



LTE;
Mission Critical (MC) services over LTE;
Part 1: Common test environment
(3GPP TS 36.579-1 version 14.5.0 Release 14)

*iTeh STANDARD PREVIEW
(standards.iteh.ai/catalog/standards/si/11e49b23-11d9-4dba-a869-17e1056adc90/etsi-ts-136-579-1-v14-5-0-2020-01)*



ReferenceRTS/TSGR-0536579-1ve50

KeywordsLTE

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 prevailing version of an ETSI deliverable is the one made publicly available in PDF format at www.etsi.org/deliver.

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.

© ETSI 2020.

All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members.

3GPP™ and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

oneM2M™ logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners.

GSM® and the GSM logo are trademarks registered and owned by the GSM Association.

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables 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.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

Legal Notice

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. These shall be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between 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
Legal Notice	2
Modal verbs terminology.....	2
Foreword.....	9
1 Scope	10
2 References	10
3 Definitions, symbols and abbreviations	14
3.1 Definitions	14
3.2 Symbols.....	15
3.3 Abbreviations	15
4 General	16
4.1 MCPTT Conformance testing test points overview	16
4.2 MCPTT Conformance testing test environment overview	17
4.3 MCPTT Conformance testing players and roles assumptions	20
4.4 References to TS 33.179 and TS 33.180	21
5 Common Test Environment	21
5.1 General	21
5.2 Reference test conditions.....	21
5.2.1 General.....	21
5.2.2 On-network	21
5.2.3 Off-network	21
5.3 Generic test procedures for UE MCS operation	22
5.3.1 General.....	22
5.3.2 Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation	22
5.3.2A Generic Test Procedure for MCVideo Authorization/Configuration and Key Generation.....	31
5.3.2B Generic Test Procedure for MCDATA Authorization/Configuration and Key Generation	31
5.3.3 Generic Test Procedure for MCPTT pre-established session establishment CO	31
5.3.3A Generic Test Procedure for MCVideo pre-established session establishment CO	33
5.4 Generic test procedures for UE operation over E-UTRA/EPS	33
5.4.1 General.....	33
5.4.1A UE APN/PDN support assumptions	33
5.4.2 Generic Test Procedure for MCPTT UE registration	35
5.4.2A Generic Test Procedure for MCVideo UE registration.....	40
5.4.2B Generic Test Procedure for MCDATA UE registration	40
5.4.3 Generic Test Procedure for MCPTT CO communication in E-UTRA	41
5.4.3A Generic Test Procedure for MCVideo CO communication in E-UTRA	42
5.4.3B Generic Test Procedure for MCDATA CO communication in E-UTRA.....	42
5.4.4 Generic Test Procedure for MCPTT CT communication in E-UTRA	43
5.4.4A Generic Test Procedure for MCVideo CT communication in E-UTRA.....	45
5.4.4B Generic Test Procedure for MCDATA CT communication in E-UTRA	45
5.4.5 Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment	45
5.4.6 Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment	47
5.4.7 Generic Test Procedure for MCPTT communication over ProSe direct one-to-one communication out of E-UTRA coverage - release by the SS	50
5.4.8 Generic Test Procedure for MCPTT communication over ProSe direct one-to-one communication out of E-UTRA coverage - release by the UE.....	51
5.4.9 Generic Test Procedure for MCPTT communication in E-UTRA / Change of cells.....	52
5.4.10 Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-many communication out of E-UTRA coverage / Announcing/Discoveree procedure for group member discovery.....	54

5.4.11	Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-many communication out of E-UTRA coverage / Monitoring/Discoverer procedure for group member discovery / One-to-many communication.....	57
5.4.12	Generic Test Procedure for MCPTT communication over MBMS	59
5.5	Default message and other information elements content	60
5.5.1	General.....	60
5.5.2	Default SIP message and other information elements	61
5.5.2.1	SIP ACK	61
5.5.2.1.1	SIP ACK from the UE	61
5.5.2.1.2	SIP ACK from the SS	62
5.5.2.2	SIP BYE.....	63
5.5.2.2.1	SIP BYE from the UE	63
5.5.2.2.2	SIP BYE from the SS	66
5.5.2.3	SIP CANCEL.....	67
5.5.2.4	SIP INFO	67
5.5.2.5	SIP INVITE.....	69
5.5.2.5.1	SIP INVITE from the UE	69
5.5.2.5.2	SIP INVITE from the SS	76
5.5.2.6	Void.....	83
5.5.2.7	SIP MESSAGE	83
5.5.2.7.1	SIP MESSAGE from the UE.....	83
5.5.2.7.2	SIP MESSAGE from the SS.....	86
5.5.2.8	SIP NOTIFY	89
5.5.2.9	SIP OPTIONS	91
5.5.2.10	SIP PRACK.....	95
5.5.2.10.1	SIP PRACK from the UE	95
5.5.2.10.2	SIP PRACK from the SS	97
5.5.2.11	SIP PUBLISH	98
5.5.2.12	SIP REFER	102
5.5.2.13	SIP REGISTER.....	108
5.5.2.14	SIP SUBSCRIBE.....	114
5.5.2.15	SIP UPDATE.....	120
5.5.2.15.1	SIP UPDATE from the UE	120
5.5.2.15.2	SIP UPDATE from the SS.....	123
5.5.2.16	SIP 1xx.....	126
5.5.2.16.1	SIP 100 (Trying).....	126
5.5.2.16.2	SIP 180 (Ringing).....	127
5.5.2.16.2.1	SIP 180 (Ringing) from the UE	127
5.5.2.16.2.2	SIP 180 (Ringing) from the SS	129
5.5.2.16.3	SIP 183 (Session Progress).....	131
5.5.2.16.3.1	SIP 183 (Session Progress) from the UE	131
5.5.2.16.3.2	SIP 183 (Session Progress) from the SS	134
5.5.2.17	SIP 2xx.....	137
5.5.2.17.1	SIP 200 (OK).....	137
5.5.2.17.1.1	SIP 200 (OK) from the UE	137
5.5.2.17.1.2	SIP 200 (OK) from the SS	140
5.5.2.18	SIP 3xx.....	143
5.5.2.18.1	SIP 302 (Moved Temporarily)	143
5.5.2.19	SIP 4xx.....	144
5.5.2.19.1	SIP 403 (Forbidden)	144
5.5.2.19.2	SIP 404 (Not Found)	144
5.5.2.19.3	SIP 423 (Interval Too Brief).....	144
5.5.2.19.4	SIP 480 (Temporarily unavailable)	145
5.5.2.19.5	SIP 486 (Busy Here).....	145
5.5.2.19.6	SIP 488 (Not Acceptable Here).....	146
5.5.2.19.7	SIP 401 (Unauthorized).....	147
5.5.2.20	SIP 5xx.....	149
5.5.2.20.1	SIP 500 (Server Internal Error)	149
5.5.2.21	SIP 6xx.....	149
5.5.2.21.1	SIP 606 (Not Acceptable).....	149
5.5.3	Default SDP message and other information elements	150
5.5.3.1	SDP Message	150

5.5.3.1.1	SDP Message from the UE.....	150
-	MCPTT.....	150
-	MCVideo	153
-	MCDData.....	158
5.5.3.1.2	SDP Message from the SS.....	159
-	MCPTT.....	159
-	MCVideo	161
-	MCDData.....	166
5.5.3.1.3	SDP Message from the UE - Off-network.....	167
-	MCPTT.....	167
-	MCVideo	169
-	MCDData.....	173
5.5.3.1.4	SDP Message from the SS - Off-network.....	174
-	MCPTT.....	174
-	MCVideo	176
-	MCDData.....	180
5.5.3.2	MCS Info Lists.....	181
5.5.3.2.1	MCS Info Lists from the UE	181
-	MCPTT.....	181
-	MCVideo	183
-	MCDData.....	185
5.5.3.2.2	MCPTT-Info from the SS.....	186
-	MCPTT.....	186
-	MCVideo	186
-	MCDData.....	189
5.5.3.3	Resource-lists.....	190
5.5.3.3.1	Resource-lists from the UE.....	190
-	MCPTT.....	190
-	MCVideo	191
-	MCDData.....	192
5.5.3.3.2	Resource-lists from the SS.....	192
-	MCPTT.....	192
-	MCVideo	192
-	MCDData.....	192
5.5.3.4	Location-info.....	193
5.5.3.4.1	Location-info (Report from the UE).....	193
-	MCPTT.....	193
-	MCVideo	196
5.5.3.4.2	Location-info (Configuration sent by the SS).....	199
-	MCPTT.....	199
-	MCVideo	202
5.5.3.4.3	Location-info (Request sent by the SS).....	204
-	MCPTT.....	204
-	MCVideo	204
5.5.3.5	PIDF.....	205
-	MCPTT	205
-	MCVideo	205
-	MCDData	206
5.5.3.6	SIMPLE-FILTER.....	207
-	MCPTT	207
-	MCVideo	208
-	MCDData	209
5.5.3.7	AFFILIATION-COMMAND	209
-	MCPTT	209
-	MCVideo	209
-	MCDData	210
5.5.3.8	SDS Signaling Payload	210
5.5.3.8.1	SDS Signaling Payload from the UE.....	210
5.5.3.8.2	SDS Signaling Payload from the SS.....	211
5.5.3.9	MCDData Data Payload.....	211
5.5.3.10	MCDData Protected Payload Message	212
5.5.4	Default HTTP message and other information elements	212

5.5.4.1	General	212
5.5.4.2	GET	213
5.5.4.3	POST	214
5.5.4.4	PUT	215
5.5.4.5	DELETE	216
5.5.4.6	HTTP 200 (OK)	217
5.5.4.7	HTTP 201 (Created).....	219
5.5.4.8	HTTP 302 (Found).....	219
5.5.4.9	HTTP 409 (Conflict).....	220
5.5.4.10	HTTP Message Bodies.....	220
5.5.4.10.1	Authentication Request	220
5.5.4.10.2	Authentication Response	221
5.5.4.10.3	Token Request.....	221
5.5.4.10.4	Token Response.....	222
5.5.4.10.5	KMS Initialize	225
5.5.4.10.6	KMS Certificate.....	226
5.5.4.10.7	KMS KeyProvision	227
5.5.4.10.8	KMS Key Set.....	228
5.5.5	Default MCPTT call control Off-network messages and other information elements.....	231
5.5.5.1	GROUP CALL PROBE	231
5.5.5.2	GROUP CALL ANNOUNCEMENT	232
5.5.5.2.1	GROUP CALL ANNOUNCEMENT from the UE.....	232
5.5.5.2.2	GROUP CALL ANNOUNCEMENT from the SS.....	233
5.5.5.3	GROUP CALL ACCEPT	234
5.5.5.3.1	GROUP CALL ACCEPT from the UE	234
5.5.5.3.2	GROUP CALL ACCEPT from the SS.....	234
5.5.5.4	GROUP CALL EMERGENCY END	235
5.5.5.4.1	GROUP CALL EMERGENCY END from the UE.....	235
5.5.5.4.2	GROUP CALL EMERGENCY END from the SS	235
5.5.5.5	GROUP CALL IMMINENT PERIL END	236
5.5.5.5.1	GROUP CALL IMMINENT PERIL END from the UE.....	236
5.5.5.5.2	GROUP CALL IMMINENT PERIL END from the SS.....	236
5.5.5.6	GROUP CALL BROADCAST.....	237
5.5.5.6.1	GROUP CALL BROADCAST from the UE	237
5.5.5.6.2	GROUP CALL BROADCAST from the SS	237
5.5.5.7	GROUP CALL BROADCAST END	237
5.5.5.7.1	GROUP CALL BROADCAST END from the UE	237
5.5.5.7.2	GROUP CALL BROADCAST END from the SS	238
5.5.5.8	PRIVATE CALL SETUP REQUEST	238
5.5.5.8.1	PRIVATE CALL SETUP REQUEST from the UE.....	238
5.5.5.8.2	PRIVATE CALL SETUP REQUEST from the SS.....	238
5.5.5.9	PRIVATE CALL RINGING.....	239
5.5.5.10	PRIVATE CALL ACCEPT	239
5.5.5.11	PRIVATE CALL REJECT	239
5.5.5.11.1	PRIVATE CALL REJECT from the UE.....	239
5.5.5.11.2	PRIVATE CALL REJECT from the SS.....	240
5.5.5.12	PRIVATE CALL RELEASE	240
5.5.5.13	PRIVATE CALL RELEASE ACK.....	240
5.5.5.14	PRIVATE CALL ACCEPT ACK.....	241
5.5.5.15	PRIVATE CALL EMERGENCY CANCEL.....	241
5.5.5.15.1	PRIVATE CALL EMERGENCY CANCEL from the UE	241
5.5.5.15.2	PRIVATE CALL EMERGENCY CANCEL from the SS	241
5.5.5.16	PRIVATE CALL EMERGENCY CANCEL ACK	242
5.5.5.16.1	PRIVATE CALL EMERGENCY CANCEL ACK from the UE.....	242
5.5.5.16.2	PRIVATE CALL EMERGENCY CANCEL ACK from the SS	242
5.5.5.17	GROUP EMERGENCY ALERT.....	242
5.5.5.17.1	GROUP EMERGENCY ALERT from the UE	242
5.5.5.17.2	GROUP EMERGENCY ALERT from the SS	242
5.5.5.18	GROUP EMERGENCY ALERT ACK.....	243
5.5.5.18.1	GROUP EMERGENC ALERT ACK from the UE.....	243
5.5.5.18.2	GROUP EMERGENC ALERT ACK from the SS	243
5.5.5.19	GROUP EMERGENCY ALERT CANCEL.....	243

5.5.5.19.1	GROUP EMERGENCY ALERT CANCEL from the UE	243
5.5.5.19.2	GROUP EMERGENCY ALERT CANCEL from the SS	243
5.5.5.20	GROUP EMERGENCY ALERT CANCEL ACK	243
5.5.5.20.1	GROUP EMERGENCY ALERT CANCEL ACK from the UE	243
5.5.5.20.2	GROUP EMERGENCY ALERT CANCEL ACK from the SS	244
5.5.6	Default MCPTT media plane control messages and other information elements	244
5.5.6.1	General	244
5.5.6.2	Floor Request	245
5.5.6.3	Floor Granted	246
5.5.6.4	Floor Deny	247
5.5.6.5	Floor Release	248
5.5.6.6	Floor Idle	249
5.5.6.7	Floor Taken	250
5.5.6.8	Floor Revoke	251
5.5.6.9	Floor Queue Position Request	252
5.5.6.10	Floor Queue Position Info	253
5.5.6.11	Floor Ack	254
5.5.6.12	Connect	255
5.5.6.13	Disconnect	256
5.5.6.14	Acknowledgement	256
5.5.6.15	Map Group To Bearer	257
5.5.6.16	Unmap Group To Bearer	259
5.5.7	Default MCPTT group management messages and other information elements	259
5.5.7.1	MCPTT Group Configuration	259
5.5.8	Default MCPTT configuration management messages and other information elements	266
5.5.8.1	MCPTT Initial UE Configuration	266
5.5.8.2	MCPTT UE Configuration	272
5.5.8.3	MCPTT User Profile	273
5.5.8.4	MCPTT Service Configuration	281
5.5.9	Default miscellaneous messages and other information elements	285
5.5.9.1	MIKEY-SAKKE I_MESSAGE	285
-	CSK distribution	285
-	Private call	292
-	GMK distribution	298
5.5.10	Common MCPTT test USIM parameters	303
5.5.10.1	General	303
5.5.10.2	Default settings for the Elementary Files (EFs)	303
5.5.11	Default MCVideo Transmission Control Messages and other Information Elements	304
5.5.11.1	Transmission Control Specific Messages Sent by the Transmission Participant	304
5.5.11.1.1	Transmission Request	304
5.5.11.1.2	Transmission Release	306
5.5.11.1.3	Queue Position Request	308
5.5.11.1.4	Receive Media Request	310
5.5.11.1.5	Transmission Cancel Request	313
5.5.11.1.6	Remote Transmission Request	314
5.5.11.1.7	Remote Transmission Cancel Request	315
5.5.11.2	Transmission Control Specific Messages Sent by the Transmission Control Server	316
5.5.11.2.1	Transmission Granted	316
5.5.11.2.2	Transmission Rejected	317
5.5.11.2.3	Transmission Arbitration Taken	319
5.5.11.2.4	Transmission Arbitration Release	322
5.5.11.2.5	Transmission Revoked	324
5.5.11.2.6	Queue Position Info	327
5.5.11.2.7	Media Transmission Notification	328
5.5.11.2.8	Receive Media Response	330
5.5.11.2.9	Media Reception Notification	333
5.5.11.2.10	Transmission Cancel Response	336
5.5.11.2.11	Transmission Cancel Request Notify	336
5.5.11.2.12	Remote Transmission Response	337
5.5.11.2.13	Remote Transmission Cancel Response	337
5.5.11.2.14	Media Reception Override Notification	338
5.5.11.2.15	Transmission End Notify	338

5.5.11.2.16 Transmission Idle339

5.5.11.3 Transmission control specific messages sent by both the transmission control server and
transmission control participant 340

5.5.11.3.1 Transmission End Request 340

5.5.11.3.2 Transmission End Response 341

5.5.11.3.3 Media Reception End Request 342

5.5.11.3.4 Media Reception End Response 343

5.5.11.3.5 Transmission Control Ack..... 344

5.6 Reference configurations..... 345

5.6.1 General..... 345

5.6.2 Key material for provisioning of End-to-end communication security 346

5.6.3 XML schema for MCPTT location information 347

Annex A (informative): Change history353

History356

iTeh STANDARD PREVIEW
 (standards.iteh.ai)
 Full standard:
<https://standards.iteh.ai/catalog/standards/sist/d1e49b23-11d9-4dba-a869-17e1056adc90/etsi-ts-136-579-1-v14.5.0-2020-01>

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.

The present document is part 1 of a multi-part deliverable covering conformance test specification for Mission Critical Services over LTE consisting of:

3GPP TS 36.579-1: "Mission Critical (MC) services over LTE; Part 1: Common test environment" (the present document)

3GPP TS 36.579-2 [2]: "Mission Critical (MC) services over LTE; Part 2: Mission Critical Push To Talk (MCPTT) User Equipment (UE) Protocol conformance specification"

3GPP TS 36.579-3 [3]: "Mission Critical (MC) services over LTE; Part 3: Mission Critical Push To Talk (MCPTT) Server Application test specification"

3GPP TS 36.579-4 [4]: "Mission Critical (MC) services over LTE; Part 4: Test Applicability and Implementation Conformance Statement (ICS)"

3GPP TS 36.579-5 [5]: "Mission Critical (MC) services over LTE; Part 5: Abstract test suite (ATS)"

3GPP TS 36.579-6 [84]: "Mission Critical (MC) services over LTE; Part 6: Mission Critical Video (MCVideo) User Equipment (UE) Protocol conformance specification"

3GPP TS 36.579-7 [85]: "Mission Critical (MC) services over LTE; Part 7: Mission Critical Data (MCData) User Equipment (UE) Protocol conformance specification"

1 Scope

The present document defines the common test environment required for testing Client and Server implementations for compliance to the Mission Critical Services over LTE protocol requirements defined by 3GPP.

It contains definitions of reference conditions and test signals, default messages and other parameters, generic procedures, and, common requirements for test equipment with the goal for facilitating testing in general and test procedures specification in particular. Various parts of its content are referred to from other parts of the Mission Critical Services over LTE protocol conformance testing specification e.g. TS 36.579-2 [2], TS 36.579-3 [3], 3GPP TS 36.579-6 [84], 3GPP TS 36.579-7 [85].

The present document does not define the common test environment required for testing the implementation of the underlying LTE protocols, i.e. the LTE bearers used for transport of the Mission Critical Services signalling and media. This is defined in TS 36.508 [6] and referred to from the present document whenever needed.

In regard to default messages or other information elements contents, the present document refers to content defined in requirements specifications specified by 3GPP or other organisations.

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 36.579-2: "Mission Critical (MC) services over LTE; Part 2: Mission Critical Push To Talk (MCPTT) User Equipment (UE) Protocol conformance specification".
- [3] 3GPP TS 36.579-3: "Mission Critical (MC) services over LTE; Part 3: Mission Critical Push To Talk (MCPTT) Server Application test specification".
- [4] 3GPP TS 36.579-4: "Mission Critical (MC) services over LTE; Part 4: Test Applicability and Implementation Conformance Statement (ICS)".
- [5] 3GPP TS 36.579-5: "Mission Critical (MC) services over LTE; Part 5: Abstract test suite (ATS)".
- [6] 3GPP TS 36.508: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); Common Test Environments for User Equipment (UE) Conformance Testing".
- [7] 3GPP TS 22.179: "Mission Critical Push To Talk (MCPTT) over LTE; Stage 1".
- [8] 3GPP TS 23.179: "Functional architecture and information flows to support mission critical communication services; Stage 2".
- [9] 3GPP TS 24.379: "Mission Critical Push To Talk (MCPTT) call control; Protocol specification".
- [10] 3GPP TS 24.380: "Mission Critical Push To Talk (MCPTT) floor control; Protocol specification".
- [11] 3GPP TS 24.481: "Mission Critical Services (MCS) group management; Protocol specification".
- [12] 3GPP TS 24.482: "Mission Critical Services (MCS) identity management; Protocol specification".
- [13] 3GPP TS 24.483: "Mission Critical Services (MCS) Management Object (MO)".

- [14] 3GPP TS 24.484: "Mission Critical Services (MCS) configuration management; Protocol specification".
- [15] 3GPP TS 33.179: "Security of Mission Critical Push-To-Talk (MCPTT) over LTE".
- [16] 3GPP TS 24.229: "IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".
- [17] Void
- [18] Void
- [19] Void
- [20] Void
- [21] Void
- [22] IETF RFC 3261 (June 2002): "SIP: Session Initiation Protocol".
- [23] IETF RFC 6509 (February 2012): "MIKEY-SAKKE: Sakai-Kasahara Key Encryption in Multimedia Internet KEYing (MIKEY)".
- [24] IETF RFC 3830: "MIKEY: Multimedia Internet KEYing".
- [25] IETF RFC 6043: "MIKEY-TICKET: Ticket-Based Modes of Key Distribution in Multimedia Internet KEYing (MIKEY)".
- [26] IETF RFC 2616: "Hypertext Transfer Protocol -- HTTP/1.1".
- [27] IETF RFC 4566 (July 2006): "SDP: Session Description Protocol".
- [28] Void
- [29] IETF RFC 3841 (August 2004): "Caller Preferences for the Session Initiation Protocol (SIP)".
- [30] IETF RFC 4028 (April 2005): "Session Timers in the Session Initiation Protocol (SIP)".
- [31] IETF RFC 6050 (November 2010): "A Session Initiation Protocol (SIP) Extension for the Identification of Services".
- [32] IETF RFC 3325 (November 2002): "Private Extensions to the Session Initiation Protocol (SIP) for Asserted Identity within Trusted Networks".
- [33] IETF RFC 3840 (August 2004): "Indicating User Agent Capabilities in the Session Initiation Protocol (SIP)".
- [34] IETF RFC 5373 (November 2008): "Requesting Answering Modes for the Session Initiation Protocol (SIP)".
- [35] IETF RFC 5366 (October 2008): "Conference Establishment Using Request-Contained Lists in the Session Initiation Protocol (SIP)".
- [36] IETF RFC 4488 (May 2006): "Suppression of Session Initiation Protocol (SIP) REFER Method Implicit Subscription".
- [37] IETF RFC 4538 (June 2006): "Request Authorization through Dialog Identification in the Session Initiation Protocol (SIP)".
- [38] IETF RFC 3515 (April 2003): "The Session Initiation Protocol (SIP) Refer Method".
- [39] IETF RFC 6665 (July 2012): "SIP-Specific Event Notification".
- [40] IETF RFC 4412 (February 2006): "Communications Resource Priority for the Session Initiation Protocol (SIP)".
- [41] Void

- [42] Void
- [43] IETF RFC 3903 (October 2004): "Session Initiation Protocol (SIP) Extension for Event State Publication".
- [44] IETF RFC 4567 (July 2006): "Key Management Extensions for Session Description Protocol (SDP) and Real Time Streaming Protocol (RTSP)".
- [45] IETF RFC 8101 "IANA Registration of New Session Initiation Protocol (SIP) Resource-Priority Namespace for Mission Critical Push To Talk service".
- [46] Void
- [47] Void
- [48] IETF RFC 4661 (September 2006): "An Extensible Markup Language (XML)-Based Format for Event Notification Filtering".
- [49] Void
- [50] Void
- [51] IETF RFC 7913 (June 2016): "P-Access-Network-Info ABNF Update".
- [52] IETF RFC 7315 (July 2014): "Private Header (P-Header) Extensions to the Session Initiation Protocol (SIP) for the 3GPP".
- [53] IETF RFC 3329 (January 2003): "Security Mechanism Agreement for the Session Initiation Protocol (SIP)".
- [54] IETF RFC 5031 (January 2008): "A Uniform Resource Name (URN) for Emergency and Other Well-Known Services".
- [55] IETF RFC 3581 (August 2003): "An Extension to the Session Initiation Protocol (SIP) for Symmetric Response Routing".
- [56] IETF RFC 3312 (October 2002): "Integration of resource management and Session Initiation Protocol (SIP)".
- [57] IETF RFC 7134: "The Management Policy of the Resource Priority Header (RPH) Registry Changed to "IETF Review"!".
- [58] IETF RFC 5621 (September 2009): "Message Body Handling in the Session Initiation Protocol (SIP)".
- [59] IETF RFC 4867: "RTP Payload Format and File Storage Format for the Adaptive Multi-Rate (AMR) and Adaptive Multi-Rate Wideband (AMR-WB) Audio Codecs".
- [60] IETF RFC 5009 (September 2007): "Private Header (P-Header) Extension to the Session Initiation Protocol (SIP) for Authorization of Early Media".
- [61] IETF RFC 3842 (August 2004) "A Message Summary and Message Waiting Indication Event Package for the Session Initiation Protocol (SIP)".
- [62] IETF RFC 6442 (December 2011): "Location Conveyance for the Session Initiation Protocol".
- [63] IETF RFC 6335: "Internet Assigned Numbers Authority (IANA) Procedures for the Management of the Service Name and Transport Protocol Port Number Registry".
- [64] 3GPP TS 26.114: "IP Multimedia Subsystem (IMS); Multimedia telephony; Media handling and interaction".
- [65] 3GPP TS 23.032: "Universal Geographical Area Description (GAD)".
- [66] 3GPP TS 26.171: "Speech codec speech processing functions; Adaptive Multi-Rate - Wideband (AMR-WB) speech codec; General description".