ETSI TS 137 579-7 V17.5.0 (2026-04)

TECHNICAL SPECIFICATION

LTE;
5G;
Mission Critical (MC) services;
Part 7: Mission Critical Data (MCData) User Equipment (UE) Protocol conformance specification
(3GPP TS 37.579-7 version 17.5.0 Release 17)

Reference
RTS/TSGR-0537579-7vh50

Keywords
5G,LTE

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 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are 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 IPR online database.

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, 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.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™**, **LTE™** and **5G™** logo 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.

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 at 3GPP to ETSI numbering cross-referencing.

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

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 consisting of:

3GPP TS 37.579-1 [2]: "Mission Critical (MC) services; Part 1: Common test environment" (the present document)

3GPP TS 37.579-2 [24]: "Mission Critical (MC) services; Part 2: Mission Critical Push To Talk (MCPTT) User Equipment (UE) Protocol conformance specification"

3GPP TS 37.579-4 [4]: "Mission Critical (MC) services; Part 4: Test Applicability and Implementation Conformance Statement (ICS)"

3GPP TS 37.579-5 [5]: "Mission Critical (MC) services; Part 5: Abstract test suite (ATS)"

3GPP TS 37.579-6 [25]: "Mission Critical (MC) services: Mission Critical Video (MCVideo) User Equipment (UE) Protocol conformance specification"

3GPP TS 37.579-7: "Mission Critical (MC) services; Part 7: Mission Critical Data (MCData) User Equipment (UE) Protocol conformance specification"

In the present document, modal verbs have the following meanings:

shall indicates a mandatory requirement to do something

shall not indicates an interdiction (prohibition) to do something

The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.

The constructions "must" and "must not" are not used as substitutes for "shall" and "shall not". Their use is avoided insofar as possible, and they are not used in a normative context except in a direct citation from an external, referenced, non-3GPP document, or so as to maintain continuity of style when extending or modifying the provisions of such a referenced document.

should indicates a recommendation to do something

should not indicates a recommendation not to do something

may indicates permission to do something

need not indicates permission not to do something

The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

can indicates that something is possible

cannot indicates that something is impossible

The constructions "can" and "cannot" are not substitutes for "may" and "need not".

will indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

will not indicates that something is certain or expected not to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

might indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

might not indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

is (or any other verb in the indicative mood) indicates a statement of fact

is not (or any other negative verb in the indicative mood) indicates a statement of fact

The constructions "is" and "is not" do not indicate requirements.

1 Scope

The present document specifies the protocol conformance testing for testing a MCData Client for compliance to the Mission Critical Data (MCData) protocol requirements defined by 3GPP.

In particular the present document contains:

- the overall test structure;
- the test configurations;
- the conformance requirement and reference to the core specifications;
- the test purposes; and
- a brief description of the test procedure, the specific test requirements and short message exchange table.

The present document is valid for MCData Clients implemented according to 3GPP releases starting from Release 13 up to the Release indicated on the cover page of the present document.

The following information relevant to testing specified in the present document could be found in accompanying specifications:

- default setting of the test parameters TS 37.579-1 [2];
- Implementation Conformance Statement (ICS) TS 37.579-4 [4] and Implementation eXtra Information for Testing (IXIT) TS 37.579-5 [5];
- the applicability of each test case TS 37.579-4 [4].

The test cases are expected to be executed through the 3GPP radio interface. The present document does not specify the protocol conformance testing for the 3GPP bearers which carry the MCData data sent or received by the MCData Client and which are required to be supported by the UE in which the MCData Client is installed. This is defined in TS 36.523-1 [6] for EPS (LTE) or TS 38.523-1 [45] for NR/5GC.

According to 3GPP drafting rules, the references clause shall list only documents that are explicitly mentioned in the deliverable. This reference is not used within the document and thus shall be removed from references clause.

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 37.579-1: "Mission Critical (MC) services; Part 1: Common test environment".

[3] Void.

[4] 3GPP TS 37.579-4: " Mission Critical (MC) services; Part 4: Test Applicability and Implementation Conformance Statement (ICS).

[5] 3GPP TS 37.579-5: "Mission Critical (MC) services; Part 5: Abstract test suite (ATS)".

[6] 3GPP TS 36.523-1: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification".

[7] Void

[8] Void

[9] 3GPP TS 24.379: "Mission Critical Push To Talk (MCPTT) call control; Protocol specification".

[10] Void

[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] 3GPP TS 24.301: "Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3".

[18] Void

[19] 3GPP TS 36.509: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Special conformance testing functions for User Equipment (UE)".

[20] 3GPP TS 36.508: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access (E-UTRAN); Common Test Environments for User Equipment (UE) Conformance Testing".

[21] OpenID Connect 1.0: "OpenID Connect Core 1.0 incorporating errata set 1", http://openid.net/specs/openid-connect-core-1_0.html.

[22] 3GPP TS 33.310: "Network Domain Security (NDS); Authentication Framework (AF)".

[23] Void

[24] 3GPP TS 37.579-2: "Mission Critical (MC) services; Part 2: Mission Critical Push To Talk (MCPTT) User Equipment (UE) Protocol conformance specification".

[25] 3GPP TS 37.579-6: "Mission Critical (MC) services; Part 6: Mission Critical Video (MCVideo) User Equipment (UE) Protocol conformance specification ".

[26] Void

[27] Void

[28] Void

[29] Void

[30] 3GPP TS 33.180: "Security of the mission critical service".

[31] 3GPP TS 24.282: "Mission Critical Data (MCData) signalling control; Protocol specification".

[32] 3GPP TS 24.582: "Mission Critical Data (MCData) media plane control; Protocol specification".

[33] 3GPP TS 23.282: "Functional architecture and information flows to support Mission Critical Data (MCData); Stage 2".

[34] 3GPP TS 22.282: "Mission Critical Data over LTE. Status: Under change control".

[35] Void

[36] IETF RFC 4826 (May 2007): "Extensible Markup Language (XML) Formats for Representing Resource Lists".

[37] IETF RFC 4122 (July 2005): "A Universally Unique IDentifier (UUID) URN Namespace".

[38] IETF RFC 2046: "Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types".

[39] 3GPP TS 23.032: "Universal Geographical Area Description (GAD)".

[40] OMA-TS-REST_NetAPI_NMS-V1_0-20190528-C: "RESTful Network API for Network Message Storage".

[41] IETF RFC 4567: "Key Management Extensions for Session Description Protocol (SDP) and Real Time Streaming Protocol (RTSP)"

[42] OMA-TS-REST_NetAPI_Common-V1_0-20180116-A: "Common definitions for RESTful Network APIs"

[43] IETF RFC 2388: "Returning Values from Forms: multipart/form-data".

[44] IETF RFC 2616: "Hypertext Transfer Protocol -- HTTP/1.1".

[45] 3GPP TS 38.523-1: " 5GS; User Equipment (UE) conformance specification;Part 1: Protocol"

[46] OMA-TS-REST_NetAPI_NotificationChannel-V1_0-20200319-C: “RESTful Network API for Notification Channel”.

[47] OMA-SUP-XSD_rest_netapi_notificationchannel-V1_0: “XML data type definitions for the RESTful Network API for Notification Channel”, https://www.openmobilealliance.org/tech/profiles/rest_netapi_notificationchannel-v1_0.xsd

[48] OMA-SUP-XSD_rest_netapi_nms-V1_0: “XML data type definitions for the RESTful Network API for Network Message Storage (NMS)”, http://www.openmobilealliance.org/tech/profiles/rest_netapi_nms-v1_0.xsd

3 Definitions of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in 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 TR 21.905 [1].

For the purpose of the present document, the following terms given in TS 23.282 [33] apply:

Auto-receive
Conversation identifier
Data stream
FD disposition
MCData client
MCData group
MCData group affiliation
MCData group communication
MCData group de-affiliation
MCData ID
MCData server

MCData service
MCData UE
MCData user
Reception control
Reply identifier
SDS data
SDS disposition
Standalone communication
Transaction identifier
Transmission control

For the purpose of the present document, the following terms given in TS 22.282 [34] apply:

Conversation
Conversation ID
MCData Conversation Hang Time
MCData System

For the purpose of the present document, the following terms given in 3GPP TS 33.180 [30] apply:

Client Server Key (CSK)
Private Call Key (PCK)
Signalling Protection Key (SPK)
XML Protection Key (XPK)

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

CSK	Client-Server Key
DS	Data Streaming
ECGI	E-UTRAN Cell Global Identification
FD	File Distribution
FFS	For Further Study
ICS	Implementation Conformance Statement
IOPS	Isolated E-UTRAN Operation for Public Safety
IUT	Implementation Under Test
IXIT	Implementation eXtra Information for Testing
MBMS	Multimedia Broadcast and Multicast Service
MBSFN	Multimedia Broadcast multicast service Single Frequency Network
MC	Mission Critical
MCData	Mission Critical Data
MCData group ID	MCData group Identity
MCPTT	Mission Critical Push To Talk
MCS	Mission Critical Service
MCVideo	Mission Critical Video
MDEA	MCData Emergency Alert
MIME	Multipurpose Internet Mail Extensions
MONP	MC service Off-Network Protocol
NAT	Network Address Translation
PCC	Policy and Charging Control
PCCB	Private Call Call-Back
PCRF	Policy and Charging Rules Function
PLMN	Public Land Mobile Network

QCI	QoS Class Identifier
RTP	Real-time Transport Protocol
SAI	Service Area Identifier
SDP	Session Description Protocol
SDS	Short Data Service
SIP	Session Initiation Protocol
SPK	Signalling Protection Key
SS	System Simulator
SSRC	Synchronization SouRCe
TGI	Temporary MCVideo Group Identity
TMGI	Temporary Mobile Group Identity
TP	Transmission Point
TP	Test Purpose
UE	User Equipment
UM	Unacknowledged Mode
URI	Uniform Resource Identifier
XPK	XML Protection Key

4 General

4.1 Test methodology

4.1.1 Testing of optional functions and procedures

Any function or procedure which is optional, may be subject to a conformance test if it is implemented in the MCData Client.

A declaration by the MCData Client supplier (to use the Implementation Conformance Statement (ICS) proforma specified in TS 37.579-4 [4]) is used to determine whether an optional function/procedure has been implemented.

4.1.2 Test interfaces and facilities

Detailed descriptions of the MCData

Client test interfaces and special facilities for testing are provided in 3GPP TS 36.509 [19].

4.2 Implicit testing

For some 3GPP MCData protocol features conformance is not verified explicitly in the present document. This does not imply that correct functioning of these features is not essential, but that these are implicitly tested to a sufficient degree in tests which are not explicitly dedicated to test the feature.

4.3 Repetition of tests

As a general rule, the test cases specified in the present document are highly reproducible and do not need to be repeated unless otherwise stated.

4.4 Handling of differences between conformance requirements in different releases of cores specifications

The conformance requirements which determine the scope of each test case are explicitly copy-pasted from relevant core specifications in the especially dedicated for this clause of each test with the title 'Conformance requirements'.

NOTE: When in the copy/pasted text there are references to other specifications the reference numbers will not match the reference numbers used in the present document. This approach has been taken in order to allow easy copy and then search for conformance requirements in those specifications.

When differences between conformance requirements in different releases of the cores specifications have impact on the Pre-test conditions, Test procedure sequence or/and the Specific message contents, the Conformance requirements related to different releases are specified separately with clear indication of the Release of the spec from which they were copied.

When there is no Release indicated for a conformance requirement text, this should be understood either as the Conformance requirements in the latest version of the spec with release = the TC Applicability release (which can be found in TS 37.579-4 [4], Table 4-1: Applicability of tests and additional information for testing, column 'Release'), or, as the Conformance requirements in the latest version of the spec of the release when the feature was introduced to the core specs.

4.5 Reference conditions

The reference environments used by all signalling and protocol tests is specified in TS 37.579-1 [2]. Where a test requires an environment that is different, this will be specified in the test itself.

For all test cases in this document unless specified otherwise the condition MCDATA applies for all message contents.

4.6 Generic setup procedures

A set of basic generic procedures for MCData Client-Server communication are described in TS 37.579-1 [2]. These procedures will be used in numerous test cases throughout the present document.

5 MCData Client Configuration

5.1 Configuration / Authentication / User Authorization / UE Configuration / User Profile / Key Generation

5.1.1 Test Purpose (TP)

(1)

```
with { UE (MCDATA Client) attached to EPS or 5GS services }
ensure that {
  when { the MCData User activates an MCData application and requests MCData initialisation }
    then { UE (MCDATA Client) performs MCData User Authentication }
            }
```

(2)

```
with { UE (MCDATA Client) user authenticated }
ensure that {
  when { the UE (MCDATA Client) has established a secure HTPP tunnel }
    then { UE (MCDATA Client) performs key management authorization and obtains identity management
key material }
            }
```

(3)

```
with { UE (MCDATA Client) has obtained identity management key material }
ensure that {
  when { the UE (MCDATA Client) requests user service authorization }
    then { UE (MCDATA Client) sends a user authorization request to the MCData Server }
            }
```