



**Universal Mobile Telecommunications System (UMTS);
LTE;
Functional architecture and information flows to support
mission critical communication services;
Stage 2
(3GPP TS 23.179 version 13.3.0 Release 13)**



Reference

RTS/TSGS-0623179vd30

Keywords

LTE,UMTS**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
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from:

<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2016.

All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members. **3GPP™** and **LTE™** are Trade Marks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

GSM® and the GSM logo are Trade Marks registered and owned by the GSM Association.

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

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

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under <http://webapp.etsi.org/key/queryform.asp>.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Intellectual Property Rights	2
Foreword.....	2
Modal verbs terminology.....	2
Foreword.....	12
1 Scope	13
2 References	13
3 Definitions, symbols and abbreviations	14
3.1 Definitions	14
3.2 Symbols.....	15
3.3 Abbreviations	15
4 Introduction	16
5 Assumptions and architectural requirements.....	17
5.1 Assumptions	17
5.1.1 Service continuity	17
5.1.2 Trust domain.....	17
5.2 Architectural requirements	17
5.2.1 General architectural requirements	17
5.2.2 Roaming requirements.....	17
5.2.3 Media routing requirements.....	18
5.2.4 Requirements for user identity management	18
5.2.5 Group affiliation and de-affiliation.....	18
5.2.6 MCPTT call requirements	18
5.2.6.1 General.....	18
5.2.6.2 Group call requirements.....	18
5.2.7 GCS AS requirements for the MCPTT service.....	19
5.2.8 UE-to-network relay MCPTT service requirements	19
5.2.9 Bearer management	19
5.2.9.1 General	19
5.2.9.2 EPS bearer considerations.....	20
5.2.9.2.1 Considerations for the EPS bearer to the MCPTT service PDN.....	20
5.2.9.2.2 Considerations for the EPS bearer to the MC common core services PDN and MC identity management service PDN	20
5.2.9.3 EPS unicast bearer considerations for MCPTT.....	20
5.2.9.4 MBMS bearer management	21
5.2.10 MCPTT system interconnect requirements.....	21
5.2.11 MCPTT user profile requirements	21
6 Involved business relationships.....	22
7 Functional model	24
7.1 General	24
7.2 Description of the planes	24
7.3 Functional model description	24
7.3.1 On-network functional model.....	24
7.3.2 Off-network functional model	27
7.4 Functional entities description.....	28
7.4.1 General.....	28
7.4.2 Application plane.....	28
7.4.2.1 General	28
7.4.2.2 Common services core	28
7.4.2.2.1 Configuration management client.....	28
7.4.2.2.2 Configuration management server.....	28
7.4.2.2.3 Group management client.....	29

7.4.2.2.4	Group management server	29
7.4.2.2.5	Identity management client	29
7.4.2.2.6	Identity management server	29
7.4.2.2.7	Key management client	29
7.4.2.2.8	Key management server	29
7.4.2.3	MCPTT application service	29
7.4.2.3.1	MCPTT client	29
7.4.2.3.2	MCPTT server	30
7.4.2.3.3	Floor participant	31
7.4.2.3.4	Floor control server	31
7.4.2.3.5	Media distribution function	31
7.4.2.3.6	Media mixer	31
7.4.2.3.7	MCPTT user database	31
7.4.3	Signalling control plane	31
7.4.3.1	SIP entities	31
7.4.3.1.1	Signalling user agent	31
7.4.3.1.2	SIP AS	32
7.4.3.1.3	SIP core	32
7.4.3.1.3.1	General	32
7.4.3.1.3.2	Local inbound / outbound proxy	32
7.4.3.1.3.3	Registrar finder	32
7.4.3.1.3.4	Registrar / application service selection	33
7.4.3.2	SIP database	33
7.4.3.2.1	General	33
7.4.3.2.2	SIP database logical functions	34
7.4.3.3	HTTP entities	34
7.4.3.3.1	HTTP client	34
7.4.3.3.2	HTTP proxy	35
7.4.3.3.3	HTTP server	35
7.5	Reference points	35
7.5.1	General reference point principle	35
7.5.2	Application plane	35
7.5.2.1	General	35
7.5.2.2	Reference point MCPTT-1 (between the MCPTT client and the MCPTT server)	35
7.5.2.3	Reference point MCPTT-2 (between the MCPTT server and the MCPTT user database)	36
7.5.2.4	Reference point MCPTT-3 (between the MCPTT server and the MCPTT server)	36
7.5.2.5	Reference point MCPTT-4 (unicast between the floor control server and the floor participant)	36
7.5.2.6	Reference point MCPTT-5 (between the media distribution function and the EPS)	36
7.5.2.7	Reference point MCPTT-6 (between the MCPTT server and the EPS)	36
7.5.2.8	Reference point MCPTT-7 (unicast between the media distribution function and the media mixer)	36
7.5.2.9	Reference point MCPTT-8 (multicast between the media distribution function and the media mixer)	37
7.5.2.10	Reference point MCPTT-9 (multicast between the floor control server and the floor participant)	37
7.5.2.11	Reference point CSC-1 (between the identity management client and the identity management server)	37
7.5.2.12	Reference point CSC-2 (between the group management client and the group management server for configuration while UE is on-network)	37
7.5.2.13	Reference point CSC-3 (between the MCPTT server and the group management server)	37
7.5.2.14	Reference point CSC-4 (between the configuration management client and the configuration management server for configuration while UE is on-network)	37
7.5.2.15	Reference point CSC-5 (between the MCPTT server and the configuration management server)	38
7.5.2.16	Reference point CSC-6 (between the identity management server and the MCPTT server)	38
7.5.2.17	Reference point CSC-7 (between the group management servers)	38
7.5.2.18	Reference point CSC-8 (between the key management server and the key management client)	38
7.5.2.19	Reference point CSC-9 (between the key management server and the MCPTT server)	38
7.5.2.20	Reference point CSC-10 (between the key management server and the group management server)	38
7.5.2.21	Reference point CSC-11 (between the configuration management client and the configuration management server for configuration while UE is off-network)	39
7.5.2.22	Reference point CSC-12 (between the group management client and the group management server for configuration while UE is off-network)	39

7.5.2.23	Reference point CSC-13 (between the configuration management server and the MCPTT user database)	39
7.5.2.24	Reference point IWF-1 (between the MCPTT server and the interworking function to legacy systems).....	39
7.5.3	Signalling control plane	39
7.5.3.1	General	39
7.5.3.2	Reference point SIP-1(between the signalling user agent and the SIP core).....	39
7.5.3.3	Reference point SIP-2 (between the SIP core and the SIP AS).....	40
7.5.3.4	Reference point SIP-3 (between the SIP core and SIP core).....	40
7.5.3.5	Reference point HTTP-1 (between the HTTP client and the HTTP proxy).....	40
7.5.3.6	Reference point HTTP-2 (between the HTTP proxy and the HTTP server).....	40
7.5.3.7	Reference point HTTP-3 (between the HTTP proxy and HTTP proxy)	40
7.5.3.8	Reference point AAA-1 (between the SIP database and the SIP core)	40
8	Identities	41
8.1	Application plane	41
8.1.1	Mission Critical user identity (MC ID).....	41
8.1.2	MCPTT user identity (MCPTT ID)	41
8.1.3	MCPTT group identity (MCPTT group ID)	41
8.1.3.1	General	41
8.1.3.2	MCPTT group ID management (off-network operation)	42
8.2	SIP signalling control plane.....	42
8.3	Relationship between identities in different planes	43
8.3.1	Relationship between MCPTT ID and public user identity	43
8.3.2	Relationship between MCPTT group ID and public service identity	43
9	Application of functional model to deployments	44
9.1	General	44
9.2	Architecture model and deployment scenarios for on-network operations	44
9.2.1	On-network architectural model	44
9.2.1.1	On-network architectural model diagram	44
9.2.1.2	Application services layer	45
9.2.1.2.1	Overview	45
9.2.1.2.2	Common services core	45
9.2.1.2.3	MCPTT application service.....	45
9.2.1.3	SIP core	45
9.2.1.4	EPS.....	45
9.2.1.5	UE 1	45
9.2.1.6	UE 2	45
9.2.2	Deployment scenarios	46
9.2.2.1	Administration of MCPTT application service, SIP core and EPS	46
9.2.2.1.1	General	46
9.2.2.1.2	Common administration of all planes	46
9.2.2.1.3	MCPTT service provider separate from SIP core and EPS	47
9.2.2.1.4	MCPTT service provider administers SIP core, separate from EPS.....	47
9.2.2.1.5	SIP core partially administered by both PLMN operator and MCPTT service provider.....	48
9.2.2.1.6	PLMN operator administers SIP core with SIP identities administered by MCPTT service provider	49
9.2.2.2	MCPTT user database, SIP database and HSS.....	49
9.2.2.3	Control of bearers by SIP core and MCPTT server	52
9.2.2.3.1	General	52
9.2.2.3.2	Control of bearers by SIP core	52
9.2.2.3.3	Control of bearers by MCPTT server	53
9.3	Architecture model for off-network operations.....	53
9.3.1	Off-network architectural model diagram.....	53
9.3.2	UE 3.....	54
9.3.3	UE 4.....	54
9.3.4	Off-line common services server	54
9.4	Architecture model for roaming	55
10	Procedures and information flows.....	55
10.1	MCPTT configuration	55
10.1.1	General.....	55

10.1.2	Information flows for MCPTT configuration	56
10.1.2.1	Store group configuration request	56
10.1.2.2	Store group configuration response.....	56
10.1.2.3	Get group configuration request.....	56
10.1.2.4	Get group configuration response	56
10.1.2.5	Subscribe group configuration request.....	56
10.1.2.6	Subscribe group configuration response	57
10.1.2.7	Notify group configuration request.....	57
10.1.2.8	Notify group configuration response.....	57
10.1.3	MCPTT UE configuration data.....	57
10.1.3.1	General	57
10.1.3.2	Procedures.....	57
10.1.3.3	Structure of UE configuration data	58
10.1.4	MCPTT user profile.....	58
10.1.4.1	General	58
10.1.4.1a	Information flows for MCPTT user profile.....	59
10.1.4.1a.1	Get MCPTT user profile request	59
10.1.4.1a.2	Get MCPTT user profile response	59
10.1.4.1a.3	Notification for MCPTT user profile data update	59
10.1.4.1a.4	Get updated MCPTT user profile data request	59
10.1.4.1a.5	Get updated MCPTT user profile data response	60
10.1.4.1a.6	Update MCPTT user profile data request	60
10.1.4.1a.7	Update MCPTT user profile data response	60
10.1.4.2	MCPTT user obtains the MCPTT user profile(s) from the network	60
10.1.4.3	MCPTT user receives updated MCPTT user profile data from the network.....	61
10.1.4.4	MCPTT user updates the MCPTT user profile data to the network.....	61
10.1.5	MCPTT group configuration management.....	62
10.1.5.1	Store group configurations at the group management server	62
10.1.5.2	Retrieve group configurations at the group management client.....	63
10.1.5.3	Subscription and notification for group configuration data.....	64
10.1.5.4	Structure of group configuration data	65
10.1.5.5	Dynamic data associated with a group	65
10.2	User authentication and authorization for MCPTT service	65
10.3	Affiliation to MCPTT group(s)	66
10.3.1	General.....	66
10.3.2	Information flows for affiliation.....	66
10.3.2.1	MCPTT group affiliation request.....	66
10.3.2.1a	MCPTT group affiliation request (MCPTT server – MCPTT server)	66
10.3.2.2	MCPTT group affiliation response	67
10.3.2.2a	MCPTT group affiliation response (MCPTT server – MCPTT server)	67
10.3.2.3	Group affiliation status update	67
10.3.2.4	MCPTT group de-affiliation request.....	67
10.3.2.4a	MCPTT group de-affiliation request (MCPTT server – MCPTT server)	68
10.3.2.5	MCPTT group de-affiliation response	68
10.3.2.5a	MCPTT group de-affiliation response (MCPTT server – MCPTT server).....	68
10.3.2.6	Group de-affiliation status update	68
10.3.2.7	MCPTT group affiliation change request.....	69
10.3.2.8	MCPTT group affiliation change response	69
10.3.3	Affiliation	69
10.3.3.1	MCPTT group affiliation procedure.....	69
10.3.3.2	Affiliation to MCPTT group(s) defined in partner MCPTT system.....	70
10.3.3.2.1	Functional description	70
10.3.3.2.2	Procedure.....	71
10.3.4	De-affiliation from MCPTT group(s)	72
10.3.4.1	General	72
10.3.4.2	MCPTT group de-affiliation procedure	72
10.3.4.3	De-affiliation from MCPTT group(s) defined in partner MCPTT system.....	73
10.3.5	Remote change of affiliation.....	75
10.3.5.1	Remote change of affiliation for groups defined in primary MCPTT system.....	75
10.3.5.1.1	Authorized user remotely changes another MCPTT user's affiliated MCPTT group(s) – mandatory mode	75

10.3.5.1.2	Authorized user remotely changes another MCPTT user's affiliated MCPTT group(s) – negotiated mode.....	76
10.3.5.2	Remote change of affiliation for groups defined in partner MCPTT system	78
10.3.5.2.1	Authorized user remotely changes another MCPTT user's affiliated MCPTT group(s) defined in partner MCPTT system – mandatory mode.....	78
10.4	Group management (on-network)	79
10.4.1	General.....	79
10.4.2	Information flows for group management	80
10.4.2.1	Group creation request	80
10.4.2.2	Group creation confirmation response	80
10.4.2.3	Group regroup request.....	80
10.4.2.4	Group regroup confirmation response.....	80
10.4.2.5	Group regroup teardown request.....	80
10.4.2.6	Group regroup teardown response	81
10.4.2.7	Group creation notify	81
10.4.2.8	Group regroup notify.....	81
10.4.2.9	Group regroup teardown notify.....	81
10.4.2.9a	Group regroup teardown notification	81
10.4.2.9b	Group regroup teardown notification response	82
10.4.2.10	Group regroup request.....	82
10.4.2.11	Group regroup response	82
10.4.2.12	Group regroup notification.....	82
10.4.2.13	Group regroup notification response	83
10.4.3	Group creation	83
10.4.4	Group regrouping.....	84
10.4.4.1	Temporary group formation - group regrouping within an MCPTT system	84
10.4.4.2	Temporary group formation involving multiple MCPTT systems.....	85
10.4.4.3	Temporary group tear down involving multiple group host servers	87
10.5	Pre-established session (on-network)	88
10.5.1	General.....	88
10.5.2	Information flows for pre-established session	89
10.5.2.1	Pre-established session establishment	89
10.5.2.2	Pre-established session modification	89
10.5.2.3	Pre-established session release - client initiated.....	90
10.5.2.4	Pre-established session release - server initiated.....	90
10.5.2.5	Pre-established session call connect request	90
10.5.2.6	Pre-established session call disconnect request.....	91
10.5.3	Procedures.....	91
10.5.3.1	General	91
10.5.3.2	Pre-established session establishment	91
10.5.3.3	Pre-established session modification	93
10.5.3.4	Pre-established session release	94
10.5.3.5	Call connect and disconnect procedures using pre-established session	95
10.5.3.5.1	Call connect and disconnect over unicast	95
10.6	Group call	96
10.6.1	General.....	96
10.6.2	On-network group call	96
10.6.2.1	General	96
10.6.2.2	Information flows for group call in on-network.....	96
10.6.2.2.1	MCPTT emergency group call request.....	96
10.6.2.2.1a	MCPTT emergency group call response	96
10.6.2.2.2	MCPTT emergency group call cancel request.....	96
10.6.2.2.2a	MCPTT emergency group call cancel response	97
10.6.2.2.3	MCPTT emergency alert request.....	97
10.6.2.2.3a	MCPTT emergency alert response	98
10.6.2.2.4	MCPTT emergency state cancel request	98
10.6.2.2.4a	MCPTT emergency state cancel response	98
10.6.2.2.5	MCPTT imminent peril group call request.....	98
10.6.2.2.5a	MCPTT imminent peril group call response	99
10.6.2.2.6	MCPTT imminent peril group call cancel request.....	99
10.6.2.2.6a	MCPTT imminent peril group call cancel response	99
10.6.2.2.7	Group call request (MCPTT client – MCPTT server).....	99

10.6.2.2.8	Group call request (MCPTT server – MCPTT server)	100
10.6.2.2.9	Group call request (MCPTT server – MCPTT client)	100
10.6.2.2.10	Group call response (MCPTT server – MCPTT client).....	100
10.6.2.2.11	Group call response (MCPTT server – MCPTT server).....	100
10.6.2.2.12	Group call response (MCPTT client – MCPTT server).....	101
10.6.2.2.13	Group call notify (MCPTT server – MCPTT client)	101
10.6.2.2.14	Group call release request (MCPTT server – MCPTT client)	101
10.6.2.2.15	Group call release request (MCPTT server – MCPTT server)	101
10.6.2.2.16	Group call release response (MCPTT client – MCPTT server).....	102
10.6.2.2.17	Group call release response (MCPTT server – MCPTT server).....	102
10.6.2.2.18	Group call rejoin request (MCPTT client – MCPTT server).....	102
10.6.2.2.19	Group call rejoin response (MCPTT server – MCPTT client)	102
10.6.2.2.20	Group join request (MCPTT client – MCPTT server).....	103
10.6.2.2.21	Group join response (MCPTT server – MCPTT client)	103
10.6.2.2.22	Group call leave request (MCPTT server – MCPTT client).....	103
10.6.2.2.23	Group call leave response (MCPTT client – MCPTT server)	104
10.6.2.2.24	Group interrogate request (MCPTT server – MCPTT server).....	104
10.6.2.2.25	Group interrogate response (MCPTT server – MCPTT server)	104
10.6.2.3	Group call within one MCPTT system.....	104
10.6.2.3.1	Group call models.....	104
10.6.2.3.1.1	Pre-arranged group call.....	104
10.6.2.3.1.1.1	General.....	104
10.6.2.3.1.1.2	Pre-arranged group call setup	105
10.6.2.3.1.1.3	Release pre-arranged group call	106
10.6.2.3.1.1.4	Late entry pre-arranged group call.....	108
10.6.2.3.1.1.5	Rejoining call.....	108
10.6.2.3.1.2	Chat group call.....	109
10.6.2.3.1.2.1	General.....	109
10.6.2.3.1.2.2	Chat group call setup	110
10.6.2.3.1.2.3	Release chat group call	111
10.6.2.3.1.2.4	Late entry chat group call	113
10.6.2.3.2	Exiting group call due to de-affiliation.....	114
10.6.2.4	Group call involving groups from multiple MCPTT systems	115
10.6.2.4.1	Group call for temporary groups across multiple MCPTT systems	115
10.6.2.4.1.1	Group call setup	115
10.6.2.4.1.1.1	Group call setup procedure – originating side	115
10.6.2.4.1.1.2	Group call setup procedure – terminating side	116
10.6.2.4.1.2	Group call release	117
10.6.2.4.2	Group call for temporary group formed by group regroup procedure involving multiple MCPTT systems via trusted mode.....	119
10.6.2.4.3	Group call for an MCPTT group defined in the partner MCPTT system.....	120
10.6.2.4.3.1	Group call setup procedure – initiating side	120
10.6.2.4.3.2	Group call setup – terminating side	121
10.6.2.4.4	Merging of groups involving multiple MCPTT systems	122
10.6.2.5	Broadcast group call.....	123
10.6.2.5.1	General	123
10.6.2.5.2	Common broadcast group call procedure	123
10.6.2.5.3	Temporary group – broadcast group call procedure	124
10.6.2.6	Emergency and imminent peril procedures.....	125
10.6.2.6.1	MCPTT emergency group call	125
10.6.2.6.1.1	MCPTT emergency group call commencement.....	125
10.6.2.6.1.2	MCPTT group call upgraded to an MCPTT emergency group call.....	127
10.6.2.6.1.3	MCPTT emergency group call cancel	129
10.6.2.6.2	MCPTT imminent peril group call	131
10.6.2.6.2.1	MCPTT imminent peril group call commencement	131

10.6.2.6.2.2	Imminent peril group call upgrade.....	133
10.6.2.6.2.3	MCPTT imminent peril group call cancel	135
10.6.2.6.3	MCPTT emergency alert	136
10.6.2.6.3.1	MCPTT emergency alert initiation	136
10.6.2.6.3.2	MCPTT emergency state cancel	138
10.6.3	Off-network group call	139
10.6.3.1	General	139
10.6.3.2	Information flows for group call in off-network	139
10.6.3.2.1	Group call announcement.....	139
10.6.3.2.2	MCPTT upgrade to emergency call.....	140
10.6.3.2.3	MCPTT emergency group cancel.....	140
10.6.3.2.4	Response.....	140
10.6.3.2.5	MCPTT emergency alert request.....	141
10.6.3.2.6	MCPTT emergency alert cancel.....	141
10.6.3.2.7	MCPTT upgrade to imminent peril call.....	141
10.6.3.2.8	MCPTT imminent peril group call cancel	141
10.6.3.3	Group call setup	142
10.6.3.4	Passive join to group call	143
10.6.3.5	Join to ongoing group call when new entry member initiates the call with on-going group call id....	144
10.6.3.6	Immediate group call announcement to join an ongoing group call	145
10.6.3.7	Group call release due to inactivity.....	146
10.6.3.8	Broadcast group call.....	146
10.6.3.9	Emergency and imminent peril procedures.....	147
10.6.3.9.1	Emergency group call.....	147
10.6.3.9.2	MCPTT imminent peril	148
10.6.3.9.3	MCPTT emergency alert	148
10.6.3.9.3.1	MCPTT emergency alert initiation.....	148
10.6.3.9.3.2	MCPTT emergency state cancel	150
10.7	Private call.....	151
10.7.1	General.....	151
10.7.2	Private call in on-network	151
10.7.2.1	Information flows for private call in on-network	151
10.7.2.1.1	MCPTT private call request (MCPTT client – MCPTT server).....	151
10.7.2.1.2	MCPTT private call request (MCPTT server – MCPTT server).....	151
10.7.2.1.2a	MCPTT private call request (MCPTT server – MCPTT client).....	152
10.7.2.1.3	MCPTT private call response (MCPTT client – MCPTT server)	152
10.7.2.1.4	MCPTT private call response	152
10.7.2.1.4a	MCPTT call end request.....	153
10.7.2.1.5	MCPTT emergency private call request (MCPTT client to MCPTT server)	153
10.7.2.1.5a	MCPTT emergency private call request (MCPTT server to MCPTT client)	153
10.7.2.1.6	MCPTT progress indication	154
10.7.2.1.7	MCPTT ringing	154
10.7.2.2	Private call within one MCPTT system	154
10.7.2.2.1	Private call setup in automatic commencement mode.....	154
10.7.2.2.2	Private call setup in manual commencement mode.....	156
10.7.2.2.2.1	Description.....	156
10.7.2.2.2.2	Procedure	156
10.7.2.2.3	Private call release	158
10.7.2.2.3.1	Client initiated.....	158
10.7.2.2.3.2	Server initiated.....	159
10.7.2.3	Private call within several MCPTT systems	160
10.7.2.3.1	Private call setup in automatic commencement mode – MCPTT users in multiple MCPTT systems	160
10.7.2.3.2	Private call setup in manual commencement mode – MCPTT users in multiple MCPTT systems	162
10.7.2.3.3	Private call release – MCPTT users in multiple MCPTT systems	164
10.7.2.4	MCPTT emergency private call	164
10.7.2.4.1	MCPTT emergency private call commencement	164
10.7.2.4.2	MCPTT private call emergency upgrade.....	166
10.7.3	Private call in off-network	167
10.7.3.1	Information flows for private call in off-network	167
10.7.3.1.1	Call setup request	167

10.7.3.1.2	Call setup response	167
10.7.3.1.3	Call release request.....	167
10.7.3.1.4	Call release response	167
10.7.3.2	Use of ProSe capability for private call.....	168
10.7.3.3	Private call setup in automatic commencement mode.....	168
10.7.3.4	Private call setup in manual commencement mode	169
10.7.3.5	Private call release.....	170
10.7.3.6	MCPTT emergency private call	171
10.8	Simultaneous session for MCPTT call	171
10.8.1	General.....	171
10.9	Floor control.....	171
10.9.1	Floor control for on-network MCPTT service.....	171
10.9.1.1	General	171
10.9.1.2	Information flows for floor control for on-network	172
10.9.1.2.1	General	172
10.9.1.2.2	Floor request.....	172
10.9.1.2.3	Floor granted	172
10.9.1.2.4	Floor rejected.....	172
10.9.1.2.5	Floor request cancel.....	173
10.9.1.2.6	Floor request cancel response.....	173
10.9.1.2.7	Floor request cancel notify	173
10.9.1.2.8	Floor idle	174
10.9.1.2.9	Floor release	174
10.9.1.2.10	Floor taken.....	174
10.9.1.2.11	Floor revoked	174
10.9.1.2.12	Floor acknowledgement	175
10.9.1.2.13	Queue position request	175
10.9.1.2.14	Queue position info	175
10.9.1.3	Floor control within one MCPTT system.....	175
10.9.1.3.1	Floor request, floor granted and floor taken during an MCPTT session	175
10.9.1.3.2	Floor override	177
10.9.1.3.2.1	Floor override using floor revoked (also floor rejected) during an MCPTT session	177
10.9.1.3.2.2	Floor override without using floor revoked during an MCPTT session	178
10.9.1.3.3	Queue position during an MCPTT session.....	179
10.9.1.3.4	Floor request cancellation from the floor request queue	180
10.9.1.3.4.1	Floor request cancellation from the queue – MCPTT user initiated	180
10.9.1.3.4.2	Floor request cancellation from the queue - floor control server initiated	181
10.9.1.4	Floor control involving groups from multiple MCPTT systems.....	182
10.9.1.4.1	Partner MCPTT system routes all floor control messages to primary MCPTT system's floor control server	182
10.9.1.4.2	Partner MCPTT system performs filtering of floor control messages entering and leaving the partner MCPTT system	184
10.9.2	Floor control for off-network MCPTT service	187
10.9.2.1	General	187
10.9.2.2	Information flows for floor control for off-network.....	188
10.9.2.2.1	General	188
10.9.2.2.2	Floor granted	188
10.9.2.3	Floor control during silence	188
10.9.2.3.1	Successful floor taken (No floor contention).....	188
10.9.2.4	Simultaneous floor requests	189
10.9.2.5	Floor request during speaking with queue	189
10.9.2.6	Floor request during speaking without queue	190
10.9.2.7	Override	191
10.9.2.8	Floor queue status	192
10.10	Use of MBMS transmission (on-network)	193
10.10.1	Information flows for MBMS Transmission	193
10.10.1.1	MBMS bearer announcement.....	193
10.10.1.2	MapGroupToBearer	194
10.10.1.3	UnmapGroupFromBearer	194
10.10.1.4	MBMS listening status report	194
10.10.2	Use of pre-established MBMS bearers	194
10.10.2.1	General	194

10.10.2.2	Procedure	195
10.10.3	Use of dynamic MBMS bearer establishment	196
10.10.4	Call connect and disconnect over MBMS.....	197
10.10.4.1	General	197
10.10.4.2	Procedure	197
10.10.4.2.1	Call connect over MBMS	197
10.10.4.2.2	Call disconnect over MBMS	198
10.10.5	Switching from MBMS bearer to unicast bearer	199
10.11	MCPTT resource management (on-network).....	200
10.11.1	General.....	200
10.11.2	Request for unicast resources at session establishment	200
10.11.3	Request for modification of unicast resources	201
10.11.4	Management of multicast media bearers	202
10.11.5	Request for resources with shared priority	203
10.11.5.1	General	203
10.11.5.2	Procedure	203
10.12	MCPTT media plane transmissions with partner MCPTT systems (on-network).....	204
10.13	Use of UE-to-network relay	206
10.13.1	UE-to-network relay service authorization.....	206
10.13.2	UE-to-network relay MCPTT service.....	206
10.14	Location information (on-network).....	206
10.14.1	General.....	206
10.14.2	Information flows for location information	206
10.14.2.1	Location reporting configuration	206
10.14.2.2	Location information report	207
10.14.2.3	Location information request	207
10.14.2.4	Event-triggered location reporting procedure	207
10.14.2.5	On-demand location reporting procedure.....	208
Annex A (informative): Service continuity for MCPTT.....		210
A.1	Service continuity between on-network MCPTT service and UE-to-network relay MCPTT service.....	210
Annex B (normative): MCPTT related data		213
B.1	General	213
B.2	UE configuration data	213
B.3	MCPTT user profile data.....	214
B.4	Group configuration data.....	218
B.5	Service configuration data.....	221
B.6	Initial UE configuration data.....	223
Annex C (informative): Local UE settings for MCPTT.....		224
C.1	Local UE settings for MCPTT	224
Annex D (informative): Change history		225
History		229

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:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- 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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/864e-4529-9c70-22729238d619/etsi-ts-123-179-v13.3.0-2016-10>