3GPP TS 23.401: "General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access".
- [9] 3GPP TS 23.468: "Group Communication System Enablers for LTE (GCSE\_LTE); Stage 2".
- [10] 3GPP TS 29.468: "Group Communication System Enablers for LTE (GCSE\_LTE); MB2 Reference Point; Stage 3".
- [11] Void
- [12] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".

- [13] IETF RFC 5245 (April 2010): "Interactive Connectivity Establishment (ICE): A Protocol for Network Address Translator (NAT) Traversal for Offer/Answer Protocols".
- [14] void
- [15] void
- [16] 3GPP TS 23.280: "Common functional architecture to support mission critical services".
- [17] 3GPP TS 22.280: "Mission Critical Common Requirements (MCCoRe); Stage 1".
- [18] 3GPP TS 29.283: "Diameter data management applications".
- [19] 3GPP TS 33.180: "Security of the mission critical service".
- [20] 3GPP TS 23.283: "Mission Critical Communication Interworking with Land Mobile Radio Systems; Stage 2".

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## 3 Definitions, symbols and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

**Automatic commencement mode:** A mode in which the initiation of the private call does not require any action on the part of the receiving MCPTT user.

**First-to-answer call:** A call that is started when the first MCPTT user among multiple potential target recipients' answers. This call requires the answering MCPTT user to answer manually; automatic answer is not allowed

**Group call:** A mechanism by which an MCPTT user can make a one-to-many MCPTT transmission to other users that are members of MCPTT group(s).

**Group home MCPTT system:** The MCPTT system where the MCPTT group is defined.

**Group host MCPTT server:** The MCPTT server within an MCPTT system that provides centralised support for MCPTT services of an MCPTT group defined in a group home MCPTT system.

**Manual commencement mode:** A mode in which the initiation of the private call requires the receiving MCPTT user to perform some action to accept or reject the call setup.

**MCPTT client:** An instance of an MC service client that provides the client application function for the MCPTT service.

**MCPTT group:** An MC service group configured for MCPTT service.

**MCPTT group affiliation:** An MC service group affiliation for MCPTT.

**MCPTT group de-affiliation:** An MC service group de-affiliation for MCPTT.

**MCPTT ID:** An instance of an MC service ID within the MCPTT service.

**MCPTT server:** An instance of an MC service server that provides the server application function for the MCPTT service.

**On-network MCPTT service:** The collection of functions and capabilities required to provide MCPTT via EPS bearers using E-UTRAN to provide the last hop radio bearers.

**Pre-selected MCPTT user profile:** An instance of the pre-selected MC service user profile for MCPTT.

**UE-to-network relay MCPTT service:** The collection of functions and capabilities required to provide MCPTT via a ProSe UE-to-network relay using ProSe direct communication paths to provide the last hop radio bearer(s).