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TECHNICAL SPECIFICATION

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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:

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where:

x the first digit:

1 presented to TSG for information;

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y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

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)".

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[47]   Void

[48]   IETF RFC 4661 (September 2006): "An Extensible Markup Language (XML)-Based Format for Event Notification Filtering".

[49]   Void

[50]   Void

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[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".

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[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".

[67]   3GPP TS 33.303: "Proximity-based Services (ProSe); Security aspects".

[68]   3GPP TS 23.303: "Proximity-based services (ProSe); Stage 2".

[69]   3GPP TS 23.003: "Numbering, addressing and identification".

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[74]   3GPP TS 36.523-3: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 3: Abstract Test Suites (ATS)".

[75]   3GPP TS 36.523-2: "User Equipment (UE) conformance specification; Part 2: Implementation Conformance Statement (ICS) proforma specification".

[76]   IETF RFC 3550: "RTP: A Transport Protocol for Real-Time Applications".

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

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

[86]   3GPP TS 24.281: "Mission Critical Video (MCVideo) signalling control; Protocol specification".

[87]   3GPP TS 24.282: "Mission Critical Data (MCData) signalling control; Protocol specification".

[88]   3GPP TS 24.581: "Mission Critical Video (MCVideo) media plane control; Protocol specification".

[89]   3GPP TS 24.582: "Mission Critical Data (MCData) media plane control; Protocol specification".

[90]   3GPP TS 23.281: "Functional architecture and information flows to support Mission Critical Video (MCVideo); Stage 2".

[91]   3GPP TS 23.282: "Functional architecture and information flows to support Mission Critical Data (MCData); Stage 2".

[92]   3GPP TS 22.281: "Mission Critical Video over LTE".

[93]   3GPP TS 22.282: "Mission Critical Data over LTE".

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[100] IETF RFC 7636: "Proof Key for Code Exchange by OAuth Public Clients".

[101] IETF RFC 7519: "JSON Web Token (JWT)".

[102] IETF RFC 7515: "JSON Web Signature (JWS)".

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[104] IETF RFC 6750 "The OAuth 2.0 Authorization Framework: Bearer Token Usage"

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

[107] IETF RFC 5874: "An Extensible Markup Language (XML) Document Format for Indicating a Change in XML Configuration Access Protocol (XCAP) Resources".

[108] W3C: "XML Encryption Syntax and Processing Version 1.1", https://www.w3.org/TR/xmlenc-core1/.

[109] IETF RFC 5322: "Internet Message Format".

[110] 3GPP TS 22.280: "Common functional architecture to support mission critical services; Stage 2".

[111] IETF RFC 2854: "The 'text/html' Media Type".

[112] IETF RFC 7303: "XML Media Types".

[113] IETF RFC 3556: "Session Description Protocol (SDP) Bandwidth Modifiers for RTP Control Protocol (RTCP) Bandwidth".

[114] IETF RFC 3863 (August 2004): "Presence Information Data Format (PIDF)".

[115] IETF RFC 5245: "Interactive Connectivity Establishment (ICE): A Protocol for Network Address Translator (NAT) Traversal for Offer/Answer Protocols"

[116] IETF RFC 5576: "Source-Specific Media Attributes in the Session Description Protocol (SDP)"

[117] IETF RFC 3891: The Session Initiation Protocol (SIP) "Replaces" Header

[118] IETF RFC 7231: Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content

[119] IETF RFC 4145: "TCP-Based Media Transport in the Session Description Protocol (SDP)"

[120] IETF RFC 4975: "The Message Session Relay Protocol (MSRP)"

[121] IETF RFC 4976: "Relay Extensions for the Message Session Relay Protocol (MSRP)"

[122] IETF RFC 6135: "An Alternative Connection Model for the Message Session Relay Protocol (MSRP)"

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[124] IETF RFC 5547: "A Session Description Protocol (SDP) Offer/Answer Mechanism to Enable File Transfer"

[125] IETF RFC 3326: "The Reason Header Field for the Session Initiation Protocol (SIP)"

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[127] IETF RFC 3326: "A Session Initiation Protocol (SIP) Event Package for Conference State"

[128] IETF RFC 5939: "Session Description Protocol (SDP) Capability Negotiation"

[129] IETF RFC 6184: "RTP Payload Format for H.264 Video"

[130] IETF RFC 4585: "Extended RTP Profile for Real-time Transport Control Protocol (RTCP)-Based Feedback (RTP/AVPF)"

3 Definitions, symbols and abbreviations

Editor's Note: Implication to the content of the present chapter due to the introduction of MCVideo and MCData are FFS.

3.1 Definitions

For the purposes of the present document, the terms and definitions 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 3GPP TR 21.905 [1].

For the purpose of the present document, the following terms and definitions given in TS 24.379 [9] apply:

An MCPTT user is affiliated to an MCPTT group
An MCPTT user is affiliated to an MCPTT group at an MCPTT client
Affiliation status
Group identity
In-progress emergency private call state
In-progress imminent peril group state
MCPTT client ID
MCPTT emergency alert state
MCPTT emergency group state
MCPTT emergency group call state
MCPTT emergency private call state
MCPTT emergency private priority state
MCPTT imminent peril group call state
MCPTT imminent peril group state
MCPTT private emergency alert state
MCPTT speech
Media-floor control entity
Temporary MCPTT group identity
Trusted mutual aid
Untrusted mutual aid

For the purposes of the present document, the following terms and definitions given in TS 22.179 [7] apply:

In-progress emergency
MCPTT emergency alert
MCPTT emergency group call
MCPTT emergency state
Partner MCPTT system
Primary MCPTT system

For the purpose of the present document, the following terms and definitions given in 3GPP TS 24.380 [10] apply:

MBMS subchannel

For the purpose of the present document, the following terms and definitions given in 3GPP TS 23.179 [8] apply:

Pre-selected MCPTT user profile

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP 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 3GPP TR 21.905 [1].

ECGI	E-UTRAN Cell Global Identification
FFS	For Further Study
ICS	Implementation Conformance Statement
IPEG	In-Progress Emergency Group
IPEPC	In-Progress Emergency Private Call
IPIG	In-Progress Imminent peril Group
IUT	Implementation Under Test
IXIT	Implementation eXtra Information for Testing
MBMS	Multimedia Broadcast and Multicast Service
MBSFN	Multimedia Broadcast multicast service Single Frequency Network
MCData	Mission Critical Data
MCPTT	Mission Critical Push To Talk
MCPTT group ID	MCPTT group IDentity
MCVideo	Mission Critical Video
MCX	Mission Critical X, with X = PTT or X= Video or X= Data
MEA	MCPTT Emergency Alert
MEG	MCPTT Emergency Group
MEGC	MCPTT Emergency Group Call
MEPC	MCPTT Emergency Private Call
MEPP	MCPTT Emergency Private Priority
MES	MCPTT Emergency State
MIME	Multipurpose Internet Mail Extensions
MIG	MCPTT Imminent peril Group
MIGC	MCPTT Imminent peril Group Call
MONP	MCPTT Off-Network Protocol
MPEA	MCPTT Private Emergency Alert
NAT	Network Address Translation
QCI	QoS Class Identifier
RTP	Real-time Transport Protocol
SAI	Service Area Identifier
SDP	Session Description Protocol
SIP	Session Initiation Protocol
SS	System Simulator
SSRC	Synchronization SouRCe
TGI	Temporary MCPTT Group Identity
TMGI	Temporary Mobile Group Identity
TP	Transmission Point
URI	Uniform Resource Identifier

4 General

Editor's note: Implication to the content of the present chapter due to the introduction of MCVideo and MCData are FFS.

4.0   Introduction

Depending on the TS 36.579-5[5] test model being used, either the LTE UE (with the MCX Client installed) is considered as the IUT (MCX EUTRA test model), or, only the MCX Client is considered as the IUT (MCX IPCAN test model).

4.1   MCPTT Conformance testing test points overview

Figure 4.1.1 provides a general overview of all MCPTT players which may have a role in different conformance testing scenarios together with virtual test points representing the information flow which is intended for conformance testing. The figure is mainly for descriptive purposes and may not necessarily represent a real MCPTT deployment or implementation.
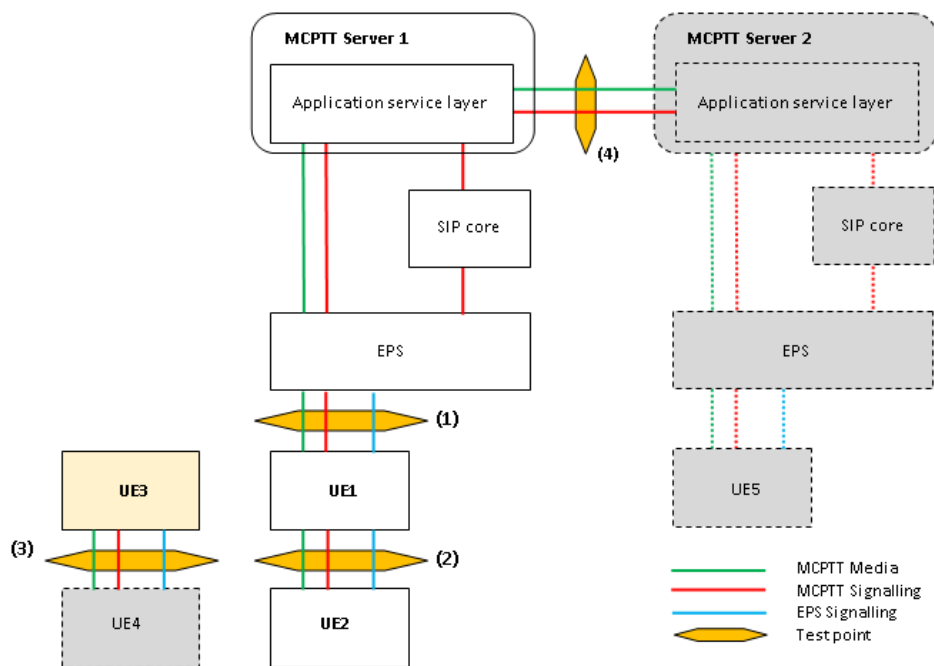
Figure 4.1.1: MCPTT Conformance testing test points model

NOTE 1:   Which of the shown entities will be simulated and which will be real implementation depends on the test scenario. In the test scenarios in which they play a part, the entities presented with dashed borders and grey fill will be always simulated whereas, the entities with light yellow fill (UE3) will be Implementation Under Test (IUT). The entities with white fill will be either simulated or IUTs or real implementation (e.g. network) depending on the test scenario.

NOTE 2:   While showing the different players, figure 4.1.1 should not be understood as showing test environment implementation.

The test points shown on Figure 4.1.1 cover behaviour/requirements observed at various reference points and communication scenarios:

-    MCPTT on-network (whenever relevant, reference points as specified in TS 23.179 [8] Functional model description clause 7.3.1 'On-network functional model' are referred):

    -    Application plane (MCPTT-1, MCPTT-4, MCPTT-7, MCPTT-8 and MCPTT-9), and, (CSC-1, CSC-2, CSC-4 and CSC-8); Signalling control plane (SIP-1, HTTP-1 and HTTP-2). Test point: (1) or (2). IUT: the UE or the MCPTT Client or the MCPTT Server.

- MCPTT-3 (between different MCPTT Servers), CSC-7 (other group management Servers, normally associated with other MCPTT Servers); Signalling control plane (SIP-2, HTTP-1, HTTP2 and HTTP-3). Test point: (4). IUT: the MCPTT Server.

- MCPTT off-network (TS 23.179 [8], clause 7.3.2 'Off-network functional model'). Test point: (3). IUT: the UE.

- LTE Legacy requirements between UE and EPS and between 2 UEs (covering e.g. Bearer Management at the UE side, ProSe including among others UE-to-network relay, MBMS). Test point: (1), (2) or (3).

Figure 4.1.2 provides a general overview of functions distributions at the MCPTT server side when multiple MCPTT Servers are involved. More functional models can be found in TS 24.379 [9].
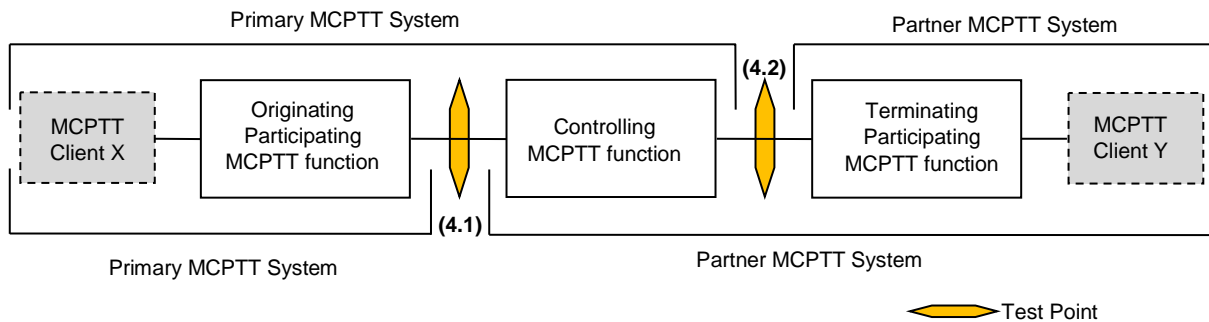
Figure 4.1.2: MCPTT Conformance testing Client-to-Client test points model

NOTE 3: While showing the different players and Server functionality, figure 4.1.2 should not be understood as showing test environment implementation.

The test points shown on Figure 4.1.2 provide an example of how 2 different communication scenarios between 2 MCPTT Servers will result in the communication between the servers being monitored at different test points (4.1) and (4.2). It should be noted that Figure 4.1.2 does not imply the physical existence of 2 test points during MCPTT Server-to-Server testing rather it shows two different information flows which need to be verified for conformance. In practice this will also mean that for testing the MCPTT Server on the Server-to-Server interface (test point 4 on Figure 4.1.1), the System Simulator (SS) will need to implement (i.e. be able to simulate) at least all 3 MCPTT functions.

4.2 MCPTT Conformance testing test environment overview

Based on the test points models shown in clause 4.1 examples for test environment implementations are provided below. Figures 4.2.1 to 4.2.3 show test configuration where the Implementation Under Test (IUT) and the System Simulator communicate, one with the other, over the LTE radio interface (test points (1), (2) and (3)). Figure 4.2.4 shows test configuration where the IUT and the system simulator, simulating MCPTT Clients, communicate, one with the other, over the LTE radio interface (test points (1)). Figures 4.2.5 and 4.2.6 show test configuration where the IUT and the System Simulator communicate, one with the other, over the MCPTT-3 interface, as defined by TS 23.179 [8], clause 7.5.2.4 (test points (4)).
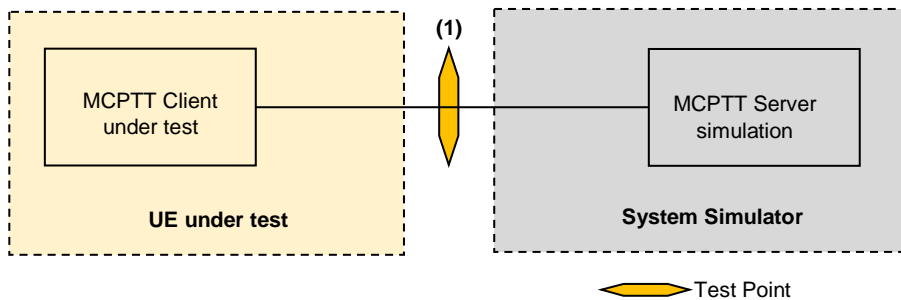
Figure 4.2.1: Testing the MCPTT Client (on-network)

NOTE 1: Figure 4.2.1 covers also the case for testing the UE at interface (1) when the IUT behaves as a Relay. For testing this the existence of another UE playing the role of an UE off-network which uses the Relay to connect to the Server will be needed. This could be implemented by the SS simulating both in similar manner as it is shown on Figure 4.2.2.
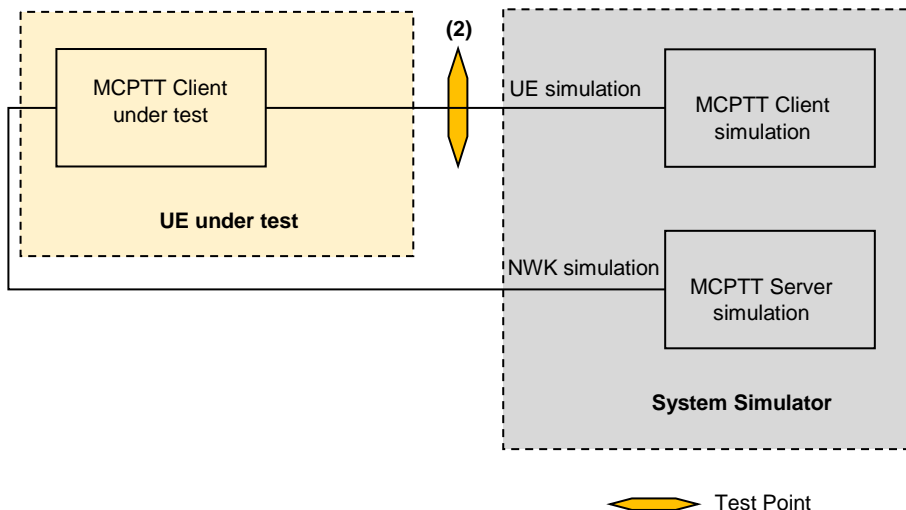
Figure 4.2.2: Testing the MCPTT Client (on-network) Relay side

NOTE 1: Figure 4.2.2 covers the case for testing the UE at interface (2) when the IUT behaves as a Relay. For testing this, the existence of LTE NWK and Server to which the Relay relays the data will be needed. This could be implemented by the SS simulating both.

Test Point
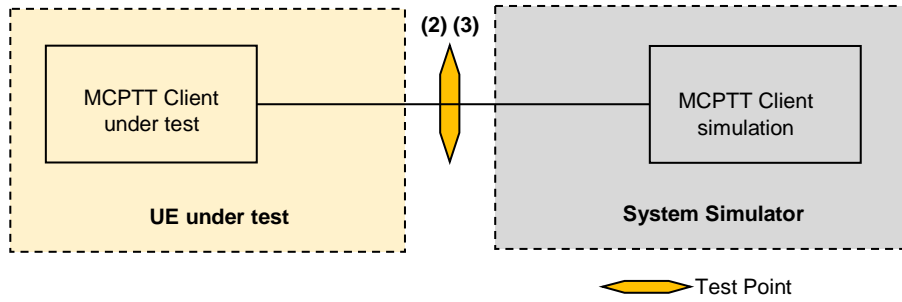
Figure 4.2.3: Testing the MCPTT Client (off-network)

Test Point
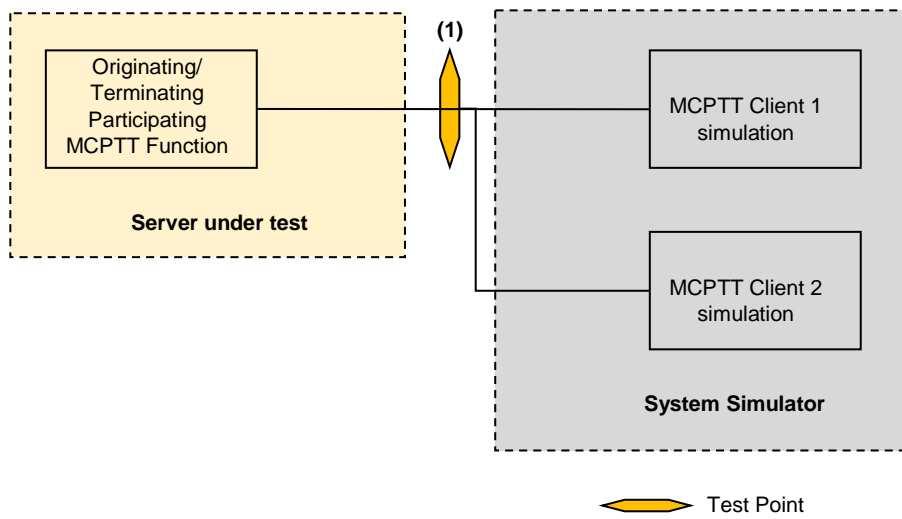
Figure 4.2.4: Testing the MCPTT Server (server-to-client)

Test Point
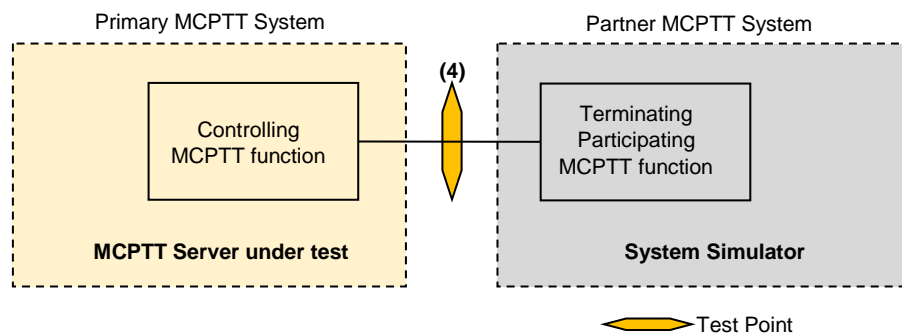
Figure 4.2.5: Testing the MCPTT Server (server-to-server), Controlling function
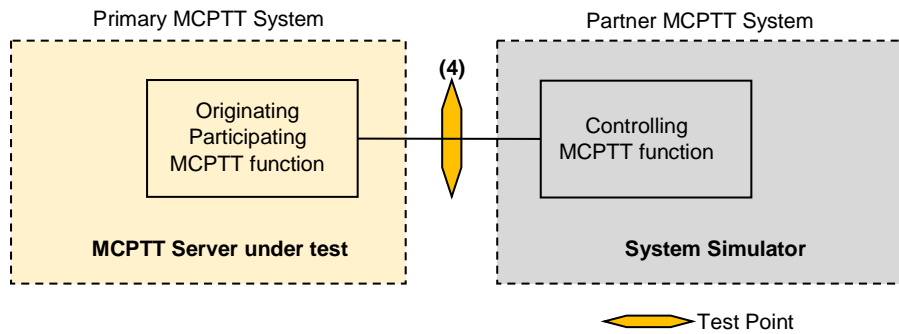
Figure 4.2.6: Testing the MCPTT Server (server-to-server), Originating function

4.3　MCPTT Conformance testing players and roles assumptions

Based on the described in clause 4.2 test environment scenarios a number of players and their roles have been designated to facilitate the test specification and provide a consistent test description.

For the purposes of MCPTT Client testing

　　1 MCPTT Server:

- Server A simulated by the SS (in the case of on-network operation).

　　2 MCPTT Clients:

- Client A installed on the implementation under test

- Client B simulated by the System Simulator (SS) either explicitly (in the case of off-network operations), or, implicitly (in the case of on-network operation).

　　3 MCPTT Users:

- User A registered with Client A and operating on the implementation under test

- User B registered with Client B simulated by the System Simulator (SS) either explicitly (in the case of off-network operations), or, implicitly (in the case of on-network operation); pre-set at User A configuration as User allowed to be called by User A for any types of calls

- User C known to the User A, not involved in any communication, defined for the sole purpose of testing if the User A/Client A can distinguish between different users when choosing one of them for action; pre-set at User A configuration as User allowed to be called by User A for any types of calls.

　　4 MCPTT groups:

- Group A to which User A is implicitly affiliated, pre-set at User A configuration, and, comprising as members User A, User B and User C, to be available throughout the entire testing.

- Group D to which User A is not implicitly affiliated, pre-set at User A configuration, and, comprising as members User B and User C, to be used for testing group affiliation.

- Groups B and C not pre-set at User A configuration, to be used for testing creation and termination of groups.

For the purposes of MCPTT Server testing

　　1 MCPTT Server:

- Server A installed on the implementation under test.

2 MCPTT Clients:

- Client A simulated by the System Simulator (SS)

- Client B simulated by the System Simulator (SS).

2 MCPTT Users:

- User A registered with Client A simulated by the System Simulator (SS) ; pre-set at User A configuration as User allowed to be called by User A for any types of calls

- User B registered with Client B simulated by the System Simulator (SS); pre-set at User A configuration as User allowed to be called by User A for any types of calls

1 MCPTT group:

- Group A to which User A is implicitly affiliated, pre-set at User A configuration, and, comprising as members User A and User B to be available throughout the entire testing.

4.4 References to TS 33.179 and TS 33.180

For the purposes of this Technical Specification, it is assumed that TS 33.180 supersedes TS 33.179 and is a backwards compatible substitute for TS 33.179.

4.5 MCVideo Conformance testing test points overview

Figure 4.5.1 provides a general overview of all MCVideo players which may have a role in different conformance testing scenarios together with virtual test points representing the information flow which is intended for conformance testing. The figure is mainly for descriptive purposes and may not necessarily represent a real MCVideo deployment or implementation.
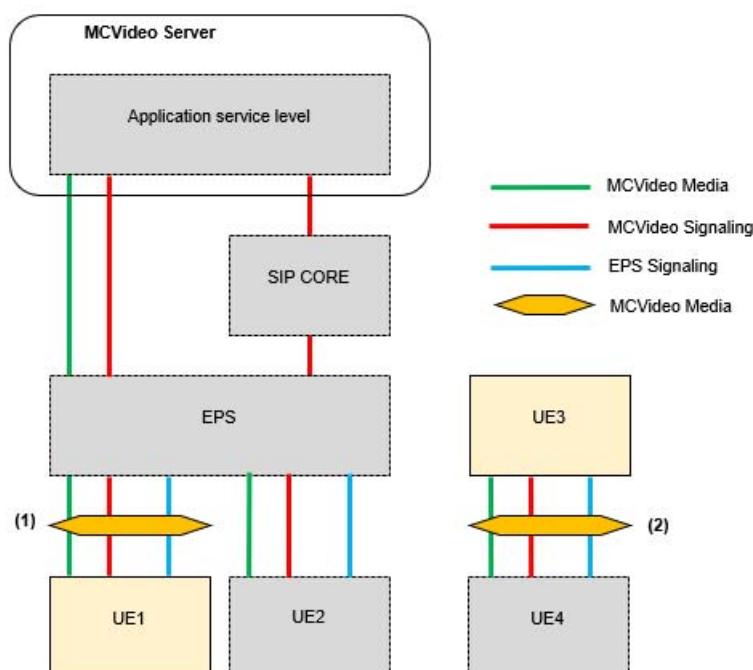
Figure 4.5.1: MCVideo Conformance testing test points model

NOTE 1: Which of the shown entities will be simulated and which will be real implementation depends on the test scenario. In the test scenarios in which they play a part, the entities presented with dashed borders and grey fill will be always simulated whereas, the entities with light yellow fill (UE 1 or UE3) will be Implementation Under Test (IUT).

NOTE 2: While showing the different players, figure 4.5.1 should not be understood as showing test environment implementation.

The test points shown on Figure 4.5.1 cover behaviour/requirements observed at various reference points and communication scenarios:

- MCVideo on-network (TS 23.280 [110] Functional model description clause 7.3.1 'On-network functional model' and TS 23.281 [91] Functional model description clause 6.1.1 'On-network functional model'.):

- Application plane (MCVideo-1, MCVideo-4, MCVideo-5, MCVideo-6, MCVideo-7, MCVideo-8 and MCVideo-9), and, (CSC-1, CSC-2, CSC-4, CSC-8, and CSC-14); Signalling control plane (SIP-1, HTTP-1 and HTTP-2). Test point: (1). IUT: the UE or the MCVideo Client.

- MCVideo off-network (TS 23.280 [110], clause 7.3.2 'Off-network functional model' and TS 23.281 [91], clause 6.1.2 'Off-network functional model'.). Test point: (2). IUT: the UE.

- LTE Legacy requirements between UE and EPS and between 2 UEs (covering e.g. Bearer Management at the UE side, ProSe, MBMS). Test point: (1) or (2).

4.6   MCVideo Conformance testing test environment overview

Based on the test points models shown in clause 4.5 examples for test environment implementations are provided below. Figures 4.6.1 and 4.6.2 show test configuration where the Implementation Under Test (IUT) and the System Simulator communicate, one with the other, over the LTE radio interface (test points (1) and (2)).
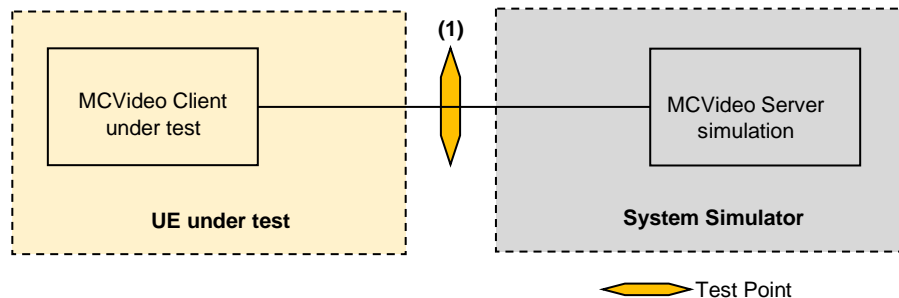
Figure 4.6.1: Testing the MCVideo Client (on-network)
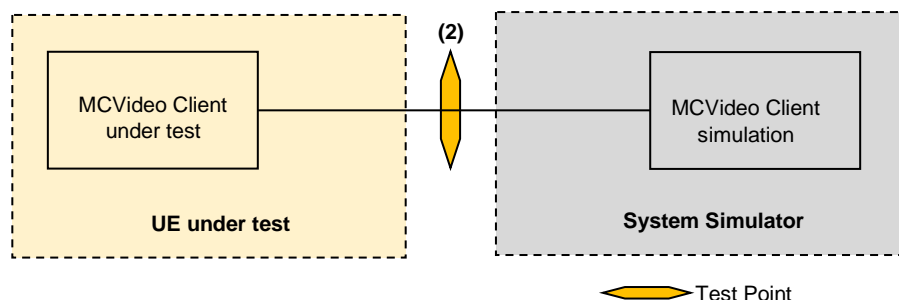
Figure 4.6.2: Testing the MCVideo Client (off-network)

4.7 MCVideo Conformance testing players and roles assumptions

Based on the described test environment scenarios in clause 4.6, a number of players and their roles have been designated to facilitate the test specification and provide a consistent test description.

For the purposes of MCVideo Client testing

1 MCVideo Server:

- Server A simulated by the SS (in the case of on-network operation).

2 MCVideo Clients:

- Client A installed on the implementation under test

- Client B simulated by the System Simulator (SS) either explicitly (in the case of off-network operations), or, implicitly (in the case of on-network operation).

3 MCVideo Users:

- User A registered with Client A and operating on the implementation under test

- User B registered with Client B simulated by the System Simulator (SS) either explicitly (in the case of off-network operations), or, implicitly (in the case of on-network operation); pre-set at User A configuration as User allowed to be called by User A for any types of calls

- User C known to the User A, not involved in any communication, defined for the sole purpose of testing if the User A/Client A can distinguish between different users when choosing one of them for action; pre-set at User A configuration as User allowed to be called by User A for any types of calls.

4 MCVideo groups:

- Group A to which User A is implicitly affiliated, pre-set at User A configuration, and, comprising as members User A, User B and User C, to be available throughout the entire testing.

- Group D to which User A is not implicitly affiliated, pre-set at User A configuration, and, comprising as members User B and User C, to be used for testing group affiliation.

- Groups B and C not pre-set at User A configuration, to be used for testing creation and termination of groups.

4.8 MCData Conformance testing test points overview

Figure 4.8.1 provides a general overview of all MCData players which may have a role in different conformance testing scenarios together with virtual test points representing the information flow which is intended for conformance testing. The figure is mainly for descriptive purposes and may not necessarily represent a real MCData deployment or implementation.
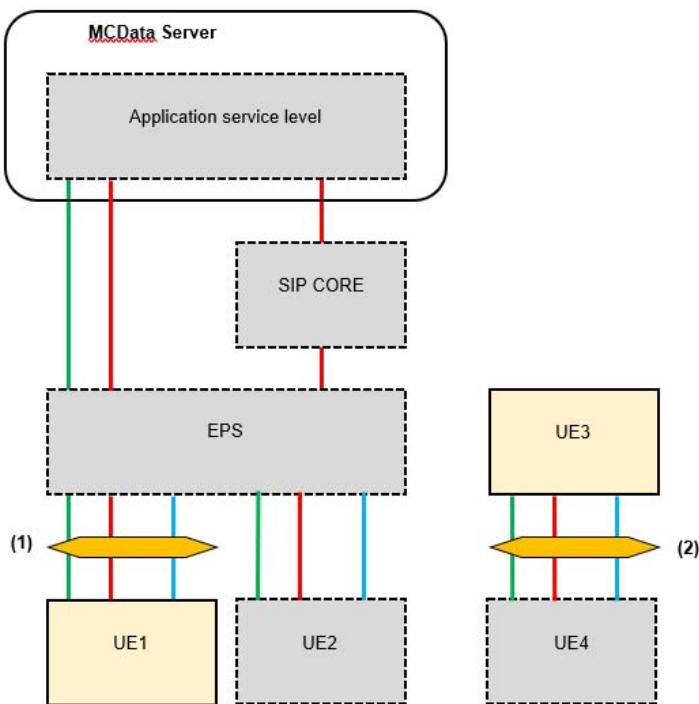
Figure 4.8.1: MCData Conformance testing test points model

NOTE 1: Which of the shown entities will be simulated and which will be real implementation depends on the test scenario. In the test scenarios in which they play a part, the entities presented with dashed borders and grey fill will be always simulated whereas, the entities with light yellow fill (UE1 or UE3) will be Implementation Under Test (IUT).

NOTE 2: While showing the different players, figure 4.8.1 should not be understood as showing test environment implementation.

The test points shown on Figure 4.8.1 cover behaviour/requirements observed at various reference points and communication scenarios:

-   MCData on-network (TS 23.280 [110] Functional model description clause 7.3.1 'On-network functional model' and TS 23.282 [91] Functional model description clause 6.4.1, 6.5.1, and 6.6.1 'On-network functional model'.):

-   Application plane (MCData-SDS-1, MCData-SDS-2, MCData-SDS-3, MCData-FD-1, MCData-FD-2, MCData-FD-3, MCData-FD-4, MCData -5, and MCData -6), and, (CSC-1, CSC-2, CSC-4, CSC-8, and CSC-14); Signalling control plane (SIP-1, HTTP-1 and HTTP-2). Test point: (1). IUT: the UE or the MCData Client.

-   MCData off-network (TS 23.280 [110], clause 7.3.2 'Off-network functional model' and TS 23.282 [91], clause 6.4.2 'Off-network functional model'.). Test point: (2). IUT: the UE.

-   LTE Legacy requirements between UE and EPS and between 2 UEs (covering e.g. Bearer Management at the UE side, ProSe). Test point: (1) or (2).

4.9   MCData Conformance testing test environment overview

Based on the test points models shown in clause 4.8 examples for test environment implementations are provided below. Figures 4.9.1 and 4.9.2 show test configuration where the Implementation Under Test (IUT) and the System Simulator communicate, one with the other, over the LTE radio interface (test points (1) and (2)).
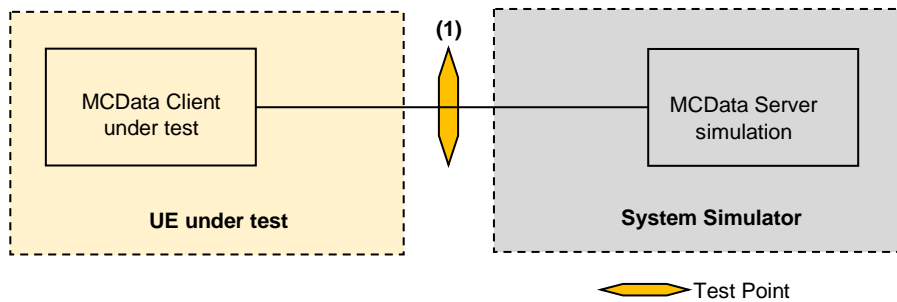
Figure 4.9.1: Testing the MCData Client (on-network)
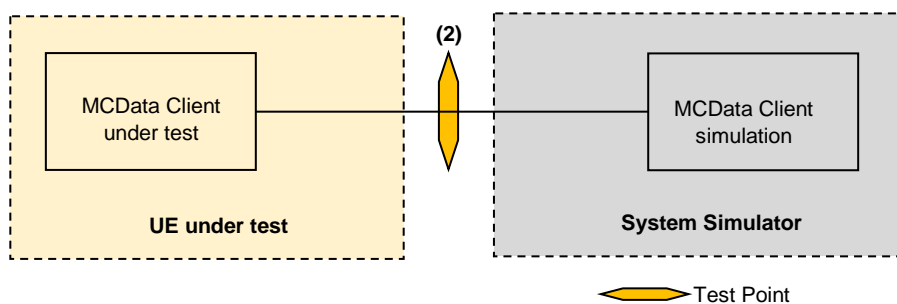
Figure 4.9.2: Testing the MCData Client (off-network)

4.10 MCData Conformance testing players and roles assumptions

Based on the described test environment scenarios in clause 4.9, a number of players and their roles have been designated to facilitate the test specification and provide a consistent test description.

For the purposes of MCData Client testing

> 1 MCdata Server:

- Server A simulated by the SS (in the case of on-network operation).

> 2 MCData Clients:

- Client A installed on the implementation under test

- Client B simulated by the System Simulator (SS) either explicitly (in the case of off-network operations), or, implicitly (in the case of on-network operation).

> 3 MCData Users:

- User A registered with Client A and operating on the implementation under test

- User B registered with Client B simulated by the System Simulator (SS) either explicitly (in the case of off-network operations), or, implicitly (in the case of on-network operation); pre-set at User A configuration as User allowed to be called by User A for any types of calls

- User C known to the User A, not involved in any communication, defined for the sole purpose of testing if the User A/Client A can distinguish between different users when choosing one of them for action; pre-set at User A configuration as User allowed to be called by User A for any types of calls.

4 MCData groups:

- Group A to which User A is implicitly affiliated, pre-set at User A configuration, and, comprising as members User A, User B and User C, to be available throughout the entire testing.

- Group D to which User A is not implicitly affiliated, pre-set at User A configuration, and, comprising as members User B and User C, to be used for testing group affiliation.

- Groups B and C not pre-set at User A configuration, to be used for testing creation and termination of groups.

5   Common Test Environment

5.1   General

Clause 5 provides basic test requirements, and, Generic Procedures and Default messages content to be used by the test cases wherever applicable.

5.2   Reference test conditions

5.2.1   General

Any E-UTRA frequency band can be used to provide the underlying communication bearer to carry the MCS communication. The requirements are defined in TS 36.508 [6].

5.2.2   On-network

There are no specific requirements to the UE on which the MCS client is installed when operating in on-network environment. The basic E-UTRA/EPC procedures shall be supported.

5.2.3   Off-network

When operating in off-network environment a MCS client shall:

- implement the procedures for ProSe direct discovery for public safety use as specified in 3GPP TS 24.334 [78];

- implement the procedures for one-to-one ProSe direct communication for Public Safety use as specified in 3GPP TS 24.334 [78].

- implement the procedures for one-to-many ProSe direct communication for Public Safety use as specified in 3GPP TS 24.334 [78].

5.3   Generic test procedures for UE MCS operation

5.3.1   General

The purpose of the procedures specified in the following clauses is to facilitate test description by providing procedure sequences which can be referred from the relevant TCs specified e.g. in 3GPP TS 36.579-2 [2], 3GPP TS 36.579-3 [3], 3GPP TS 36.579-6 [84], 3GPP TS 36.579-7 [85].

The procedures specified are required to ensure that any MC service can take place or specific MC relevant pre-conditions are met before a test case can be executed.

5.3.2   Initial MCX Authentication, Registration, Configuration and Subscription

5.3.2.1   Initial conditions

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData.

System Simulator:

- SS (MCX server)

    - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [6] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCX operation in the MCX configuration document).

Implementation Under Test (IUT):

- UE (MCX client)

    - The MCX Client has been provisioned either with the address information of the server from which the client can retrieve the MCX UE initial configuration document (steps 1a1-1a2 of procedure 'MCX Initial Configuration and User Authentication', Table 5.3.2.3.1-1) or directly with the Initial UE Configuration Data as specified in Table 5.5.8.1-1.

    - According to TS 33.180 [94] all HTTP connections are secured by TLS.
      The HTTP-1 interface authentication between the HTTP client in the MC UE and the HTTP server endpoint (HTTP proxy, IdM server or KMS) shall be performed by one-way authentication of the HTTP server endpoint based on server certificate as described in TS 33.180 [94] clause 6.1.1.

    - The UE User is provided with username/password for user authentication (px_MCX_User_A_username, px_MCX_User_A_password as provided in TS 36.579-5 [5], Table 9.2-1: MCX Client Common PIXIT)

    - The test USIM set as defined in clause 5.5.10 is inserted.

    - The UE is attached to EPS services.

    - The UE is provisioned with the names and values of the Transport Key (TrK) and the Integrity Key (InK), since the KMS shall encrypt the key material sent to the client with the TrK and sign the response with the TrK or the InK according to TS 33.180 [94].

5.3.2.2   Main Procedure

5.3.2.2.1   Procedure

Table 5.3.2.2.1-1: Initial MCX Authentication, Registration, Configuration and Subscription

St	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: The procedures of steps 1 and 2 happen in parallel	-	-
1	The UE (MCX client) performs procedure '**MCX Initial Configuration and User Authentication**' as described in Table 5.3.2.3.1-1	-	-
2	The UE (MCX client) performs procedure '**SIP registration**' as described in Table 5.3.2.4.1-1 (NOTE 1)	-	-
-	EXCEPTION: The procedures of steps 3, 4 and 5 happen in parallel	-	-
3	The UE (MCX client) performs procedure '**Publication of MCX service settings**' as described in Table 5.3.2.5.1-1 (NOTE 1)	-	-
4	The UE (MCX client) performs procedure '**Configuration management subscription**' as described in Table 5.3.2.6.1-1	-	-
5	The UE (MCX client) performs procedure '**Group management subscription with optional GMK retrieval**' as described in Table 5.3.2.7.1-1	-	-
6	The SS (MCX server) sends a SIP MESSAGE for configuration of Location Info reporting.	<--	SIP MESSAGE
7	The UE (MCX client) responds with SIP 200 (OK)	-->	SIP 200 (OK)
NOTE 1: Based on UE implementation, the access token may be provided using either a SIP REGISTER at initial SIP registration (Table 5.3.2.4.1-1 step 3a1) or in the SIP PUBLISH for MCPTT server settings (Table 5.3.2.5.1-1 step 1b1); the SIP REGISTER can only be used when the access token is already available.		

5.3.2.2.2   Specific message contents

All message contents are as specified in clause 5.5 with the following clarifications:

Table 5.3.2.2.2-1: SIP MESSAGE (step 6, Table 5.3.2.2.1-1)

Derivation Path: Table 5.5.2.7.2-1, condition LOCATION_CONFIG				
Information Element	Value/remark	Comment	Reference	Condition
Message-body				
MIME body part		**MCPTT/MCVideo/MCData Info**		
MIME-part-body	MCPTT-Info as described in Table 5.3.2.2.2-2			MCPTT
	MCVideo-Info as described in Table 5.3.2.2.2-3			MCVIDEO
	MCData-Info as described in Table 5.3.2.2.2-4			MCDATA

Table 5.3.2.2.2-2: MCPTT Info in SIP MESSAGE (Table 5.3.2.2.2-1)

Derivation Path: Table 5.5.3.2.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-calling-user-id	not present			

Table 5.3.2.2.2-3: MCVideo Info in SIP MESSAGE (Table 5.3.2.2.2-1)

Derivation Path: Table 5.5.3.2.2-2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcvideoinfo				
mcvideo-Params				
mcvideo-calling-user-id	not present			

Table 5.3.2.2.2-4: MCData Info in SIP MESSAGE (Table 5.3.2.2.2-1)

Derivation Path: Table 5.5.3.2.2-3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcdatainfo				
mcdata-Params				
mcdata-calling-user-id	not present			

5.3.2.3   MCX Initial Configuration and User Authentication

5.3.2.3.1   Procedure

Table 5.3.2.3.1-1: MCX Initial Configuration and User Authentication

St	Procedure	Message Sequence		TP	Verdict
		U - S	**Message**		
-	EXCEPTION: Steps 1a1-1a2 describe behaviour that depends on UE implementation.	-	-	-	-
1a1	IF the UE (MCX client) is capable of downloading the MCX UE initial configuration document THEN the UE (MCX client) sends an HTTP GET Request to retrieve the initial UE configuration from the server. NOTE: Otherwise the UE needs to be preconfigured with the Initial UE Configuration Data as initial condition.	-->	HTTP GET (initial UE configuration)	-	P
1a2	The SS sends an HTTP 200 (OK) including the initial UE configuration document	<--	HTTP 200 (OK)	-	-
2	Void	-	-	-	-
-	EXCEPTION: The messages in steps 3a1-7 are transmitted over a secure TLS tunnel that has been established by the UE (MCX client) as specified by 3GPP TS 33.310 [70], to the authorisation endpoint of the IdM server as specified in 3GPP TS 33.180 [94] using the configured URL of the authorisation endpoint of the IdM server as specified in the "<x>/OnNetwork/AppServerInfo/IDMSAuthEndpoint" leaf node, Table 5.5.8.1-1.	-	-	-	-
-	EXCEPTION: Steps 3a1-3b1 describe behaviour that depends on UE implementation of the OpenID Connect protocol; the UE may either use an HTTP GET or an HTTP POST to send the OpenID Connect Authentication Request.	-	-	-	-
3a1	The UE (MCX client) sends an OpenID Connect Authentication Request using HTTP GET.	-->	HTTP GET (Authorization)	-	P
3b1	The UE (MCX client) sends an OpenID Connect Authentication Request using HTTP POST.	-->	HTTP POST (Authorization)	-	P
4	The SS sends an HTTP 200 (OK) including the HTML form requesting username and password.	<--	HTTP 200 (OK)	-	-
5	Provide the UE (MCX client) with user credentials: username and password (px_MCX_User_A_username, px_MCX_User_A_password). (NOTE 1)	-	-	-	-
6	The UE (MCX client) sends an HTTP POST Request containing user name and password.	-->	HTTP POST	-	P
7	The SS sends a HTTP 302 (Found) as the OpenID Connect Authentication Response containing an authorization code.	<--	HTTP 302 (Found)	-	-
8	Void	-	-	-	-
-	EXCEPTION: The messages in steps 9-10 are transmitted over a secure TLS tunnel that has been established by the UE (MCX client) as specified by 3GPP TS 33.310 [70] to the token endpoint of the IdM server as specified in 3GPP TS 33.180 [94] using the configured URL of the token endpoint of the IdM server as specified in the "/<x>/OnNetwork/AppServerInfo/IDMSTokenEndpoint" leaf node, Table 5.5.8.1-1.	-	-	-	-
9	The UE (MCX client) sends an HTTP POST Request (OIDC Token Request), passing the authorization code obtained in step 7.	-->	HTTP POST	-	P
10	The SS sends an HTTP 200 (OK) providing id_token, access_token and refresh token.	<--	HTTP 200 (OK)	-	-
-	EXCEPTION: The messages in steps 11-14 are transmitted over a secure TLS tunnel that has been established by the UE (MCX client) as specified by 3GPP TS 33.310 [70] to the HTTP Proxy as specified in 3GPP TS 33.180 [94] using the configured URL of the HTTP Proxy as specified in the "/<x>/OnNetwork/AppServerInfo/HTTPproxy" leaf node, Table 5.5.8.1-1.	-	-	-	-
11	The UE (MCX client) sends an HTTP POST presenting the access token obtained in step 10.	-->	HTTP POST	-	P

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
12	The SS replies with identity specific key information.	<--	HTTP 200 (OK)	-	-
13	The UE (MCX client) sends an HTTP POST presenting an access token for Key Material Request.	-->	HTTP POST	-	P
14	The SS replies to the UE with identity specific key information.	<--	HTTP 200 (OK)	-	-
NOTE 1: The UE is expected to prompt the MCX user for username and password, or it may be stored on the UE. The provision of the username/password is expected to be done via a suitable implementation dependent MMI.					

5.3.2.3.2 Specific message contents

All message contents are as specified in clause 5.5 with the following clarifications:

Table 5.3.2.3.2-1: HTTP GET (Step 1, Table 5.3.2.3.1-1)

Derivation Path: Table 5.5.4.2-1, condition UEINITIALCONFIG

Table 5.3.2.3.2-2: HTTP 200 (OK) (Step 2, Table 5.3.2.3.1-1)

Derivation Path: Table 5.5.4.6-1, condition UEINITIALCONFIG

Table 5.3.2.3.2-3: HTTP GET (Step 3a1, Table 5.3.2.3.1-1)

Derivation Path: Table 5.5.4.2-1, condition AUTH

Table 5.3.2.3.2-4: HTTP POST (Step 3b1, Table 5.3.2.3.1-1)

Derivation Path: Table 5.5.4.3-1, condition AUTH

Table 5.3.2.3.2-5: HTTP 200 (OK) (Step 4, Table 5.3.2.3.1-1)

Derivation Path: Table 5.5.4.6-1				
Information Element	Value/remark	Comment	Reference	Condition
Content-Type				
media-type	"text/html"		RFC 2854 [111]	
Message-body				
HTML form	<!DOCTYPE html> <html> <body> <form action="/idms/userauth" method="post"> Username: <input type="text" name="user"> Password: <input type="password" name="password"><button type="submit">Login</button> </form> </body> </html>	"/idms/userauth" given by tsc_MCX_IdMS_userauth_UriPath is the URI to be used by the UE as request URI in the HTTP POST request for user authentication	HTML 4.01 Specification [105]	

Table 5.3.2.3.2-6: HTTP POST (Step 6, Table 5.3.2.3.1-1)

Derivation Path: Table 5.5.4.3-1, condition USERAUTH

Table 5.3.2.3.2-7: HTTP 302 (Found) (Step 7, Table 5.3.2.3.1-1)

Derivation Path: Table 5.5.4.8-1, condition AUTH.

Table 5.3.2.3.2-8: HTTP POST (Step 9, Table 5.3.2.3.1-1)

Derivation Path: Table 5.5.4.3-1, condition TOKEN

Table 5.3.2.3.2-9: HTTP 200 (OK) (Step 10, Table 5.3.2.3.1-1)

Derivation Path: Table 5.5.4.6-1, condition TOKEN

Table 5.3.2.3.2-10: HTTP POST (Step 11, Table 5.3.2.3.1-1)

Derivation Path: Table 5.5.4.33-1, condition KMSINIT.

Table 5.3.2.3.2-11: HTTP 200 (OK) (Step 12, Table 5.3.2.3.1-1)

Derivation Path: Table 5.5.4.6-1, condition KMSINIT.

Table 5.3.2.3.2-12: HTTP POST (Step 13, Table 5.3.2.3.1-1)

Derivation Path: Table 5.5.4.3-1, condition KMSKEY.

Table 5.3.2.3.2-13: HTTP 200 (OK) (Step 14, Table 5.3.2.3.1-1)

Derivation Path: Table 5.5.4.6-1, condition KMSKEY.

5.3.2.4 SIP Registration

5.3.2.4.1 Procedure

Table 5.3.2.4.1-1: SIP Registration

St	Procedure	Message Sequence	
		U - S	Message
1	The UE sends an initial registration for IMS services.	-->	SIP REGISTER
2	The SS responds with a valid AKAv1-MD5 authentication challenge and security mechanisms supported by the network.	<--	SIP 401 Unauthorized
-	EXCEPTION: The UE completes the security negotiation procedures, sets up a temporary set of SAs and uses those for sending another SIP REGISTER with AKAv1-MD5 credentials at step 3a1 or 3a2	-	-
-	EXCEPTION: Steps 3a1-3b1 describe behaviour that depends on UE implementation and on availability of an access-token (NOTE 1)	-	-
3a1	IF the client has retrieved the access token already at MCX User Authentication (Table 5.3.2.3.1-1 steps 9-10) THEN the UE may use the SIP REGISTER to provide access token and CSK for service authorisation (NOTE 2)	-->	SIP REGISTER (access token, CSK)
3b1	ELSE the UE sends SIP REGISTER without access token and CSK	-->	SIP REGISTER
4	The SS responds with 200 OK.	<--	SIP 200 OK
NOTE 1: According to TS 33.180 [94], clause 5.1.3.2.1 sending of the SIP REGISTER shall not be delayed for lack of an access token ⇒ If the client does not have the access token yet, the client shall sent the SIP REGISTER without service authorisation and shall provide the access token in the SIP PUBLISH (Table 5.3.2.5.1-1, step 1b1)			
NOTE 2: As the MCPTT/MCVideo/MCData Info containing the access token is security protected the client also needs to provide the CSK used for cyphering and integrity protection.			

5.3.2.4.2 Specific message contents

All message contents are as specified in clause 5.5 with the following clarifications:

Table 5.3.2.4.2-1: SIP REGISTER (Step 1, Table 5.3.2.4.1-1)

Derivation Path: Table 5.5.2.13-1, condition SIP_REGISTER_INITIAL

Table 5.3.2.4.2-2: SIP REGISTER (Step 3a1, Table 5.3.2.4.1-1)

Derivation Path: Table 5.5.2.13-1, condition SERVICE_AUTH				
Information Element	Value/remark	Comment	Reference	Condition
Message-body			RFC 3261 [22]	
MIME body part		**MCPTT/MCVideo/MCData Info**		
MIME-part-body	MCPTT-Info as described in Table 5.3.2.4.2-3		TS 24.379 [9] clause F.1	MCPTT
	MCVideo-Info as described in Table 5.3.2.4.2-4		TS 24.281 [86] clause F.1	MCVIDEO
	MCData-Info as described in Table 5.3.2.4.2-5		TS 24.282 [87] clause D.1	MCDATA

Table 5.3.2.4.2-3: MCPTT-Info in SIP REGISTER (Table 5.3.2.4.2-2)

Derivation Path: Table 5.5.3.2.1-1, condition CONFIG, REGISTER_PUBLISH

Table 5.3.2.4.2-4: MCVideo-Info in SIP REGISTER (Table 5.3.2.4.2-2)

Derivation Path: Table 5.5.3.2.1-2, condition CONFIG, REGISTER_PUBLISH

Table 5.3.2.4.2-5: MCData-Info in SIP REGISTER (Table 5.3.2.4.2-2)

Derivation Path: Table 5.5.3.2.1-3, condition CONFIG, REGISTER

5.3.2.5   Publication of MCX service settings

5.3.2.5.1   Procedure

Table 5.3.2.5.1-1: Publication of MCX service settings

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
	EXCEPTION: Steps 1a1-1b1 describe behaviour that depends on whether or not the client has provided an access token for service authorisation already at SIP registration (Table 5.3.2.4.1-1)				
1a1	IF the UE (MCX client) has provided the access token at SIP registration THEN the UE (MCX client) sends a SIP PUBLISH request for update of PoC-settings only. (NOTE 1).	-->	SIP PUBLISH	-	P
1b1	ELSE the UE (MCX client) sends a SIP PUBLISH request for service authorisation and update of PoC-settings. (NOTE 1).	-->	SIP PUBLISH	-	P
2	The SS (MCX server) sends SIP 200 (OK).	<--	SIP 200 (OK)	-	-
NOTE 1: The PoC-settings document contains the user profile index of the selected user profile. ⇒ In general the UE sends the SIP PUBLISH request not before it has retrieved the user profile at step 8 in Table 5.3.2.6.1-1.					

5.3.2.5.2   Specific message contents

All message contents are as specified in clause 5.5 with the following clarifications:

Table 5.3.2.5.2-1: SIP PUBLISH (Step 1a1, Table 5.3.2.5.1-1)

Derivation Path: Table 5.5.2.11-1, condition POC-SETTINGS-EVENT				
Information Element	Value/remark	Comment	Reference	Condition
Message-body				
MIME body part		**MCPTT/MCVideo/MCData Info**		
MIME-part-body	MCPTT-Info as described in Table 5.3.2.5.2-3			MCPTT
	MCVideo-Info as described in Table 5.3.2.5.2-4			MCVIDEO
	MCData-Info as described in Table 5.3.2.5.2-5			MCDATA

Table 5.3.2.5.2-2: SIP PUBLISH (Step 1a2, Table 5.3.2.5.1-1)

Derivation Path: Table 5.5.2.11-1, condition POC-SETTINGS-EVENT, SERVICE_AUTH				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**MCPTT/MCVideo/MCData Info**		
MIME-part-body	MCPTT-Info as described in Table 5.3.2.5.2-3			MCPTT
	MCVideo-Info as described in Table 5.3.2.5.2-4			MCVIDEO
	MCData-Info as described in Table 5.3.2.5.2-5			MCDATA

Table 5.3.2.5.2-3: MCPTT-Info in SIP PUBLISH (Table 5.3.2.5.2-1/2)

Derivation Path: Table 5.5.3.2.1-1, condition CONFIG, REGISTER_PUBLISH

Table 5.3.2.4.2-4: MCVideo-Info in SIP PUBLISH (Table 5.3.2.5.2-1/2)

Derivation Path: Table 5.5.3.2.1-2, condition CONFIG, REGISTER_PUBLISH

Table 5.3.2.4.2-5: MCData-Info in SIP PUBLISH (Table 5.3.2.5.2-1/2)

Derivation Path: Table 5.5.3.2.1-3, condition CONFIG, REGISTER

5.3.2.6   Configuration management subscription

5.3.2.6.1   Procedure

Table 5.3.2.6.1-1: Configuration management subscription

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The UE (MCX client) sends a SIP SUBSCRIBE - subscription to multiple documents simultaneously - containing the access token and a resource list body containing a list adressing the following documents: MCX UE Configuration document, MCX User Profile Configuration Document, and the MCX Service configuration document. The base URI of each list entry is set to the CMS XCAP-ROOT-URI.	-->	SIP SUBSCRIBE	-	P
2	The SS sends a SIP 200 (OK).	<--	SIP 200 (OK)	-	-
3	The SS sends a SIP NOTIFY containing the XCAP-URIs of the documents.	<--	SIP NOTIFY	-	-
-	EXCEPTION: The order of steps 4, 5, 7 and 9 depends on UE and SS implementation and is not checked by the implementation	-	-	-	-
4	The UE (MCX client) sends a SIP 200 (OK).	-->	SIP 200 (OK)	-	P
5	The UE (MCX client) sends an HTTP GET Request containing the access token and the XCAP-URI of the MCX UE Configuration Document. NOTE: The MCX Client is requesting the MCX UE Configuration Document.	-->	HTTP GET	-	P
6	The SS sends an HTTP 200 (OK) including the MCX UE Configuration Document.	<--	HTTP 200 (OK)	-	-
7	The UE (MCX client) sends an HTTP GET Request containing the access token and the XCAP-URI of the MCX User Profile Configuration Document. NOTE: The MCX Client is requesting the MCX User Profile Configuration Document.	-->	HTTP GET	-	P
8	The SS sends an HTTP 200 (OK) including the MCX User Profile Configuration Document. NOTE: The MCX User Profile Configuration Document includes information on MCX groups including for which groups the MCX Client is a member. The MCX User Profile Configuration Document includes Group A as a group for which the MCX Client is a member and is implicitly affiliated. Group A is used as the default group for all test cases in TS 36.579-2 and TS 36.579-3.	<--	HTTP 200 (OK)	-	-
9	The UE (MCX client) sends an HTTP GET Request containing the access token and the XCAP-URI of the MCX Service Configuration Document. NOTE: The MCX Client is requesting the MCX Service Configuration Document.	-->	HTTP GET	-	P
10	The SS sends an HTTP 200 (OK) including the MCX Service Configuration Document.	<--	HTTP 200 (OK)	-	--

5.3.2.6.2   Specific message contents

All message contents are as specified in clause 5.5 with the following clarifications:

Table 5.3.2.6.2-1: SIP SUBSCRIBE (Step 1, Table 5.3.2.6.1-1)

Derivation Path: Table 5.5.2.14-1, condition CONFIG

Table 5.3.2.6.2-2: SIP NOTIFY (Step 3, Table 5.3.2.6.1-1)

Derivation Path: Table 5.5.2.8-1, condition CONFIG

Table 5.3.2.6.2-3: HTTP GET (Step 5, Table 5.3.2.6.1-1)

Derivation Path: Table 5.5.4.2-1, condition UECONFIG.

Table 5.3.2.6.2-4: HTTP GET (Step 7, Table 5.3.2.6.1-1)

Derivation Path: Table 5.5.4.2-1, condition UEUSERPROF.

Table 5.3.2.6.2-5: HTTP GET (Step 9, Table 5.3.2.6.1-1)

Derivation Path: Table 5.5.4.2-1, condition UESERVCONFIG.

Table 5.3.2.6.2-6: HTTP 200 (OK) (Step 6, Table 5.3.2.6.1-1)

Derivation Path: Table 5.5.4.6-1, condition UECONFIG.

Table 5.3.2.6.2-7: HTTP 200 (OK) (Step 8, Table 5.3.2.6.1-1)

Derivation Path: Table 5.5.4.6-1, condition UEUSERPROF.

Table 5.3.2.6.2-8: HTTP 200 (OK) (Step 10, Table 5.3.2.6.1-1)

Derivation Path: Table 5.5.4.6-1, condition UESERVCONFIG.

5.3.2.7 Group management subscription with optional GMK retrieval

5.3.2.7.1 Procedure

Table 5.3.2.7.1-1: Group management subscription with optional GMK retrieval

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Steps 1a1-1c4 describe behaviour that depends on UE implementation; the UE may either use a single SIP SUBSCRIBE for subscription to group A and the GKTP or it uses separate SIP SUBSCRIBE requests.				
1a1	The UE (MCX client) sends a SIP SUBSCRIBE containing a resource-lists body with an entry for subscription to the group configuration document (group A) and an entry for subscription to the MCS GKTP document for Group communication key retrieval (GMK retrieval).	-->	SIP SUBSCRIBE (group A, GKTP)	-	P
1a2	The SS sends a SIP 200 (OK).	<--	SIP 200 (OK)	-	-
1b1	The UE (MCX client) sends a SIP SUBSCRIBE containing a resource-lists body with a single entry for subscription to the group configuration document (group A).	-->	SIP SUBSCRIBE (group A)	-	-
1b2	The SS sends a SIP 200 (OK).	<--	SIP 200 (OK)	-	-
1c1	The UE (MCX client) sends a SIP SUBSCRIBE containing a resource-lists body with a single entry for subscription to the MCS GKTP document for Group communication key retrieval (GMK retrieval).	-->	SIP SUBSCRIBE (GKTP)	-	-
1c2	The SS sends a SIP 200 (OK).	<--	SIP 200 (OK)	-	-
1c3	The UE (MCX client) sends a SIP SUBSCRIBE containing a resource-lists body with a single entry for subscription to the group configuration document (group A).	-->	SIP SUBSCRIBE (group A)	-	-
1c4	The SS sends a SIP 200 (OK).	<--	SIP 200 (OK)	-	-
2	Void	-	-	-	-
-	EXCEPTION: IF and only if the UE has performed steps 1b1-1b2 THEN in parallel to the events described in steps 3-6, the behaviour of Table 5.3.2.7.1-2 happens: The UE (MCX client) optionally subscribes to the MCS GKTP document for Group communication key retrieval (GMK retrieval).	-	-	-	-
3	The SS sends a SIP NOTIFY containing the XCAP-URI of the Group Configuration document for group A.	<--	SIP NOTIFY (group A)	-	-
-	EXCEPTION: The order of steps 4 and 5 depends on UE and SS implementation and is not checked.	-	-	-	-
4	The UE (MCX client) sends a SIP 200 (OK).	-->	SIP 200 (OK)	-	P
5	The UE (MCX client) sends an HTTP GET Request containing the access token and the XCAP-URI of the Group Configuration document.	-->	HTTP GET (group A)	-	P
6	The SS sends an HTTP 200 (OK) containing the Group Configuration Document.	<--	HTTP 200 (OK)	-	-
-	EXCEPTION: Steps 7a1-7a2 describe behaviour that depends on whether the UE has requested a GMK at step 1a1, step 1c1 or at step 2a1 of the parallel behaviour in Table 5.3.2.7.1-2.	-	-	-	-
7a1	IF the UE has requested a GMK THEN the SS sends a SIP NOTIFY containing the group key transport payloads (GKTP) document with the GMK.	<--	SIP NOTIFY (GKTP)	-	-
7a2	The UE (MCX client) sends a SIP 200 (OK).	-->	SIP 200 (OK)	-	P

Table 5.3.2.7.1-2: Stand-alone group communication key request

St	Procedure	Message Sequence		TP	Verdict
		U - S	**Message**		
1	The SS starts timer Timer_1 = 5 seconds.	-	-	-	-
-	EXCEPTION: Steps 2a1-2b1 describe behaviour that depends on UE implementation; in general the group communication key retrieval is optional at initial registration. (NOTE 1)	-	-	-	-
2a1	The UE (MCX client) sends a SIP SUBSCRIBE creating a new dialog and containing a resource list body containing a single entry for subscription to the MCS GKTP document for Group communication key retrieval (GMK retrieval).	-->	SIP SUBSCRIBE (GKTP)	-	P
2a2	The SS sends a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
2a3	The SS stops Timer_1.	-	-	-	-
2b1	Timer_1 expires	-	-	-	-
NOTE 1: The key retrieval from the GMS is necessary for the MCX UE under test to enable ciphering exchanged media in group communications.					

5.3.2.7.2 Specific message contents

All message contents are as specified in clause 5.5 with the following clarifications:

Table 5.3.2.7.2-1: SIP SUBSCRIBE (Step 1a1, Table 5.3.2.7.1-1)

Derivation Path: Table 5.5.2.14-1, condition GROUPCONFIG				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**Resource-lists**		
MIME-part-body	Resource-lists as described in Table 5.3.2.7.2-2			

Table 5.3.2.7.2-2: Resource-Lists in SIP SUBSCRIBE (Table 5.3.2.7.2-1)

Derivation Path: Table 5.5.3.3.1A-1, condition GROUPCONFIG, GROUPKEY

Table 5.3.2.7.2-3: SIP SUBSCRIBE (Step 1b1, Table 5.3.2.7.1-1; step 1c3, Table 5.3.2.7.1-1)

Derivation Path: Table 5.5.2.14-1, condition GROUPCONFIG				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**Resource-lists**		
MIME-part-body	Resource-lists as described in Table 5.3.2.7.2-4			

Table 5.3.2.7.2-4: Resource-Lists in SIP SUBSCRIBE (Table 5.3.2.7.2-3)

Derivation Path: Table 5.5.3.3.1A-1, condition GROUPCONFIG

Table 5.3.2.7.2-5: SIP SUBSCRIBE (Step 1c1, Table 5.3.2.7.1-1; step 2a1, Table 5.3.2.7.1-2)

Derivation Path: Table 5.5.2.14-1, condition GROUPCONFIG				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**Resource-lists**		
MIME-part-body	Resource-lists as described in Table 5.3.2.7.2-6			

Table 5.3.2.7.2-6: Resource-Lists in SIP SUBSCRIBE (Table 5.3.2.7.2-5)

Derivation Path: Table 5.5.3.3.1A-1, condition GROUPKEY

Table 5.3.2.7.2-7: SIP NOTIFY (Step 3, Table 5.3.2.7.1-1)

Derivation Path: Table 5.5.2.8-1, condition GROUPCONFIG

Table 5.3.2.7.2-8: HTTP GET (Step 5, Table 5.3.2.7.1-1)

Derivation Path: Table 5.5.4.2-1, condition GROUPCONFIG

Table 5.3.2.7.2-9: HTTP 200 (OK) (Step 6, Table 5.3.2.7.1-1)

Derivation Path: Table 5.5.4.6-1, condition GROUPCONFIG.

Table 5.3.2.7.2-10: SIP NOTIFY (Step 7a1, Table 5.3.2.7.1-1)

Derivation Path: Table 5.5.2.8-1, condition GROUPCONFIG				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
xcap-diff document	xcap-diff document as described in Table 5.3.2.7.2-11			

Table 5.3.2.7.2-11: Xcap-Diff Document (Table 5.3.2.7.2-10)

Derivation Path: Table 5.5.3.12-2, condition GROUPKEY

5.3.2A - 5.3.2B Void

5.3.3 MCX pre-established session establishment

5.3.3.1 Initial conditions

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData.

System Simulator:

- SS (MCX server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [6] clause 4.4.

The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCX operation in the MCX configuration document)

IUT:

- UE (MCX client)

    - The UE has performed the procedure for MCX Authorization/Configuration and Key Generation as specified in clause 5.3.2 and thereby the MCX client is authorised for and able to use the MCX service including making group and private calls on- and off-network, and, the MCX user is registered for receiving MCX service through the MCX Client.

5.3.3.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.3.3 Procedure

Table 5.3.3.3-1: MCX pre-established session establishment CO

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Void	-	-	-	-
1A	EXCEPTION: The E-UTRA/EPC actions which are related to the MCX call establishment as described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
2-7	Void	-	-	-	-
8	Check: Does the UE (MCX Client) send a SIP INVITE message in order to create a pre-established session?	-->	SIP INVITE	-	P
8A	The SS sends a SIP 100 Trying	<--	SIP 100 Trying	-	-
9	Void	-	-	-	-
10	The SS (MCX server) responds with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
10A	Check: Does the UE (MCX Client) respond with a SIP ACK message?	-->	SIP ACK	-	P
11	Void	-	-	-	-
11A	The SS waits 2 seconds to ensure that lower layer signalling (TCP) is finished.	-	-	-	-
12	The SS transmits an *RRCConnectionRelease* message.	<--	RRC: *RRCConnectionRelease*	-	-

5.3.3.4 Specific message contents

Table 5.3.3.4-1: SIP INVITE from the UE (step 8, Table 5.3.3.3-1)

Derivation Path: Table 5.5.2.5.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Contact			RFC 3261 [22 RFC 3840 [33]	
feature-param	"+g.3gpp.mcptt"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Push To Talk (MCPTT) communication.		MCPTT
	"+g.3gpp.mcvideo"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Video (MCVideo) communication.		MCVIDEO
	"+g.3gpp.mcdata.sds"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports mission critical data (MCData) service.communication.		MCDATA_SDS
feature-param	"audio"	This feature tag indicates that the device supports audio as a streaming media type.		MCPTT OR MCVIDEO
feature-param	"video"	This feature tag indicates that the device supports video as a streaming media type.		MCVIDEO
feature-param	"text"	This feature tag indicates that the device supports text as a streaming media type.		MCDATA_SDS
Accept			RFC 3261 [22]	
media-range[1]	"application/sdp"			
Answer-Mode	not present			
Content-Type				
media-type	"application/sdp"			MCPTT OR MCVIDEO
media-type	"multipart/mixed"			MCDATA_SDS
Message-body				MCPTT OR MCVIDEO
SDP Message	SDP message as described in Table 5.5.3.1.1-1 with conditions PRE_ESTABLISHED_SESSION, INITIAL_SDP_OFFER			MCPTT

	SDP message as described in Table 5.5.3.1.1-2 with condition PRE_ESTABLISHED_ SESSION, INITIAL_SDP_OFFER			MCVIDEO
Message-body				MCDATA_ SDS
MIME body part		SDP message		
MIME-part-body	SDP message as described in Table 5.5.3.1.1-3 with condition PRE_ESTABLISHED_ SESSION, MCDATA_SDS, SDP_OFFER, SDS_SESSION			
MIME body part		MCData-Info		
MIME-part-body	MCData-Info message as described in Table 5.5.3.2.1-3 with condition PRE_ESTABLISHED_ SESSION			

Table 5.3.3.4-2: SIP 200 (OK) from the SS (step 10, Table 5.3.3.3-1)

Derivation Path: Table 5.5.2.17.1.2-1, condition INVITE-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Contact				
addr-spec				
user-info and host	tsc_MCX_SessionID_B	The URI that identifies the pre-established session		
Message-body				
SDP Message	SDP message as described in Table 5.5.3.1.2-1 with condition PRE_ESTABLISHED_ SESSION, SDP_ANSWER			MCPTT
	SDP message as described in Table 5.5.3.1.2-2 with condition PRE_ESTABLISHED_ SESSION, SDP_ANSWER			MCVIDEO
	SDP message as described in Table 5.5.3.1.2-3 with condition PRE_ESTABLISHED_ SESSION, MCDATA_SDS, SDP_ANSWER, SDS_SESSION			MCDATA_ SDS

5.3.3A   Void

5.3.4   MCX CT session establishment/modification without provisional responses other than 100 Trying

5.3.4.1   Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData.

5.3.4.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.4.3   Procedure

Table 5.3.4.3-1: MCX CT session establishment/modification without provisional responses other than 100 Trying

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the MCX call establishment as described in clause 5.4.4 'MCX CT communication in E-UTRA' take place.	-	-	-	-
2	The SS (MCX Server) sends a SIP INVITE requesting the establishment/modification of an MCX call.	<--	SIP INVITE	-	-
-	EXCEPTION: Step 3a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE responds to a SIP INVITE with a SIP 100 (Trying).	-	-	-	-
3a1	The UE (MCX client) sends a SIP 100 (Trying)	-->	SIP 100 (Trying)	-	-
4	Check: Does the UE (MCX client) respond to the SIP INVITE with SIP 200 (OK)?	-->	SIP 200 (OK)	-	P
5	The SS (MCX server) sends a SIP ACK to acknowledge the session establishment/modification	<--	SIP ACK	-	-

5.3.4.4   Specific message contents

All message contents are as specified in clause 5.5 with the following clarifications:

None

Table 5.3.4.4-1: Void

5.3.5   MCX CT group call establishment with manual commencement

5.3.5.1   Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData.

5.3.5.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.5.3 Procedure

Table 5.3.5.3-1: MCX CT group call establishment with manual commencement

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Steps 1a1describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the MCX call establishment described in clause 5.4.4 'MCX CT communication in E-UTRA' take place.	-	-	-	-
2	The SS (MCX Server) sends an initial SIP INVITE requesting the establishment of an MCX group call.	<--	SIP INVITE	-	-
-	EXCEPTION: Step 3a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE responds to a SIP INVITE with a SIP 100 (Trying)	-	-	-	-
3a1	The UE (MCX client) sends SIP 100 (Trying).	-->	SIP 100 (Trying)	-	-
4	The SS starts timer Timer_1 = 5 seconds.	-	-	-	-
-	EXCEPTION: Steps 5a1 to 5c1 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that may take place if the UE responds reliably or unreliably to a SIP INVITE with a SIP 183 (Session Progress)	-	-	-	-
5a1	Check: Does the UE (MCX client) send a SIP 183 (Session Progress) unreliably?	-->	SIP 183 (Session Progress)	-	P
5a2	The SS stops Timer_1.	-	-	-	-
5b1	Check: Does the UE (MCX client) send a SIP 183 (Session Progress) reliably?	-->	SIP 183 (Session Progress)	-	P
5b2	The SS stops Timer_1.	-	-	-	-
5b3	The SS (MCX Server) acknowledges the receipt of SIP 183 (Session Progress)	<--	PRACK	-	-
5b4	The UE (MCX Client) responds PRACK with SIP 200 (OK)	-->	SIP 200 (OK)	-	-
5c1	Check: Does Timer_1 expire?	-	-	-	P
5A	Check: Does the UE (MCX client) notify the User of the incoming call request? (NOTE 1)	-	-	-	P
6	Make UE (MCX User) accept the call. (NOTE 1)	-	-	-	-
7	Check: Does the UE (MCX client) respond to the SIP INVITE with SIP 200 (OK)?	-->	SIP 200 (OK)	-	P
8	The SS (MCX server) sends a SIP ACK to acknowledge the session establishment	<--	SIP ACK	-	-
NOTE 1: This expected to be done via a suitable implementation dependent MMI.					

5.3.5.4 Specific message contents

All message contents are as specified in clause 5.5 with condition GROUP-CALL where applicable and with the following clarifications:

None

Table 5.3.5.4-1..3: Void

5.3.6 MCX CT private call establishment with manual commencement

5.3.6.1 Initial conditions

The same initial conditions apply as specified in clause 5.3.3.1.

Within the context of this procedure, MCX refers to MCPTT or MCVideo

5.3.6.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.6.3 Procedure

Table 5.3.6.3-1: MCX CT private call establishment with manual commencement

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the MCX call establishment described in clause 5.4.4 'MCX CT communication in E-UTRA' take place.	-	-	-	-
2	The SS (MCX Server) sends an initial SIP INVITE requesting the establishment of an MCX private call.	<--	SIP INVITE	-	-
-	EXCEPTION: Step3a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE responds to a SIP INVITE with a SIP 100 (Trying)	-	-	-	-
3a1	The UE (MCX client) sends a SIP 100 (Trying).	-->	SIP 100 (Trying)	-	-
-	EXCEPTION: Steps 4a1 to 4b3 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that takes place if the UE responds either unreliably or reliably to a SIP INVITE with a SIP 180 (Ringing)	-	-	-	-
4a1	Check: Does the UE (MCX client) send a SIP 180 (Ringing) unreliably?	-->	SIP 180 (Ringing)	-	P
4b1	Check: Does the UE (MCX client) send a SIP 180 (Ringing) reliably?	-->	SIP 180 (Ringing)	-	P
4b2	The SS (MCX Server) acknowledges the receipt of SIP 180 (Ringing)	<--	PRACK	-	-
4b3	The UE (MCX Client) responds PRACK with SIP 200 (OK)	-->	SIP 200 (OK)	-	-
4A	Check: Does the UE (MCX client) notify the user of the incoming call? (NOTE 1)	-	-	-	P
5	Make UE (MCX client) accept the call. (NOTE 1)	-	-	-	-
6	Check: Does the UE (MCX client) respond to the SIP INVITE with SIP 200 (OK)?	-->	SIP 200 (OK)	-	P
7	The SS (MCX server) sends a SIP ACK to acknowledge the session establishment	<--	SIP ACK	-	-
NOTE 1: This expected to be done via a suitable implementation dependent MMI.					

5.3.6.4   Specific message contents

All message contents are as specified in clause 5.5 with condition PRIVATE-CALL where applicable and in the test case calling the procedure, with the following clarifications:

Table 5.3.6.4-1..1A: Void

Table 5.3.6.4-2: SIP 180 (Ringing) (step 4b1, Table 5.3.6.3-1)

Derivation Path: Table 5.5.2.16.2.1-1, condition 100rel

Table 5.3.6.4-3: Void

5.3.7 - 5.3.9   Void

5.3.10   MCX CO call release

5.3.10.1   Initial conditions

As specified in the test case which calls the procedure.

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData.

5.3.10.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.10.3   Procedure

Table 5.3.10.3-1: MCX CO call release

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCX Client) send a SIP BYE request to terminate the MCX session?	-->	SIP BYE	-	P
2	The SS (MCX Server) responds with a SIP 200 (OK) message?	<--	SIP 200 (OK)	-	-
3	The SS waits 2 seconds before the SS deactivates the dedicated EPS bearer and releases the RRC connection. (NOTE 1)	-	-	-	-
NOTE 1: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished.					

5.3.10.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3.11   Void

5.3.12   MCX CT call release

5.3.12.1   Initial conditions

As specified in the test case which calls the procedure.

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData.

5.3.12.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.12.3   Procedure

Table 5.3.12.3-1: MCX CT call release

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS (MCX Server) sends a SIP BYE request to terminate the MCX session.	<--	SIP BYE	-	-
2	Check: Does the UE (MCX Client) respond with a SIP 200 (OK) message?	-->	SIP 200 (OK)	-	P
3	The SS waits 2 seconds before the SS deactivates the dedicated EPS bearer and releases the RRC connection. (NOTE 1)	-	-	-	-
NOTE 1: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished.					

5.3.12.4   Specific message contents

All message contents are as specified in clause 5.5. and in the test case calling the procedure, with the following clarifications:

None

5.3.13 - 21 Void

5.3.22   MCX NW initiated notifications regarding temporary group creation or tear down

5.3.22.1   Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData.

5.3.22.2   Definition of system information messages

-

5.3.22.3 Procedure

Table 5.3.22.3-1: MCX NW initiated notifications regarding temporary group creation or tear down

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS (MCX server) sends a SIP NOTIFY informing about change of group A's configuration document.	<--	SIP NOTIFY	-	-
2	The UE sends a SIP 200 (OK) message.	-->	SIP 200 (OK)	-	-
2A-2F	Void	-	-	-	-
3	The UE (MCX client) sends an HTTP GET Request message containing the access token and the XCAP-URI of the Group Configuration document.	-->	HTTP GET	-	-
4	The SS (MCX server) sends the HTTP 200 (OK) message including the updated Group Document	<--	HTTP 200 (OK)	-	-
5	The SS (MCX server) sends a SIP NOTIFY message containing the group key transport payloads (GKTP) document including the group keys.	<-	SIP NOTIFY	-	-
5a1-5a2	Void	-	-	-	-
6	The UE (MCX client) sends a SIP 200 (OK) message.	-->	SIP 200 (OK)	-	-

5.3.22.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3.22.4-1: SIP NOTIFY (Step 1)

Derivation Path: Table 5.5.2.8-1, condition GROUPCONFIG				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**xcap-diff**		
MIME-part-body	Xcap-diff as described in Table 5.3.22.4-1A			

Table 5.3.22.4-1A: Xcap-diff document in SIP NOTIFY (Table 5.3.22.4-1)

Derivation Path: Table 5.5.3.12-2, condition GROUPCONFIG

Table 5.3.22.4-2: SIP 200 (OK) (Steps 2, 6)

Derivation Path: Table 5.5.2.17.1.1-1

Table 5.3.22.4-2A..2G: Void

Table 5.3.22.4-3: HTTP GET (Step 3)

Derivation Path: Table 5.5.4.2-1, condition GROUPCONFIG

Table 5.3.22.4-4: HTTP 200 (OK) (Step 4)

Derivation Path: Table 5.5.4.6-1, condition GROUPCONFIG				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
group-configuration	As described in Table 5.3.22.4-5	Group Configuration document returned		

Table 5.3.22.4-5: Group Configuration document (Table 5.3.22.4-4)

Derivation Path: Table 5.5.7.4-2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
list-service[1]				
mcpttgi:on-network-regrouped			TS 24.481 [31] clause 7.2.4.2	TEMPGROUPCREATE
temporary-MCPTT-group-ID attribute	px_MCPTT_Group_T_ID	MCS temporary group identity	TS 24.481 [31] clause 7.2.4.2	MCPTT
	px_MCVideo_Group_T_ID			MCVIDEO
	px_MCData_Group_T_ID			MCDATA
temporary-MCPTT-group-requestor attribute	px_MCPTT_ID_User_B	Identity of the responsible for formatting the MCS temporary group.	TS 24.481 [31] clause 7.2.4.2	MCPTT
	px_MCVideo_ID_User_B			MCVIDEO
	px_MCData_ID_User_B			MCDATA
constituent-MCPTT-group-IDs			TS 24.481 [31] clause 7.2.4.2	
constituent-MCPTT-group-ID[1]	px_MCPTT_Group_A_ID	MCS group ID of a constituent MCS group of the temporary MCS group	TS 24.481 [31] clause 7.2.4.2	MCPTT
	px_MCVideo_Group_A_ID			MCVIDEO
	px_MCData_Group_A_ID			MCDATA
constituent-MCPTT-group-ID[1]	px_MCPTT_Group_B_ID	MCS group ID of a constituent MCS group of the temporary MCS group	TS 24.481 [31] clause 7.2.4.2	MCPTT
	px_MCVideo_Group_B_ID			MCVIDEO
	px_MCData_Group_B_ID			MCDATA
protect-media	"true"	Indicates whether confidentiality and integrity of media is required on the MCPTT temporary group	TS 24.481 [31] clause 7.2.4.2	
protect-floor-control-signalling	"true"	Indicates whether confidentiality and integrity of floor control signalling is required on the temporary MCPTT group	TS 24.481 [31] clause 7.2.4.2	

Condition	Explanation
TEMPGROUPCREATE	Procedure is used for creation of a temporary group (but not for tear down)

Table 5.3.22.4-5A: Void

Table 5.3.22.4-6: SIP NOTIFY (Step 5)

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: Table 5.5.2.14-1, condition GROUPCONFIG				
Message-body				
xcap-diff document	xcap-diff document as described in Table 5.3.22.4-7			

Table 5.3.22.4-7: xcap-diff document for MCX group configuration (Table5.3.22.4-6)

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: Table 5.5.3.12-2, condition GROUPKEY				
xcap-diff	encrypted according to NOTE 1 of Table 5.5.3.12-2			
element[1]				
sel attribute	Doc-Sel & "~~" & Node-Sel	Document and node selector for Group T according to NOTEs 2a, 2b and 3 of Table 5.5.3.12-2		
GKTPs	group key transport payloads (GKTP) document as described in Table 5.3.22.4-8			

Table 5.3.22.4-8: group key transport payloads (GKTP) document (Table 5.3.22.4-7)

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.481 [11] clause 7.7				
GKTPs				
GMK-GKTPs				
GKTP[1]	MIKEY message as used in group communication key retrieval procedure	MIKEY message containing the GMK for Group A	TS 33.180 [94]	
id attribute	Same value as used in group communication key retrieval procedure			
on-network-regrouped-GKTPs[1]				TEMPGROUPCREATE
temporary-MCPTT-group-ID attribute	px_MCPTT_Group_T_ID			MCPTT
	px_MCVideo_Group_T_ID			MCVIDEO
	px_MCData_Group_T_ID			MCDATA
GKTP[1]	MIKEY message as described in Table 5.3.22.4-9	MIKEY message containing the GMK for Group T	TS 33.180 [94]	
id attribute	arbitrary value	unique charstring assigned by the SS		

Condition	Explanation
TEMPGROUPCREATE	Procedure is used for creation of a temporary group (but not for tear down)

Table 5.3.22.4-9: MIKEY-SAKKE I_MESSAGE (GMK distribution by the SS) (Table 5.3.22.4-8)

Information Element	Value/remark	Comment	Condition
Derivation Path: Table 5.5.9.1-3			
General Extension Payload {			
Content {			
Payload {			
Data {		See TS 33.180 [94] clause E.6	
Group IDs {			
Number of Group IDs	'1'		
Group ID	px_MCPTT_Group_T_ID	The ID for the group associated with the key.	MCPTT
	px_MCVideo_Group_T_ID		MCVIDEO
	px_MCData_Group_T_ID		MCDATA
}			
}			
}			
..}			
}			

5.3.23 - 5.3.25 Void

5.3.26 MCX CO Group Creation

5.3.26.1   Initial conditions

As specified in the test case which calls the procedure.

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData.

5.3.26.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.26.3   Procedure

Table 5.3.26.3-1: MCX CO Group Creation procedure

St	Procedure	U - S	Message	TP	Verdict
1a1-1a2	Void	-	-	-	-
1	Check: Does the UE (MCX Client) send an HTTP PUT to request for creation of the new group?	-->	HTTP PUT	-	P
2	The SS (MCX Server) sends an HTTP 201 (Created).	<--	HTTP 201 (Created)	-	-
3-5	Void	-	-	-	-

5.3.26.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

Table 5.3.26.4-1..5: Void

5.3.27 MCX CO Temporary Group Creation

5.3.27.1 Initial conditions

As specified in the test case which calls the procedure.

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData.

5.3.27.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.27.3 Procedure

Table 5.3.27.3-1: MCX CO Temporary Group Creation procedure

St	Procedure	Message Sequence		TP	Verdict
		U - S	**Message**		
1	Check: Does the UE (MCX Client) send an HTTP POST to request for creation of a temporary group?	-->	HTTP POST	-	P
2	The SS (MCX Server) sends an HTTP 200 (OK) containing the GMOP group-regroup-creation-response.	<--	HTTP 200 (OK)	-	-

5.3.27.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

Table 5.3.27.4-1..2: Void

5.3.28 MCX CO Temporary Group Tear Down

5.3.28.1 Initial conditions

As specified in the test case which calls the procedure.

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData.

5.3.28.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.28.3 Procedure

Table 5.3.28.3-1: MCX CO Temporary Group Creation procedure

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCX Client) send an HTTP DELETE to request for tear down of a temporary group?	-->	HTTP DELETE	-	P
2	The SS (MCX Server) sends an HTTP 200 (OK).	<--	HTTP 200 (OK)	-	-

5.3.28.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

Table 5.3.28.4-1: Void

5.3.29 MCX Subscription and Notification

5.3.29.1 Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData.

5.3.29.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.29.3 Procedure

Table 5.3.29.3-1: MCX Subscription and Notification

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the MCX call establishment described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCX Client) send a SIP SUBSCRIBE message request?	-->	SIP SUBSCRIBE	-	P
3	The SS (MCX Server) responds to the SIP SUBSCRIBE message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
4	The SS (MCX Server) sends a SIP NOTIFY message	<--	SIP NOTIFY	-	-
5	The UE (MCX Client) responds with a SIP 200 (OK) message.	-->	SIP 200 (OK)	-	-
6	The SS waits 2 seconds before the SS releases the RRC connection. (NOTE 1)	-	-	-	-
NOTE 1: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished.					

5.3.29.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3.30 MCX SIP MESSAGE Request - Accept CO

5.3.30.1 Initial conditions

As specified in the test case which calls the procedure.

Within the context of this procedure, MCX refers to MCPTT or MCVideo

5.3.30.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.30.3 Procedure

Table 5.3.30.3-1: MCX SIP MESSAGE Request - Accept CO

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the MCX call establishment as described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCX Client) send a SIP MESSAGE message?	-->	SIP MESSAGE	-	P
3	The SS (MCX Server) responds with a SIP 200 (OK) message?	<--	SIP 200 (OK)	-	-
4	The SS (MCX server) sends SIP MESSAGE accepting the request.	<--	SIP MESSAGE	-	-
5	Check: Does the UE (MCX Client) respond with a SIP 200 (OK) message?	-->	SIP 200 (OK)	-	P
6	The SS waits 2 seconds before the SS releases the RRC connection. (NOTE 1)	-	-	-	-
NOTE 1: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished.					

5.3.30.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3.31 MCX SIP MESSAGE Request - Accept CT

5.3.31.1 Initial conditions

As specified in the test case which calls the procedure.

Within the context of this procedure, MCX refers to MCPTT or MCVideo

5.3.31.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.31.3 Procedure

Table 5.3.31.3-1: MCX SIP MESSAGE Request - Accept CT

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the MCX call establishment as described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
2	The SS (MCX server) sends SIP MESSAGE	<--	SIP MESSAGE	-	-
3	Check: Does the UE (MCX Client) respond with a SIP 200 (OK) message?	-->	SIP 200 (OK)	-	P
4	Check: Does the UE (MCX Client) send a SIP MESSAGE message?	-->	SIP MESSAGE	-	P
5	The SS (MCX Server) responds with a SIP 200 (OK) message?	<--	SIP 200 (OK)	-	-
6	The SS waits 2 seconds before the SS releases the RRC connection. (NOTE 1)	-	-	-	-
NOTE 1: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished.					

5.3.31.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3.32 MCX SIP MESSAGE CO

5.3.32.1 Initial conditions

As specified in the test case which calls the procedure.

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData

5.3.32.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.32.3 Procedure

Table 5.3.32.3-1: MCX SIP MESSAGE CO

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the MCX call establishment as described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCX Client) send a SIP MESSAGE message?	-->	SIP MESSAGE	-	P
3	The SS (MCX Server) responds with a SIP 200 (OK) message?	<--	SIP 200 (OK)	-	-
4	The SS waits 2 seconds before the SS releases the RRC connection. (NOTE 1)	-	-	-	-
NOTE 1: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished.					

5.3.32.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3.33 MCX SIP MESSAGE CT

5.3.33.1 Initial conditions

As specified in the test case which calls the procedure.

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData

5.3.33.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.33.3 Procedure

Table 5.3.33.3-1: MCX SIP MESSAGE CT

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the MCX call establishment as described in clause 5.4.4 'MCX CT communication in E-UTRA' take place.	-	-	-	-
2	The SS (MCX server) sends SIP MESSAGE	<--	SIP MESSAGE	-	-
3	Check: Does the UE (MCX Client) respond with a SIP 200 (OK) message?	-->	SIP 200 (OK)	-	P
4	The SS waits 2 seconds before the SS releases the RRC connection. (NOTE 1)	-	-	-	-
NOTE 1: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished.					

5.3.33.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3.34 MCX Group Affiliation Status Change

5.3.34.1 Initial conditions

As specified in the test case which calls the procedure.

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData

5.3.34.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.34.3   Procedure

Table 5.3.34.3-1: MCX Group Affiliation Status Change

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the MCX call establishment as described in clause 5.4.4 'MCX CT communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCX Client) send a SIP PUBLISH message?	-->	SIP PUBLISH	-	P
3	The SS responds to the SIP PUBLISH message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
4	The SS sends a SIP NOTIFY message informing about the status change progress.	<--	SIP NOTIFY	-	-
5	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
6	The SS sends a SIP NOTIFY informing about the affiliation status of the user.	<--	SIP NOTIFY	-	-
7	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
8	The SS waits 2 seconds before the SS releases the RRC connection. (NOTE 1)	-	-	-	-
NOTE 1: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished.					

5.3.34.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3.35   MCX CO private call establishment with manual commencement

5.3.35.1   Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData

5.3.35.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.35.3 Procedure

Table 5.3.35.3-1: MCX CO private call establishment with manual commencement

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the MCX call establishment described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCX client) send a SIP INVITE requesting the establishment of a private call?	-->	SIP INVITE	-	P
3	The SS sends a SIP 100 Trying	<--	SIP 100 (Trying)	-	-
4	The SS (MCX server) responds with a SIP 180 (Ringing)	<--	SIP 180 (Ringing)	-	-
5	The SS (MCX server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
6	Check: Does the UE (MCX client) send a SIP ACK to acknowledge the session establishment/modification?	-->	SIP ACK	-	P

5.3.35.4 Specific message contents

All message contents are as specified in clause 5.5 with condition PRIVATE-CALL where applicable and in the test case calling the procedure, with the following clarifications:

None

5.3.36 UE initiated MCX functional alias status determination and subscription

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData.

5.3.36.1 Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

5.3.36.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.36.3 Procedure

Table 5.3.36.3-1: MCX functional alias status determination and subscription

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the UE (MCX client) request to determine the current status of a functional alias and later notification of status changes of a functional alias. (NOTE 1)	-	-	-	-
-	EXCEPTION: Step 2a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
2a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the procedure described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
3	Check: Does the UE (MCX client) send a SIP SUBSCRIBE requesting the status of any existing functional aliases?	-->	SIP SUBSCRIBE	-	P
4	The SS (MCX server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
5	The SS (MCX server) sends a SIP NOTIFY with functional alias information	<--	SIP NOTIFY	-	-
6	Check: Does the UE (MCX client) send a SIP 200 (OK)?	-->	SIP 200 (OK)	-	P
7	The SS waits 2 seconds before the SS releases the RRC connection. (NOTE 2)	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI					
NOTE 2: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished.					

5.3.36.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure with the following clarifications:

Table 5.3.36.4-1: SIP SUBSCRIBE (step 3, Table 5.3.36.3-1)

Derivation Path: Table 5.5.2.14-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Expires				
value	"4294967295"	to receive the current status and later notification	TS 24.379 [9] clause 9A.2.1.3 TS 24.282 [87] clause 22.2.1.3	
Message-body				
MIME body part		**MCPTT Info**		MCPTT
MIME-part-body	MCData-Info as described in Table 5.3.36.4-2		TS 24.379 [9] clause 9A.2.1.3	
MIME body part		**MCData Info**		MCDATA
MIME-part-body	MCData-Info as described in Table 5.3.36.4-3		TS 24.282 [87] clause 22.2.1.3	

Table 5.3.36.4-2: MCPTT-Info in SIP SUBSCRIBE (Table 5.3.36.4-1)

Derivation Path: Table 5.5.3.2.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-request-uri	px_MCPTT_ID_User_A		TS 24.379 [9] clause 9A.2.1.3	
anyExt				
request-type	"functional-alias-status-determination"		TS 24.379 [9] clause 9A.2.1.3	

Table 5.3.36.4-3: MCData-Info in SIP SUBSCRIBE (Table 5.3.36.4-1)

Derivation Path: Table 5.5.3.2.1-3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcdatainfo				
mcdata-Params				
request-type	"functional-alias-status-determination"		TS 24.282 [87] clause 22.2.1.3	
mcdata-request-uri	px_MCData_ID_User_A		TS 24.282 [87] clause 22.2.1.3	

Table 5.3.36.4-4: SIP 200 (OK) (step 4, Table 5.3.36.3-1)

Derivation Path: Table 5.5.2.17.1.2-1, condition SUBSCRIBE-RSP

Table 5.3.36.4-5: SIP NOTIFY (step 5, Table 5.3.36.3-1)

Derivation Path: Table 5.5.2.8-1, condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**PIDF**		
MIME-part-body	PIDF for MCPTT as described in Table 5.5.3.5.2-1 (NOTE 1)		TS 24.379 [9] clause 9A.2.2.5	MCPTT
MIME-part-body	PIDF for MCData as described in Table 5.5.3.5.2-3 (NOTE 1)		TS 24.282 [87] clause 22.2.2.2.5	MCDATA
NOTE 1: PIDF document contains tuple with empty <status> element (i.e. there are no <functionalAlias> entries at all) and not containing a <p-id-fa> element				

5.3.37 UE initiated MCX functional alias status change

Within the context of this procedure, MCX refers to MCPTT, MCVideo or MCData.

5.3.37.1 Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

5.3.37.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3.37.3 Procedure

Table 5.3.37.3-1: MCX functional alias status change

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the UE (MCX client) request to change the status of a functional alias to 'activated'. (NOTE 1)	-	-	-	-
-	EXCEPTION: Step 2a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
2a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the procedure described in clause 5.4.3 'MCX CO communication in E-U'RA' take place.	-	-	-	-
3	Check: Does the UE (MCX client) send a SIP PUBLISH requesting the status change of a functional alias?	-->	SIP PUBLISH	-	P
4	The SS (MCX server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
5	The SS (MCX server) sends a SIP NOTIFY with functional alias information	<--	SIP NOTIFY	-	-
6	Check: Does the UE (MCX client) send a SIP 200 (OK)?	-->	SIP 200 (OK)	-	P
7	The SS waits 2 seconds before the SS releases the RRC connection. (NOTE 2)	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI					
NOTE 2: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished.					

5.3.37.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure with the following clarifications:

Table 5.3.37.4-1: SIP PUBLISH (step 3, Table 5.3.37.3-1)

Derivation Path: Table 5.5.2.11-1, condition PRESENCE-EVENT				
Information Element	Value/remark	Comment	Reference	Condition
Message-body				
MIME body part		**MCPTT Info**	TS 24.379 [9] clause 9A.2.1.2	MCPTT
MIME-part-body	MCData-Info as described in Table 5.3.37.4-2			
MIME body part		**MCData Info**	TS 24.282 [87] clause 22.2.1.2	MCDATA
MIME-part-body	MCData-Info as described in Table 5.3.37.4-3			
MIME body part		**PIDF**		
MIME-part-body	PIDF for MCPTT as described in Table 5.3.37.4-4		TS 24.379 [9] clause 9A.2.1.2	MCPTT
MIME-part-body	PIDF for MCData as described in Table 5.3.37.4-5		TS 24.282 [87] clause 22.2.1.2	MCDATA

Table 5.3.37.4-2: MCPTT-Info in SIP PUBLISH (Table 5.3.37.4-1)

Derivation Path: Table 5.5.3.2.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-request-uri	px_MCPTT_ID_User_A		TS 24.379 [9] clause 9A.2.1.2	

Table 5.3.37.4-3: MCData-Info in SIP PUBLISH (Table 5.3.37.4-1)

Derivation Path: Table 5.5.3.2.1-3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcdata-info				
mcdata-Params				
mcdata-request-uri	px_MCData_ID_User_A		TS 24.282 [87] clause 22.2.1.2	

Table 5.3.37.4-4: PIDF for MCPTT in SIP PUBLISH (Table 5.3.37.4-1)

Derivation Path: Table 5.5.3.5.1-1, condition FUNCTIONAL_ALIAS_STATUS_CHANGE

Table 5.3.37.4-5: PIDF for MCData in SIP PUBLISH (Table 5.3.37.4-1)

Derivation Path: Table 5.5.3.5.1-3, condition FUNCTIONAL_ALIAS_STATUS_CHANGE

Table 5.3.37.4-6: SIP 200 (OK) (step 4, Table 5.3.37.3-1)

Derivation Path: Table 5.5.2.17.1.2-1, condition PUBLISH-RSP

Table 5.3.37.4-7: SIP NOTIFY (step 5, Table 5.3.37.3-1)

Derivation Path: Table 5.5.2.8-1, condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**PIDF**		
MIME-part-body	PIDF for MCPTT as described in Table 5.3.37.4-8		TS 24.379 [9] clause 9A.2.2.2.5	MCPTT
MIME-part-body	PIDF for MCData as described in Table 5.3.37.4-9		TS 24.282 [87] clause 22.2.2.2.5	MCDATA

Table 5.3.37.4-8: PIDF for MCPTT in SIP NOTIFY (Table 5.3.37.4-7)

Derivation Path: Table 5.5.3.5.2-1, condition FUNCTIONAL_ALIAS_ACTIVATED, NOTIFY_FOR_PUBLISH

Table 5.3.37.4-9: PIDF for MCData in SIP NOTIFY (Table 5.3.37.4-7)

Derivation Path: Table 5.5.3.5.2-3, condition FUNCTIONAL_ALIAS_ACTIVATED, NOTIFY_FOR_PUBLISH

5.3A Generic test procedures for UE MCPTT operation

5.3A.1 MCPTT CO session establishment/modification without provisional responses other than 100 Trying

5.3A.1.1 Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

5.3A.1.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3A.1.3 Procedure

Table 5.3A.1.3-1: MCPTT CO session establishment/modification without provisional responses other than 100 Trying

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the MCPTT call establishment described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCPTT client) send a SIP INVITE requesting the establishment/modification of an MCPTT call?	-->	SIP INVITE	-	P
3	The SS sends a SIP 100 Trying	<--	SIP 100 (Trying)	-	-
4	The SS (MCPTT server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
5	Check: Does the UE (MCPTT client) send a SIP ACK to acknowledge the session establishment/modification?	-->	SIP ACK	-	P
-	EXCEPTION: Steps 6a1 describes behaviour that depends on the test case requirements; the "lower case letter" identifies a step sequence that takes place if the UE requests implicit floor control in step 2 (i.e. the "mc_implicit_request" fmtp attribute included in the SDP offer and the SS responded with the "mc_implicit_request" fmtp attribute included and the "mc_granted" fmtp attribute not present in the SDP answer. (NOTE 1)	-	-	-	-
6a1	The SS (MCPTT server) sends a Floor Granted message.	<--	Floor Granted	-	-
NOTE 1: Possibilities in SDP-offer/answer depend on the test case requirements					

NOTE 1: Possibilities in SDP-offer/answer depend on the test case requirements
- a. UE sends SDP offer with media description for floor control but without implicit floor request
- b. UE sends SDP offer with media description for floor control and with implicit floor request
  - i. SDP answer from SS contains "mc_implicit_request" and "mc_granted" (Floor is implicitly granted)
  - ii. SDP answer from SS contains "mc_implicit request" and but no "mc_granted" (Floor needs to be explicitly granted at step 6a1)
  - iii. SDP answer from SS contains no "mc_implicit_request"and no "mc_granted" (the UE needs to explicitly request the floor)
- c. UE sends SDP offer without media description for floor control

5.3A.1.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure with the following clarifications:

Table 5.3A.1.4-1: SIP INVITE (step 2, Table 5.3A.1.3-1)

Derivation Path: Table 5.5.2.5.1-1, condition MCPTT

Table 5.3A.1.4-2: SIP 200 (OK) (step 4, Table 5.3A.1.3-1)

Derivation Path: Table 5.5.2.17.1.2-1, condition INVITE-RSP and MCPTT

5.3A.2 Void

5.3A.3 MCPTT CO call establishment using a pre-established session

5.3A.3.1 Initial conditions

As specified in the test case which calls the procedure.

5.3A.3.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3A.3.3 Procedure

Table 5.3A.3.3-1: MCPTT CO call establishment using a pre-established session

St	Procedure	Message Sequence		TP	Verdict
		U - S	**Message**		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the MCPTT call establishment described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCPTT client) send a SIP REFER message to request the establishment of an MCPTT call using a pre-established session?	-->	SIP REFER	-	P
3	The SS (MCPTT server) responds with a SIP 200 (OK) message indicating that the MCPTT call has been established	<--	SIP 200 (OK)	-	-
4	The SS sends a Connect message	<--	Connect	-	-
5	Check: Does the UE (MCPTT client) send an Acknowledge message in response to the Connect message?	-->	Acknowledge	-	P

5.3A.3.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3A.4 MCPTT CO call release keeping the pre-established session

5.3A.4.1 Initial conditions

As specified in the test case which calls the procedure.

5.3A.4.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3A.4.3 Procedure

Table 5.3A.4.3-1: MCPTT CO call release keeping the pre-established session

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT client) send a SIP REFER message with method "BYE" to release the MCPTT session and keep the pre-established session?	-->	SIP REFER	-	P
2	The SS (MCPTT server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
3	The SS waits 2 seconds before the SS releases the RRC connection. NOTE: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished and any not allowed behaviour captured.	-	-	-	-

5.3A.4.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3A.4.4-1: SIP REFER (step 1, Table 5.3A.4.3-1)

Derivation Path: Table 5.5.2.12-1, condition METHOD-BYE

Table 5.3A.4.4-2: SIP 200 (OK) (step 2, Table 5.3A.4.3-1)

Derivation Path: Table 5.5.2.17.1.2-1, condition REFER-RSP

5.3A.5 MCPTT CT call release keeping the pre-established session

5.3A.5.1 Initial conditions

As specified in the test case which calls the procedure.

5.3A.5.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3A.5.3 Procedure

Table 5.3A.5.3-1: MCPTT CT call release keeping the pre-established session

St	Procedure	Message Sequence		TP	Verdict
		U - S	**Message**		
1	The SS (MCPTT server) releases the call by sending a Disconnect message	<--	Disconnect	-	-
2	Check: Does the UE (MCPTT client) send an Acknowledge message to accept the release of the call?	-->	Acknowledge	-	P
3	The SS waits 2 seconds before the SS releases the RRC connection. NOTE: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished and any not allowed behaviour captured.	-	-	-	-

5.3A.5.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3A.5.4-1: Disconnect (step 1, Table 5.3A.5.3-1)

Derivation Path: Table 5.5.6.13-1, condition ACK

5.3A.6 MCPTT CO session modification

5.3A.6.1 Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

5.3A.6.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3A.6.3   Procedure

Table 5.3A.6.3-1: MCPTT CO session modification

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT client) send a SIP INVITE requesting the modification of an MCPTT call?	-->	SIP re-INVITE	-	P
2	The SS sends a SIP 100 Trying	<--	SIP 100 (Trying)	-	-
3	The SS (MCPTT server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
4	Check: Does the UE (MCPTT client) send a SIP ACK to acknowledge the session modification?	-->	SIP ACK	-	P
-	EXCEPTION: Steps 5a1-5a2 describe behaviour that depends on whether the UE has implicitly requested a grant at step 1 which has not implicitly been granted at step 3. (NOTE 1)	-	-	-	-
5a1	IF the media description for media control in the 200 OK at step 3 contains fmtp parameter mc_implicit_request but no fmtp parameter mc_granted THEN the SS (MCPTT server) sends a Floor Granted message with request for acknowledgement.	<--	Floor Granted	-	-
5a2	Check: Does the UE (MCPTT client) sends a Floor Ack message?	-->	Floor Ack	-	P
NOTE 1: An implicit floor control may be requested in case of upgrade to an emergency or imminent peril group call but not in case of a downgrade or any other re-INVITE					

5.3A.6.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3A.6.4-1: SIP 200 (OK) (step 3, Table 5.3A.6.3-1)

Derivation Path: Table 5.5.2.17.1.2-1, condition INVITE-RSP

Table 5.3A.6.4-2: Floor Granted (step 5a1, Table 5.3A.6.3-1)

Derivation Path: Table 5.5.6.3-1, condition ACK

Table 5.3A.6.4-3: Floor Ack (Step 5a2, Table 5.3A.6.3-1)

Derivation Path: Table 5.5.6.11-1, condition UPLINK

5.3A.7   Void

5.3A.8   MCPTT CT Call establishment using a pre-established session

5.3A.8.1   Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

5.3A.8.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3A.8.3 Procedure

Table 5.3A.8.3-1: MCPTT CT Call establishment using a pre-established session

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	E-UTRA/EPC signalling according to clause 5.4.4 'MCX CT communication in E-UTRA' takes place	-	-	-	-
2	SS initiates an on-demand pre-arranged group call with automatic commencement mode using a pre-established session by sending a Connect message	<--	Connect	-	-
3	Check: Does the UE (MCPTT client) send an Acknowledge message to accept the incoming pre-arranged group call using a pre-established session?	-->	Acknowledge	-	P

5.3A.8.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3A.9 Void

5.3A.10 Void

5.3A.11 MCPTT Floor Request – Floor Granted

5.3A.11.1 Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

5.3A.11.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3A.11.3 Procedure

Table 5.3A.11.3-1: MCPTT Floor Request – Floor Granted

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT client) send a Floor Request message?	-->	Floor Request	-	P
2	The SS (MCPTT server) sends a Floor Granted message with request for acknowledgement.	<--	Floor Granted	-	-
3	Check: Does the UE (MCPTT client) send a Floor Ack message?	-->	Floor Ack	-	P
4	Check: Does the UE (MCPTT client) provide floor granted notification to the user? (NOTE 1)	-	-	-	P
NOTE 1: This expected to be done via a suitable implementation dependent MMI.					

5.3A.11.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3A.11.4-1: Floor Granted (Step 2, Table 5.3A.11.3-1)

Derivation Path: Table 5.5.6.3-1, condition ACK

Table 5.3A.11.4-2: Floor Ack (Step 3, Table 5.3A.11.3-1)

Derivation Path: Table 5.5.6.11-1, condition UPLINK

5.3A.12 MCPTT Floor Request – Floor Queue Position Info

5.3A.12.1 Initial conditions

As specified in the test case which calls the procedure.

5.3A.12.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3A.12.3 Procedure

Table 5.3A.12.3-1: MCPTT Floor Request – Floor Queue Position Info

St	Procedure	Message Sequence		TP	Verdict
		U - S	**Message**		
1	Check: Does the UE (MCPTT client) send a Floor Request message?	-->	Floor Request	-	P
2	The SS (MCPTT server) sends a Floor Queue Position Info message indicating that the Floor Request is queued.	<--	Floor Queue Position Info	-	-

5.3A.12.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3A.13 MCPTT Queuing Position Request

5.3A.13.1 Initial conditions

As specified in the test case which calls the procedure.

5.3A.13.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3A.13.3   Procedure

Table 5.3A.13.3-1: MCPTT Queuing Position Request

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT client) send a Floor Queue Position Request message?	-->	Floor Queue Position Request	-	P
2	The SS (MCPTT server) responds with a Floor Queue Position Info message.	<--	Floor Queue Position Info	-	-

5.3A.13.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3A.14 MCPTT Floor Request – Floor Deny

5.3A.14.1   Initial conditions

As specified in the test case which calls the procedure.

5.3A.14.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3A.14.3   Procedure

Table 5.3A.14.3-1: MCPTT Floor Request – Floor Deny

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT client) send a Floor Request message?	-->	Floor Request	-	P
2	The SS (MCPTT server) sends a Floor Deny message	<--	Floor Deny	-	-
3	Check: Does the UE (MCPTT client) provide floor deny notification to the user? (NOTE 1)	-	-	-	P
NOTE 1: This expected to be done via a suitable implementation dependent MMI.					

5.3A.14.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3A.15 MCPTT Floor Release – Floor Idle

5.3A.15.1   Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

5.3A.15.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3A.15.3 Procedure

Table 5.3A.15.3-1: MCPTT Floor Release – Floor Idle

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT client) send a Floor Release message?	-->	Floor Release	-	P
-	EXCEPTION: Step 2a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE requests an acknowledgement to the Floor Release message.	-	-	-	-
2a1	The SS (MCPTT server) sends a Floor Ack message.	<--	Floor Ack	-	-
3	The SS (MCPTT server) sends a Floor Idle message.	<--	Floor Idle	-	-

5.3A.15.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3A.15.4-1: Floor Ack (Step 2a1, Table 5.3A.15.3-1)

Derivation Path: Table 5.5.11.3-1, condition DOWNLINK

5.3A.16 MCPTT Floor Release – Floor Taken

5.3A.16.1 Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

5.3A.16.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3A.16.3 Procedure

Table 5.3A.16.3-1: MCPTT Floor Release – Floor Taken

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT client) send a Floor Release message?	-->	Floor Release	-	P
-	EXCEPTION: Step 2a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE requests an acknowledgement to the Floor Release message.	-	-	-	-
2a1	The SS (MCPTT server) sends a Floor Ack message.	<--	Floor Ack	-	-
3	The SS (MCPTT server) sends a Floor Taken message.	<--	Floor Taken	-	-

5.3A.16.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3A.16.4-1: Floor Ack (Step 2, Table 5.3A.16.3-1)

Derivation Path: Table 5.5.11.3-1, condition DOWNLINK

5.3B Generic test procedures for UE MCVideo operation

5.3B.1 MCVideo CO session establishment/modification without provisional responses other than 100 Trying

5.3B.1.1 Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

5.3B.1.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3B.1.3   Procedure

Table 5.3B.1.3-1: MCVideo CO session establishment/modification without provisional responses other than 100 Trying

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which are related to the MCVideo call establishment described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCVideo client) send a SIP INVITE requesting the establishment/modification of an MCVideo call?	-->	SIP INVITE	-	P
3	The SS sends SIP 100 Trying	<--	SIP 100 (Trying)	-	-
4	The SS (MCVideo server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
5	Check: Does the UE (MCVideo client) send a SIP ACK to acknowledge the session establishment/modification?	-->	SIP ACK	-	P
-	EXCEPTION: Steps 6a1-6a2 describe behaviour that depends on the test case requirements; the "lower case letter" identifies a step sequence that takes place if the UE requests implicit transmission control in step 2 (i.e. the "mc_implicit_request" fmtp attribute included in the SDP offer and the SS responded with the "mc_implicit_request" fmtp attribute included and the "mc_granted" fmtp attribute not present in the SDP answer. (NOTE 1)	-	-	-	-
6a1	The SS (MCVideo server) sends a Transmission Granted message with request for acknowledgement.	<--	Transmission Granted	-	-
6a2	Check: Does the UE (MCVideo client) send a Transmission Control Ack message?	-->	Transmission Control Ack	-	P
NOTE 1: Possibilities in SDP-offer/answer depend on the test case requirements a. UE sends SDP offer with media description for transmission control but without implicit transmission request b. UE sends SDP offer with media description for transmission control and with implicit transmission request i. SDP answer from SS contains "mc_implicit_request" and "mc_granted" (Transmission is implicitly granted) ii. SDP answer from SS contains "mc_implicit request" and but no "mc_granted" (Transmission needs to be explicitly granted ar step 6a1) iii. SDP answer from SS contains no "mc_implicit_request"and no "mc_granted" (the UE needs to explicitly request the transmission) c. UE sends SDP offer without media description for transmission control				

5.3B.1.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure with the following clarifications:

Table 5.3B.1.4-1: SIP INVITE (step 2, Table 5.3B.1.3-1)

Derivation Path: Table 5.5.2.5.1-1, condition MCVIDEO

Table 5.3B.1.4-2: SIP 200 (OK) (step 4, Table 5.3B.1.3-1)

Derivation Path: Table 5.5.2.17.1.2-1, condition INVITE-RSP and MCVIDEO

Table 5.3B.1.4-3: Transmission Granted (step 6a1, Table 5.3B.1.3-1)

Derivation Path: Table 5.5.11.2.1-1, condition ACK

Table 5.3B.1.4-4: Transmission Control Ack (step 6a2, Table 5.3B.1.3-1)

Derivation Path: Table 5.5.11.3.5-1, condition UPLINK

5.3B.2 MCVideo Transmission request – Transmission Granted

5.3B.2.1 Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

5.3B.2.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3B.2.3 Procedure

Table 5.3B.2.3-1: MCVideo Transmission Request – Transmission Granted

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCVideo client) send a Transmission Request message?	-->	Transmission Request	-	P
2	The SS (MCVideo server) sends a Transmission Granted message with request for acknowledgement.	<--	Transmission Granted	-	-
3	Check: Does the UE (MCVideo client) send a Transmission Control Ack message?	-->	Transmission Control Ack	-	P
4	Check: Does the UE (MCVideo client) provide transmission granted notification to the user? (NOTE 1)	-	-	-	P
NOTE 1: This expected to be done via a suitable implementation dependent MMI.					

5.3B.2.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3B.2.4-1: Transmission Granted (step 2, Table 5.3B.2.3-1)

Derivation Path: Table 5.5.11.2.1-1, condition ACK

Table 5.3B.2.4-2: Transmission Control Ack (step 3, Table 5.3B.2.3-1)

Derivation Path: Table 5.5.11.3.5-1, condition UPLINK

5.3B.3 MCVideo Media Transmission Notification and Request CT

5.3B.3.1 Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

5.3B.3.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3B.3.3   Procedure

Table 5.3B.3.3-1: MCVideo Media Transmission Notification and Request CT

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS (MCVideo server) sends a Media Transmission Notification message.	<--	Media Transmission Notification	-	-
2	Check: Does the UE (MCVideo client) provide media transmission notification to the user? (NOTE 1)	-	-	-	P
-	EXCEPTION: Steps 3a1 – 3a4a1 describe behaviour that depends on the requirements of test case calling the present procedure.	-	-	-	-
3a1	IF the test case specifies the Reception Mode field of the Media Transmission Notification message to be 1 (indicating manual reception mode) THEN make the UE (MCVideo client) request permission to receive media. (NOTE 1)	-	-	-	-
3a2	Check: Does the UE (MCVideo client) send a Receive Media Request message?	-->	Receive Media Request	-	P
3a3	The SS (MCVideo server) sends a Receive Media Response message.	<--	Receive Media Response	-	-
-	EXCEPTION: Step 3a4a1 describes behaviour that depends on the requirements of test case calling the present procedure.	-	-	-	-
3a4a 1	IF the test case specifies the Receive Media Response message to request an acknowledgement THEN Check: Does the UE (MCVideo client) send a Transmission Control Ack message?	-->	Transmission Control Ack	-	P
NOTE 1: This expected to be done via a suitable implementation dependent MMI.					

5.3B.3.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3B.3.4-1: Transmission Control Ack (step 3a4a1, Table 5.3B.3.3-1)

Derivation Path: Table 5.5.11.3.5-1, condition UPLINK

5.3B.4   MCVideo Transmission Request - Queue Position Info

5.3B.4.1   Initial conditions

As specified in the test case which calls the procedure.

5.3B.4.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3B.4.3   Procedure

Table 5.3B.4.3-1: MCVideo Transmission Request – Queue Position Info

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCVideo client) send a Transmission Request message?	-->	Transmission Request	-	P
2	The SS (MCVidao server) sends a Queue Position Info message indicating that the Transmission Request is queued.	<--	Queue Position Info	-	-

5.3B.4.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3B.5   MCVideo Queue Position Request

5.3B.5.1   Initial conditions

As specified in the test case which calls the procedure.

5.3B.5.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3B.5.3   Procedure

Table 5.3B.5.3-1: MCVideo Queue Position Request

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCVideo client) send a Queue Position Request message?	-->	Queue Position Request	-	P
2	The SS (MCVideo server) responds with a Queue Position Info message.	<--	Queue Position Info	-	-
-	EXCEPTION: Step 3a1 describes behaviour that depends on the requirements of test case calling the present procedure.	-	-	-	-
3a1	IF the test case specifies the Queue Position Info message to request an acknowledgement THEN Check: Does the UE (MCVideo client) acknowledge receipt of the Queue Position Info message?	-->	Transmission Control Ack	-	P

5.3B.5.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3B.5.4-1: Transmission Control Ack (step 3a1, Table 5.3B.5.3-1)

Derivation Path: Table 5.5.11.3.5-1, condition UPLINK

5.3B.6   MCVideo Transmission Request - Transmission Rejected

5.3B.6.1   Initial conditions

As specified in the test case which calls the procedure.

5.3B.6.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3B.6.3   Procedure

Table 5.3B.6.3-1: MCVideo Transmission Request – Transmission Rejected

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCVideo client) send a Transmission Request message?	-->	Transmission Request	-	P
2	The SS (MCVideo server) sends a Transmission Rejected message.	<--	Transmission Rejected	-	-
3	Check: Does the UE (MCVideo client) provide Transmission Rejected notification to the user? (NOTE 1)	-	-	-	P
NOTE 1: This expected to be done via a suitable implementation dependent MMI.					

5.3B.6.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

5.3B.7   MCVideo Transmission End Request CO

5.3B.7.1   Initial conditions

As specified in the test case which calls the procedure.

5.3B.7.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3B.7.3   Procedure

Table 5.3B.7.3-1: MCVideo transmission End Request CO

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCVideo client) send a Transmission End Request message?	-->	Transmission End Request	-	P
2	The SS (MCVideo server) responds with a Transmission End Response message with request for acknoledgement.	<--	Transmission End Response	-	-
3	Check: Does the UE (MCVideo client) send a Transmission Control Ack message?	-->	Transmission Control Ack	-	P
4	The SS (MCVideo server) sends a Transmission Idle message.	<--	Transmission Idle	-	-
NOTE 1: This expected to be done via a suitable implementation dependent MMI.					

5.3B.7.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3B.7.4-1: Transmission End Request (Step 1, Table 5.3B.7.3-1)

Derivation Path: Table 5.5.11.3.1-1, condition UPLINK

Table 5.3B.7.4-2: Transmission End Response (Step 2, Table 5.3B.7.3-1)

Derivation Path: Table 5.5.11.3.2-1, condition DOWNLINK, ACK

Table 5.3B.7.4-3: Transmission Control Ack (step 3, Table 5.3B.7.3-1)

Derivation Path: Table 5.5.11.3.5-1, condition UPLINK

5.3B.8 MCVideo Media Reception End Request CO

5.3B.8.1 Initial conditions

As specified in the test case which calls the procedure.

5.3B.8.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3B.8.3 Procedure

Table 5.3B.8.3-1: MCVideo Media Reception End Request CO

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCVideo client) send a Media Reception End Request message?	-->	Media Reception End Request	-	P
2	The SS (MCVideo server) sends a Receive Media Reception End Response message.	<--	Media Reception End Response	-	-
3	The SS (MCVideo server) sends a Transmission Idle message.	<--	Transmission Idle	-	-

5.3B.8.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3B.8.4-1: Media Reception End Request (Step 1, Table 5.3B.8.3-1)

Derivation Path: Table 5.5.11.3.3-1, condition UPLINK

Table 5.3B.8.4-2: Media Reception End Response (Step 2, Table 5.3B.8.3-1)

Derivation Path: Table 5.5.11.3.4-1, condition DOWNLINK

5.3B.9 MCVideo Transmission End Request CT

5.3B.9.1 Initial conditions

As specified in the test case which calls the procedure.

5.3B.9.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3B.9.3 Procedure

Table 5.3B.9.3-1: MCVideo Transmission End Request CT

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS (MCVideo server) sends a Transmission End Request message.	<--	Transmission End Request	-	-
2	Void	-	-	-	-
2A	Check: Does the UE (MCVideo client) respond with a Transmission End Response message?	-->	Transmission End Response	-	P
3	Void	-	-	-	-
3A	Check Does the UE (MCVideo client) notify the user that the permission to send RTP media is being revoked? (NOTE 1)	-	-	-	P
4	The SS (MCVideo server) sends a Transmission Idle message.	<--	Transmission Idle	-	-
NOTE 1: This expected to be done via a suitable implementation dependent MMI.					

5.3B.9.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3B.9.4-1: Transmission End Request (Step 1, Table 5.3B.9.3-1)

Derivation Path: Table 5.5.11.3.1-1, condition DOWNLINK

Table 5.3B.9.4-2: Transmission End Response (Step 2, Table 5.3B.9.3-1)

Derivation Path: Table 5.5.11.3.2-1, condition UPLINK

5.3B.10 MCVideo Media Reception End Request CT

5.3B.10.1 Initial conditions

As specified in the test case which calls the procedure.

5.3B.10.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3B.10.3   Procedure

Table 5.3B.10.3-1: MCVideo Media Reception End Request CT

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS (MCVideo server) sends a Media Reception End Request message.	<--	Media Reception End Request	-	-
2	Void	-	-	-	-
2A	Check: Does the UE (MCVideo client) respond with a Media Reception End Response message?	-->	Media Reception End Response	-	P
3	Void	-	-	-	-
3A	Check: Does the UE (MCVideo client) notify the user that the permission to send RTP media is being revoked? (NOTE 1)	-	-	-	P
4	The SS (MCVideo server) sends a Transmission Idle message.	<--	Transmission Idle	-	-
NOTE 1: This expected to be done via a suitable implementation dependent MMI.					

5.3B.10.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3B.10.4-1: Media Reception End Request (Step 1, Table 5.3B.10.3-1)

Derivation Path: Table 5.5.11.3.3-1, condition DOWNLINK

Table 5.3B.10.4-2: Media Reception End Response (Step 2, Table 5.3B.10.3-1)

Derivation Path: Table 5.5.11.3.4-1, condition UPLINK

5.3B.11 MCVideo CO session modification

5.3B.11.1   Initial conditions

As specified in the test case which calls the procedure in its entirety or refers to parts of it.

5.3B.11.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3B.11.3 Procedure

Table 5.3B.11.3-1: MCVideo CO session modification

St	Procedure	Message Sequence		TP	Verdict
		U - S	**Message**		
1	Check: Does the UE (MCVideo client) send a SIP INVITE requesting the modification of the call?	-->	SIP re-INVITE	-	P
2	The SS sends SIP 100 Trying	<--	SIP 100 (Trying)	-	-
3	The SS (MCVideo server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
4	Check: Does the UE (MCVideo client) send a SIP ACK to acknowledge the session modification?	-->	SIP ACK	-	P
-	EXCEPTION: Steps 5a1-5a2 describe behaviour that depends on whether the UE has implicitly requested a grant at step 1 which has not implicitly been granted at step 3 (NOTE 1)	-	-	-	-
5a1	IF the media description for media control in the 200 OK contains fmtp parameter mc_implicit_request but no fmtp parameter mc_granted THEN the SS (MCVideo server) sends a Transmission Granted message with request for acknowledgement.	<--	Transmission Granted	-	-
5a2	Check: Does the UE (MCVideo client) send a Transmission Control Ack message?	-->	Transmission Control Ack	-	P
NOTE 1: An implicit transmit media request may be requested in case of upgrade to an emergency or imminent peril MCVideo group call but not in case of a downgrade or any other re-INVITE					

5.3B.11.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3B.11.4-1: SIP 200 (OK) (step 3, Table 5.3B.11.3-1)

Derivation Path: Table 5.5.2.17.1.2-1, condition INVITE-RSP

Table 5.3B.11.4-2: Transmission Granted (step 5a1, Table 5.3B.11.3-1)

Derivation Path: Table 5.5.11.2.1-1, condition ACK

Table 5.3B.11.4-3: Transmission Control Ack (step 5a2, Table 5.3B.11.3-1)

Derivation Path: Table 5.5.11.3.5-1, condition UPLINK

5.3C Generic test procedures for UE MCData operation

5.3C.1 CO SDS or FD message transfer using signalling plane

5.3C.1.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.1.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3C.1.3 Procedure

Table 5.3C.1.3-1: CO SDS or FD message transfer using signalling plane

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCData client) send a SIP MESSAGE request?	-->	SIP MESSAGE	-	P
3	The SS (MCData server) sends a SIP 202 (Accepted) response	<--	SIP 202 (Accepted)	-	-
4	The SS waits 2 seconds before the SS releases the RRC connection. (NOTE 1)	-	-	-	-
NOTE 1: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished.					

5.3C.1.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3C.2 CO MCData Call Establishment

5.3C.2.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.2.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3C.2.3   Procedure

Table 5.3C.2.3-1: CO MCData Call Establishment

St	Procedure	Message Sequence		TP	Verdict
		U - S	**Message**		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCData client) send a SIP INVITE requesting the establishment of an MCData call?	-->	SIP INVITE	-	P
3	The SS sends a SIP 100 Trying	<--	SIP 100 (Trying)	-	-
4	The SS (MCData server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
5	Check: Does the UE (MCData client) send a SIP ACK to acknowledge the session establishment/modification?	-->	SIP ACK	-	P
6	The UE (MCData client) connects to the TCP server at the SS side to establish an MSRP connection. (NOTE 1)	-	-	-	-
7	Check: Does the UE (MCData client) send an empty MSRP SEND request to bind the TCP connection to the MSRP session?	-->	MSRP SEND	-	P
8	The SS (MCData server) sends an MSRP 200 (OK) response.	<--	MSRP 200 (OK)	-	-
NOTE 1: According to TS 24.282 [87] clauses 9.2.3.4.2, 9.2.4.4.2 and 10.2.5.4.2 the SS sets the a=setup attribute set to "passive" (see table 5.5.3.1.2-3) ⇒ The UE's MCData client has the role of the active endpoint					

5.3C.2.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3C.2.4-1: MSRP SEND (Step 7, Table 5.3C.2.3-1)

Derivation Path: Table 5.5.12.1-1, condition EMPTY_SEND_REQ

5.3C.3   CT MCData Call Establishment

5.3C.3.1   Initial conditions

As specified in the test case which calls the procedure.

5.3C.3.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3C.3.3   Procedure

Table 5.3C.3.3-1: CT MCData Call Establishment

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions which described in clause 5.4.4 'MCX CT communication in E-UTRA' take place.	-	-	-	-
2	The SS (MCX Server) sends a SIP INVITE requesting the establishment of an MCData call.	<--	SIP INVITE	-	-
-	EXCEPTION: Step 3a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE responds to a SIP INVITE with a SIP 100 (Trying)	-	-	-	-
3a1	The UE (MCX client) sends a SIP 100 (Trying)	-->	SIP 100 (Trying)	-	-
4	Check: Does the UE (MCX client) send a SIP 200 (OK)?	-->	SIP 200 (OK)	-	P
5	The SS (MCX server) sends a SIP ACK	<--	SIP ACK	-	-
-	EXCEPTION: Steps 6a1 - 6b3 describe behaviour that depends on which role of an endpoint the UE (MCData client) has chosen in its SDP answer sent at step 4	-	-	-	-
6a1	IF the UE (MCData client) acts as passive endpoint (NOTE 1) THEN the SS connects to the TCP server at the UE side to establish an MSRP connection	-	-	-	-
6a2	The SS sends an empty MSRP SEND request to bind the TCP connection to the MSRP session.	<--	MSRP SEND	-	-
6a3	Check: Does the UE (MCData client) send an MSRP 200 (OK) response?	-->	MSRP 200 (OK)	-	P
6b1	ELSE (NOTE 2) the UE (MCData client) connects to the TCP server at the SS side to establish an MSRP connection	-	-	-	-
6b2	Check: Does the UE (MCData client) send an empty MSRP SEND request to bind the TCP connection to the MSRP session?	-->	MSRP SEND	-	P
6b3	The SS (MCData server) sends an MSRP 200 (OK) response.	<--	MSRP 200 (OK)	-	-
NOTE 1: The MCData client indicates to act as passive endpoint by setting the a=setup attribute of the SDP answer at step 4 to "passive" (according to RFC 4145 [119])					
NOTE 2: The MCData client indicates to act as active endpoint by setting the a=setup attribute of the SDP answer at step 4 to "active" (according to RFC 4145 [119])					

5.3C.3.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3C.3.4-1: MSRP SEND (Step 6a2, Table 5.3C.3.3-1)

Derivation Path: Table 5.5.12.2-1, condition EMPTY_SEND_REQ

Table 5.3C.3.4-2: MSRP SEND (Step 6b2, Table 5.3C.3.3-1)

Derivation Path: Table 5.5.12.1-1, condition EMPTY_SEND_REQ

5.3C.4 CO MSRP message transfer

5.3C.4.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.4.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3C.4.3 Procedure

Table 5.3C.4.3-1: CO MSRP message transfer

St	Procedure	Message Sequence		TP	Verdict
		U - S	**Message**		
-	EXCEPTION: Steps 1-2 are repeated until the UE (MCData client) indicates the end of the message by setting the continuation-flag to "$" in the End-line of the MSRP SEND request at step 1	-	-	-	-
1	Check: Does the UE (MCData client) send an MSRP SEND request?	-->	MSRP SEND	-	P
2	The SS (MCData server) sends an MSRP 200 (OK) response.	<--	MSRP 200 (OK)	-	-
3	In case of chunking the SS reassembles the data contained in the bodies of the MSRP SEND requests. (NOTE 1)	-	-	-	-
NOTE 1: In case of no chunking there is only one MSRP SEND request which contains the entire data. In case of chunking there are more than one MSRP SEND requests containing the chunks of data and the content type shall be the same for all MSRP SEND requests.					

5.3C.4.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3C.5 CT MSRP message transfer

5.3C.5.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.5.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3C.5.3 Procedure

Table 5.3C.5.3-1: CT MSRP message transfer

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS sends an MSRP SEND request containing the entire data. (NOTE 1)	<--	MSRP SEND	-	-
2	Check: Does the UE (MCData client) send an MSRP 200 (OK) response?	-->	MSRP 200 (OK)	-	P
NOTE 1: No chunking is applied in DL.					

5.3C.5.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3C.6 CO MCData call release

5.3C.6.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.6.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3C.6.3   Procedure

Table 5.3C.6.3-1: CO MCData call release

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCData client) send a SIP BYE request to terminate the MCData communication?	-->	SIP BYE	-	P
2	The SS (MCData server) sends a SIP 200 (OK) response.	<--	SIP 200 (OK)	-	-
-	EXCEPTION: Steps 3a1 - 3b1 describe behaviour that depends on the endpoint role the UE (MCData client) has chosen at call establishment. (NOTE 1)	-	-	-	-
3a1	IF the client is the active endpoint THEN the SS waits 3s for the client to close the MSRP TCP connection. (NOTE 2)	-	-	-	-
3b1	ELSE the SS closes the MSRP TCP connection. (NOTE 3)	-	-	-	-
4	The SS waits 2 seconds before it deactivates the dedicated EPS bearer. (NOTE 4, 5).	-	-	-	-
NOTE 1: The endpoint role is negotiated in the SDP signalling at call establishment (table 5.3C.2.3-1 and 5.3C.3.3-1)					
NOTE 2: After the wait period the SS may stop the MSRP TCP server independent from whether or not the UE has closed the connection.					
NOTE 3: When the SS has the role of the active endpoint it means that the MCData client hosts the TCP server of the MSRP connection.					
NOTE 4: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished and any not allowed behaviour captured.					
NOTE 5: The RRC connection is kept to allow subsequent signalling using the control plane as e.g. an SDS NOTIFICATION in case of Standalone SDS.					

5.3C.6.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3C.7   CT MCData call release

5.3C.7.1   Initial conditions

As specified in the test case which calls the procedure.

5.3C.7.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3C.7.3   Procedure

Table 5.3C.7.3-1: CT MCData call release

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS (MCData server) sends a SIP BYE request to terminate the MCData communication.	<--	SIP BYE	-	-
2	Check: Does the UE (MCData client) send a SIP 200 (OK) response?	-->	SIP 200 (OK)	-	P
-	EXCEPTION: Steps 3a1 - 3b1 describe behaviour that depends on the endpoint role the UE (MCData client) has chosen at call establishment. (NOTE 1)	-	-	-	-
3a1	IF the client is the active endpoint THEN the SS waits 3s for the client to close the MSRP TCP connection. (NOTE 2)	-	-	-	-
3b1	ELSE the SS closes the MSRP TCP connection. (NOTE 3)	-	-	-	-
4	The SS waits 2 seconds before the SS deactivates the dedicated EPS bearer. (NOTE 4, 5)	-	-	-	-
NOTE 1: The endpoint role is negotiated in the SDP signalling at call establishment (table 5.3C.2.3-1 and 5.3C.3.3-1)					
NOTE 2: After the wait period the SS may stop the MSRP TCP server independent from whether or not the UE has closed the connection..					
NOTE 3: When the SS has the role of the active endpoint it means that the MCData client hosts the TCP server of the MSRP connection.					
NOTE 4: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished and any not allowed behaviour captured.					
NOTE 5: The RRC connection is kept to allow subsequent signalling using the control plane as e.g. an SDS NOTIFICATION in case of Standalone SDS.					

5.3C.7.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3C.8   Discovery of the absolute URI of the media storage function (one-to-one communication)

5.3C.8.1   Initial conditions

As specified in the test case which calls the procedure.

5.3C.8.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3C.8.3 Procedure

Table 5.3C.8.3-1: Discovery of the absolute URI of the media storage function (one-to-one)

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called and on the UE implementation.	-	-	-	-
1a1	IF in RRC_IDLE state and pc_MCData_MSFDiscoverySignalling, the E-UTRA/EPC actions described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
-	EXCEPTION: Steps 2a1 – 2b1 describe behaviour that depends on the UE implementation	-	-	-	-
2a1	IF pc_MCData_MSFDiscoverySignalling THEN Check: Does the UE (MCData client) send a SIP MESSAGE request to discover the absolute URI of the media storage function?	-->	SIP MESSAGE	-	P
2a2	The SS (MCData server) sends a SIP 200 (OK) response.	<--	SIP 200 (OK)	-	-
2a3	The SS (MCData server) sends a SIP MESSAGE request containing the absolute URI of the media storage function in the <mcdata-controller-psi> element of the mcdata-info.	<--	SIP MESSAGE	-	-
2a4	Check: Does the UE (MCData client) send a SIP 200 (OK) response?	-->	SIP 200 (OK)	-	P
2b1	ELSE the UE determines the value of the absolute URI associated with the media storage function of the MCData content server from the <MCDataContentServerURI> element of the MCData user profile document	-	-	-	-

5.3C.8.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3C.8.4-1: SIP MESSAGE from the UE (step 2a1, Table 5.3C.8.3-1)

Derivation Path: Table 5.5.2.7.1-1, condition MCDATA_FD				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**MCData-Info**		
MIME-part-body	MCData-Info as described in Table 5.3C.8.4-2			

Table 5.3C.8.4-2: MCDATA-Info from the UE (Table 5.3C.8.4-1)

Derivation Path: Table 5.5.3.2.1-3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcdata-info				
mcdata-Params				
request-type	"msf-disc-req"			

Table 5.3C.8.4-3: SIP MESSAGE from the SS (step 2a3, Table 5.3C.8.3-1)

Derivation Path: Table 5.5.2.7.2-1, condition MCDATA_FD				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
Request-URI	tsc_MCData_PublicServiceId_A	According to TS 24.282 [87] clause 10.2.1.3.3 the participating function just forwards the SIP MESSAGE received from the controlling function to the client		
Accept-Contact				
ac-value[2]	not present			
P-Asserted-Identity				
name-addr	px_MCX_SIP_PublicUserId_A_1	Public user ID of the calling MCData user (TS 24.282 [87] clause 10.2.1.3.4)		
Message-body				
MIME body part		**MCData-Info**		
MIME-part-body	MCData-Info as described in Table 5.3C.8.4-4			

Table 5.3C.8.4-4: MCDATA-Info from the SS (Table 5.3C.8.4-3)

Derivation Path: Table 5.5.3.2.2-3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcdata-info				
mcdata-Params				
request-type	"msf-disc-res"			
mcdata-request-uri	not present			
mcdata-calling-user-id	not present			
mcdata-controller-psi	Encrypted <mcdata-controller-psi> with mcdataURI set to tsc_MCData_MSF_URI	Encrypted according to Table 5.5.3.2.2-3A		

5.3C.9   Discovery of the absolute URI of the media storage function (group communication)

5.3C.9.1   Initial conditions

Same as 5.3C.8.1.

5.3C.9.2   Definition of system information messages

Same as 5.3C.8.2.

5.3C.9.3   Procedure

Same as 5.3C.8.3.

5.3C.9.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3C.9.4-1: SIP MESSAGE from the UE (step 2a1, Table 5.3C.8.3-1)

Derivation Path: Table 5.5.2.7.1-1, condition MCDATA_FD				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**MCData-Info**		
MIME-part-body	MCData-Info as described in Table 5.3C.9.4-2			

Table 5.3C.9.4-2: MCDATA-Info from the UE (Table 5.3C.9.4-1)

Derivation Path: Table 5.5.3.2.1-3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcdata-info				
mcdata-Params				
request-type	"msf-disc-req"			
mcdata-calling-group-id	Encrypted <mcdata-calling-group-id> with mcdataURI set to px_MCData_Group_A_ID	Encrypted according to Table 5.5.3.2.1-3A		

Table 5.3C.9.4-3: SIP MESSAGE from the SS (step 2a3, Table 5.3C.8.3-1)

Same as Table 5.3C.8.4-3

5.3C.10   FD file upload using HTTP

5.3C.10.1   Initial conditions

As specified in the test case which calls the procedure.

5.3C.10.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3C.10.3 Procedure

Table 5.3C.10.3-1: FD file upload using HTTP

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCData client) send an HTTP POST request to upload a file to the media storage function?	-->	HTTP POST	-	P
3	The SS (MCData server) sends an HTTP 201 Created response containing a Location header field with a URL identifying the location of the resource where the file has been stored at the media storage function.	<--	HTTP 201 Created	-	-
4	Check: Does the UE (MCData client) send a SIP MESSAGE request containing an FD SIGNALLING PAYLOAD with Payload content type "FILEURL" and with the Payload data containing the URL of the file?	-->	SIP MESSAGE	-	P
5	The SS (MCData server) sends a SIP 202 (Accepted) response	<--	SIP 202 (Accepted)	-	-
6	The SS waits 2 seconds before the SS releases the RRC connection. (NOTE 1)	-	-	-	-
NOTE 1: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished.					

5.3C.10.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3C.11 FD file accept and download using HTTP

5.3C.11.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.11.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3C.11.3   Procedure

Table 5.3C.11.3-1: FD file accept and download using HTTP

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCData client) send a SIP MESSAGE request containing an FD NOTIFICATION with FD disposition notification type "FILE DOWNLOAD REQUEST ACCEPTED"?	-->	SIP MESSAGE	-	P
3	The SS (MCData server) sends a SIP 202 (Accepted) response	<--	SIP 202 (Accepted)	-	-
4	Check: Does the UE (MCData client) send an HTTP GET request to download the file?	-->	HTTP GET	-	P
5	SS (MCData server) sends an HTTP 200 OK response containing the requested file.	<--	HTTP 200 OK	-	-
-	EXCEPTION: Steps 6a1 describes behaviour that depends on the test case requirements; the "lower case letter" identifies a step sequence that takes place when the SS has included a FD disposition request of "FILE DOWNLOAD COMPLETED UPDATE" in the FD SIGNALLING PAYLOAD	-	-	-	-
6a1	Check: Does the UE (MCData client) send a SIP MESSAGE request containing an FD NOTIFICATION with disposition notification type "FILE DOWNLOAD COMPLETED"?	-->	SIP MESSAGE	-	P
6a2	The SS (MCData server) sends a SIP 202 (Accepted) response	<--	SIP 202 (Accepted)	-	-
7	The SS waits 2 seconds before the SS releases the RRC connection. (NOTE 1)	-	-	-	-
NOTE 1: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished.					

5.3C.11.4   Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

None

5.3C.12   CO MCData call establishment using a pre-established session

5.3C.12.1   Initial conditions

As specified in the test case which calls the procedure.

5.3C.12.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3C.12.3 Procedure

Table 5.3C.12.3-1: CO MCData Call Establishment

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called.	-	-	-	-
1a1	IF in RRC_IDLE state, the E-UTRA/EPC actions described in clause 5.4.3 'MCX CO communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCData client) send a SIP REFER message to request the establishment of an MCPTT call using a pre-established session?	-->	SIP REFER	-	P
3	The SS (MCData server) responds with a SIP 200 (OK) message indicating that the MCPTT call has been established	<--	SIP 200 (OK)	-	-
4	The SS (MCX Server) sends a SIP re-INVITE to verify that the MCData call has been established.	<--	SIP INVITE	-	-
-	EXCEPTION: Step 5a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE responds to a SIP INVITE with a SIP 100 (Trying).	-	-	-	-
5a1	The UE (MCX client) sends a SIP 100 (Trying)	-->	SIP 100 (Trying)	-	-
6	Check: Does the UE (MCX client) respond to the SIP re-INVITE with SIP 200 (OK)?	-->	SIP 200 (OK)	-	P
7	The SS (MCX server) sends a SIP ACK in response to the SIP 200 (OK) message.	<--	SIP ACK	-	-
8	The UE (MCData client) connects to the TCP server at the SS side to establish an MSRP connection. (NOTE 1)	-	-	-	-
9	Check: Does the UE (MCData client) send an empty MSRP SEND request to bind the TCP connection to the MSRP session?	-->	MSRP SEND	-	P
10	The SS (MCData server) sends an MSRP 200 (OK) response.	<--	MSRP 200 (OK)	-	-
NOTE 1: According to TS 24.282 [87] clauses 9.2.3.4.2, 9.2.4.4.2 and 10.2.5.4.2 the SS sets the a=setup attribute set to "passive" (see table 5.5.3.1.2-3) ⇒ The UE's MCData client has the role of the active endpoint					

5.3C.12.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3C.12.4-1: SIP re-INVITE from the SS (step 4, Table 5.3C.12.3-1)

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: Table 5.5.2.5.2-1, condition MCDATA_SDS, re_INVITE				
Request-Line				
Request-URI	tsc_MCX_SessionID_B	session identity of the pre-established session	TS 24.282 [87] clause 9.2.5.2.2.1	
Message-body				
MIME body part	not present	**SDP message**		
MIME body part		**MCData Info**		
MIME-part-body	MCData-Info message as described in Table 5.3C.12.4-2			
Editor's Note: TS 24.282 [87] clause 9.2.5.1.2 does not clearly specify the header fields of the INVITE and therefore the default header fields are used				

Table 5.3C.12.4-2: MCData-Info (Table 5.3C.12.4-1)

Derivation Path: Table 5.5.3.2.2-3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcdata-info				
mcdata-Params				
mcdata-request-uri	not present			
mcdata-calling-user-id	not present			
anyExt				
mcdata-communication-state	"establish-success"		TS 24.282 [87] clause 9.2.5.1.2	

Table 5.3C.12.4-3: SIP 200 (OK) from the UE (step 6, Table 5.3C.12.3-1)

Derivation Path: Table 5.5.2.17.1.1-1, condition INVITE-RSP, MCDATA_SDS				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type	not present			
Message-body	not present			

Table 5.3C.12.4-4: MSRP SEND (Step 9, Table 5.3C.12.3-1)

Derivation Path: Table 5.5.12.1-1, condition EMPTY_SEND_REQ

5.3C.13 MCData CO call release keeping the pre-established session

5.3C.13.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.13.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.3C.13.3 Procedure

Table 5.3C.13.3-1: MCData CO call release keeping the pre-established session

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCData client) send a SIP REFER message with method "BYE" to release the MCData session and keep the pre-established session?	-->	SIP REFER	-	P
2	The SS (MCData server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
3	The SS (MCX Server) sends a SIP re-INVITE to verify the release of the MCData call.	<--	SIP INVITE	-	-
-	EXCEPTION: Step 4a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE responds to a SIP INVITE with a SIP 100 (Trying).	-	-	-	-
4a1	The UE (MCX client) sends a SIP 100 (Trying)	-->	SIP 100 (Trying)	-	-
5	Check: Does the UE (MCX client) respond to the SIP re-INVITE with SIP 200 (OK)?	-->	SIP 200 (OK)	-	P
6	The SS (MCX server) sends a SIP ACK in response to the SIP 200 (OK) message.	<--	SIP ACK	-	-
-	EXCEPTION: Steps 7a1 - 7b1 describe behaviour that depends on the endpoint role the UE (MCData client) has chosen at call establishment. (NOTE 1)	-	-	-	-
7a1	IF the client is the active endpoint THEN the SS waits 3s for the client to close the MSRP TCP connection. (NOTE 2)	-	-	-	-
7b1	ELSE the SS closes the MSRP TCP connection. (NOTE 3)	-	-	-	-
NOTE 1: The endpoint role is negotiated in the SDP signalling at call establishment. NOTE 2: After the wait period the SS may stop the MSRP TCP server independent from whether or not the UE has closed the connection. NOTE 3: When the SS has the role of the active endpoint it means that the MCData client hosts the TCP server of the MSRP connection.					

5.3C.13.4 Specific message contents

All message contents are as specified in clause 5.5 and in the test case calling the procedure, with the following clarifications:

Table 5.3C.13.4-1: SIP REFER (step 1, Table 5.3C.13.3-1)

Derivation Path: Table 5.5.2.12-1, condition METHOD-BYE

Table 5.3C.13.4-2: SIP 200 (OK) (step 2, Table 5.3C.13.3-1)

Derivation Path: Table 5.5.2.17.1.2-1, condition REFER-RSP

Table 5.3C.13.4-3: SIP re-INVITE from the SS (step 3, Table 5.3C.13.3-1)

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: Table 5.5.2.5.2-1, condition MCDATA_SDS, re_INVITE				
Request-Line				
Request-URI	tsc_MCX_SessionID_B	session identity of the pre-established session	TS 24.282 [87] clause 9.2.5.4.2.1	
Message-body				
MIME body part	not present	SDP message		
MIME body part		MCData Info		
MIME-part-body	MCData-Info message as described in Table 5.3C.13.4-4			
Editor's Note: TS 24.282 [87] clause 9.2.5.1.2 does not clearly specify the header fields of the INVITE and therefore the default header fields are used				

Table 5.3C.13.4-4: MCData-Info (Table 5.3C.13.4-3)

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: Table 5.5.3.2.2-3				
mcdata-info				
mcdata-Params				
mcdata-request-uri	not present			
mcdata-calling-user-id	not present			
anyExt				
mcdata-communication-state	"terminated"		TS 24.282 [87] clause 9.2.5.4.2.1	

Table 5.3C.13.4-5: SIP 200 (OK) from the UE (step 5, Table 5.3C.13.3-1)

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: Table 5.5.2.17.1.1-1, condition INVITE-RSP, MCDATA_SDS				
Content-Type	not present			
Message-body	not present			

5.4 Generic test procedures for UE operation over E-UTRA/EPC

5.4.1 General

The purpose of the procedures specified in the following clauses is to facilitate test description by providing procedure sequences which can be referred from the relevant test cases specified e.g. in 3GPP TS 36.579-2 [2], 3GPP TS 36.579-3 [3], 3GPP TS 36.579-6 [84], 3GPP TS 36.579-7 [85].

The intention is, wherever possible, that E-UTRA/EPC signalling and initial conditions should not be provided in the test descriptions rather should be referred to the procedure steps described in the generic procedures below, whereas, the MCS SIP signalling and initial conditions when relevant for the test purposes shall be explicitly provided in the tests description itself.

Throughout the generic test procedures E-UTRA/EPC behaviour is denoted as "SS" for the System Simulator simulating the NWK side of the communication, and, "UE" for the Implementation Under Test (IUT), whereas the MCPTT/MCVideo/MCData relevant behaviour is denoted as "SS (MCPTT/MCVideo/MCData server)" and "UE (MCPTT/MCVideo/MCData client)"/"UE (MCPTT/MCVideo/MCData user)" respectively. ProSe related SS behaviour when the SS simulates an UE device is denoted e.g. as "SS-UE1".

Depending on the TS 36.579-5[5] test model being used, the E-UTRA/EPC signalling is:

- MCX EUTRA test model: normative.

- MCX IPCAN test model: informative, unless specifically specified otherwise elsewhere.

5.4.1A   UE APN/PDN support assumptions

According to TS 23.280 [110] clause 5.2.7.0 an MC service UE shall use APNs for the SIP-1, HTTP-1 and CSC-1 reference points, which may be different or all the same. To limit the test specification complexity it is assumed that only one APN is used and therefore there is a single MCX PDN. In addition there might be an IMS PDN and an internet PDN so that three PDNs need to be taken into account:

1. MCX PDN with default EPS bearer using QCI=69

NOTE 1: It should be noted that the core specs impose a requirement that the QCI value 8 or better shall be used for the EPS bearer that transports HTTP-1 reference point messaging. Using a single APN and having for the EPS bearer QCI=69 will satisfy this.

NOTE 2: Void.

2. Internet PDN with default EPS bearer using QCI=9

3. IMS PDN with default EPS bearer using QCI=5

This results in the need to handle up to three PDNs during MCX conformance tests.

NOTE 3: It should be noted that, handling IMS and MCX with one APN is theoretically possible but may have undesirable implications e.g. VoLTE signalling could delay MCX signalling therefore the assumption is that such implementations will be undesirable and unlikely.

Consequently, for IMS and MCX it should be assumed that the UE will do 2 different registrations, i.e. for each of them there will be a separate IP connection (different IP addresses at the UE and the SS).

Depending on UE configuration PDN connectivities for the up-to three PDNs may be established. There are two major scenarios:

1. The MCX PDN connectivity gets established automatically after switch-on during the initial registration procedure. In addition the UE may establish PDN connectivities to the IMS PDN and/or the internet PDN. The connectivity to these PDNs may be requested in any order. There can be 1, 2 or 3 PDNs.

2. The UE requests PDN connectivities for IMS and/or internet but not for MCX. If IMS and internet are requested, it may be in any order. Establishment of the MCX PDN connectivity is triggered after the initial registration in a separate procedure. There can be 2 or 3 PDNs in total.

To serve the above scenarios the following parameters are defined in TS 36.579-5 [5]:

- px_MCX_InitialRegistration_TypeOfPDN1:
First PDN registered during initial registration (either 'ims' or 'internet' or 'mcx')

- px_MCX_InitialRegistration_TypeOfPDN2:
Second PDN registered during initial registration; in addition to 'ims' or 'internet' or 'mcx' it may be 'none' to indicate that there is no second PDN connectivity requested by the UE during initial registration.

- px_MCX_InitialRegistration_TypeOfPDN3:
Third PDN registered during initial registration; in addition to 'ims' or 'internet' or 'mcx' it may be 'none' to indicate that there is no third PDN connectivity requested by the UE during initial registration.

The type of the parameters is a TTCN-3 enumerated type with values 'ims','internet', 'mcx' and 'none'.

In addition there is the parameter px_AccessPointName in TS 36.523-3 [74] which is used as default APN, i.e. for a PDN for which the UE does not provide an APN (NOTE: Any, but only one, of the three PDNs can be the one with default APN).

Regarding the default EPS bearers for the respective mission critical services the following applies for MCX conformance tests:

- MCPTT:
  A single dedicated EPS bearer with QCI=65 is used with packet filters for the audio stream and media plane control signalling (see also TS 23.379 [126] clause 5.7.3)

- MCVideo:
  A single dedicated EPS bearer with QCI=67 is used with packet filters for the audio and video streams and transmission control signalling (see also TS 23.281 [90] clause 5.5.3)

- MCData:
  A single dedicated EPS bearer with QCI=70 is used with packet filter for the TCP data stream (see also TS 23.282 [91] clause 5.8.3)

5.4.2   MCPTT UE registration

5.4.2.1   Initial conditions

System Simulator:

- SS (MCPTT server)

- E-UTRA related parameters are set to the default parameters for the basic single cell environment, as defined in TS 36.508 [6] clause 4.4, unless otherwise specified in the test case. Requirements in regard to the PLMN which the simulated Cell(s) belongs to are specified in the test case using the present procedure.

IUT:

- UE (MCPTT client)

  - The UE is MCPTT capable. The MCPTT preconditions required for initiation of MCPTT service authorization for the MCPTT client and the MCPTT service are specified in the test cases.

  - The test USIM set as defined in clause 5.5.10 is inserted.

  - The UE shall be switched off.

5.4.2.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.4.2.3   Procedure

Table 5.4.2.3-1: E-UTRA/EPC signalling for UE registration

St	Procedure	Message Sequence	
		U - S	**Message**
0	Switch the UE on.	-	-
1	Void	-	-
2	UE transmits an *RRCConnectionRequest* message.	-->	RRC: *RRCConnectionRequest*
3	SS transmits an *RRCConnectionSetup* message.	<--	RRC: *RRCConnectionSetup*
4	The UE transmits an *RRCConnectionSetupComplete* message to confirm the successful completion of the connection establishment and to initiate the Attach procedure by including the ATTACH REQUEST message. The PDN CONNECTIVITY REQUEST message is piggybacked in ATTACH REQUEST. (NOTE 1)	-->	RRC: *RRCConnectionSetupComplete* NAS: ATTACH REQUEST NAS: PDN CONNECTIVITY REQUEST
5	The SS transmits an AUTHENTICATION REQUEST message to initiate the EPS authentication and AKA procedure.	<--	RRC: *DLInformationTransfer* NAS: AUTHENTICATION REQUEST
6	The UE transmits an AUTHENTICATION RESPONSE message and establishes mutual authentication.	-->	RRC: *ULInformationTransfer* NAS: AUTHENTICATION RESPONSE
7	The SS transmits a NAS SECURITY MODE COMMAND message to activate NAS security.	<--	RRC: *DLInformationTransfer* NAS: SECURITY MODE COMMAND
8	The UE transmits a NAS SECURITY MODE COMPLETE message and establishes the initial security configuration.	-->	RRC: *ULInformationTransfer* NAS: SECURITY MODE COMPLETE
-	EXCEPTION: Steps 9a1 to 9a2 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that take place if the UE has ESM information which needs to be transferred.	-	-
9a1	IF the UE sets the ESM information transfer flag in the last PDN CONNECTIVITY REQUEST message THEN the SS transmits an ESM INFORMATION REQUEST message to initiate exchange of protocol configuration options and/or APN.	<--	RRC: *DLInformationTransfer* NAS: ESM INFORMATION REQUEST
9a2	The UE transmits an ESM INFORMATION RESPONSE message to transfer protocol configuration options and/or APN.	-->	RRC: *ULInformationTransfer* NAS: ESM INFORMATION RESPONSE
10	The SS transmits a *SecurityModeCommand* message to activate AS security.	<--	RRC: *SecurityModeCommand*
11	The UE transmits a *SecurityModeComplete* message and establishes the initial security configuration.	-->	RRC: *SecurityModeComplete*
12	The SS transmits a *UECapabilityEnquiry* message to initiate the UE radio access capability transfer procedure.	<--	RRC: *UECapabilityEnquiry*
13	The UE transmits a *UECapabilityInformation* message to transfer UE radio access capability.	-->	RRC: *UECapabilityInformation*
14	The SS transmits an *RRCConnectionReconfiguration* message to establish the default bearer with condition SRB2-DRB(1, 0) according to TS 36.508 [6] clause 4.8.2.2.1.1. This message includes the ATTACH ACCEPT message. The ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message is piggybacked in ATTACH ACCEPT. (NOTE 1)	<--	RRC: *RRCConnectionReconfiguration* NAS: ATTACH ACCEPT NAS: ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST
15	The UE transmits an *RRCConnectionReconfigurationComplete* message to confirm the establishment of default bearer.	-->	RRC: RRCConnectionReconfigurationComplete
-	EXCEPTION: In parallel to the event described in steps 16 and 16A below, if initiated by the UE the generic procedure for IP address allocation in the U-plane as defined in TS 36.508 [6] clause 4.5A.1 takes place.	-	-
-	EXCEPTION: IF the UE is configured to register for MCX as first PDN during initial registration, THEN in parallel to the event described in steps 16 and 16A below the main procedure for Initial MCX Authentication, Registration, Configuration and Subscription described in Table 5.3.2.2.1-1 takes place.	-	-

St	Procedure	Message Sequence	
		U - S	**Message**
-	EXCEPTION: IF the UE is configured to register for IMS as first PDN during initial registration, THEN in parallel to the event described in steps 16 and 16A below the generic procedure for IMS signalling in the U-plane specified in TS 36.508 clause 4.5A.3 takes place if requested by the UE	-	-
16	This message includes the ATTACH COMPLETE message. The ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT message is piggybacked in ATTACH COMPLETE.	-->	RRC: ULInformationTransfer NAS: ATTACH COMPLETE NAS: ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT
-	EXCEPTION: Depending on the UE capability step 16A may be performed 0, 1 or 2 times. (NOTE 1)	-	-
16A	The E-UTRA/EPC signalling for establishment of an additional PDN connectivity according to table 5.4.2.3-1A takes place	-	-
17	The SS transmits an *RRCConnectionRelease* message.	<--	RRC: *RRCConnectionRelease*
-	EXCEPTION: IF the UE is not configured to register for MCX during initial registration, THEN steps 18 to 27 take place.	-	-
18	Make the UE user request MCPTT service authorisation/configuration.	-	-
19	The UE transmits an *RRCConnectionRequest* message.	-->	*RRCConnectionRequest*
20	SS transmit an *RRCConnectionSetup* message.	<--	RRC: *RRCConnectionSetup*
21	The UE transmits an *RRCConnectionSetupComplete* message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message.	-->	RRC: *RRCConnectionSetupComplete* NAS: SERVICE REQUEST
22	The SS transmits a *SecurityModeCommand* message to activate AS security.	<--	RRC: *SecurityModeCommand*
23	The UE transmits a *SecurityModeComplete* message and establishes the initial security configuration.	-->	RRC: *SecurityModeComplete*
24	The SS configures a new data radio bearer, associated with the default EPS bearer context. The *RRCConnectionReconfiguration* message is using condition SRB2-DRB(N, 0) with N being the number of PDN connectivities established during initial registration (steps 0 – 17). The DRBs associated with the respective default EPS bearer context obtained during the attach procedure are established	<--	RRC: *RRCConnectionReconfiguration*
25	The UE transmits an *RRCConnectionReconfigurationComplete* message to confirm the establishment of the new radio bearer, associated with the default EPS bearer context.	-->	RRC: *RRCConnectionReconfigurationComplete*
26	The E-UTRA/EPC signalling for establishment of an additional PDN connectivity according to table 5.4.2.3-1A takes place	-	-
27	The SS transmits an *RRCConnectionRelease* message.	<--	RRC: *RRCConnectionRelease*
NOTE 1: The assumptions for the PDN support of a MCPTT capable UE, including the default EPS bearer context QCI requirements in regard to the different PDN are described in 5.4.1A.			

Table 5.4.2.3-1A: E-UTRA/EPC signalling for establishment of an additional PDN connectivity

St	Procedure	Message Sequence	
		U - S	**Message**
1	The UE transmits a PDN CONNECTIVITY REQUEST message to request an additional PDN.	-->	RRC: *ULInformationTransfer* NAS: PDN CONNECTIVITY REQUEST
2	The SS configures a new data radio bearer, associated with the additional default EPS bearer context. *RRCConnectionReconfiguration* message contains the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message.	<--	RRC: *RRCConnectionReconfiguration* NAS: ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST
3	The UE transmits an *RRCConnectionReconfigurationComplete* message to confirm the establishment of additional default bearer.	-->	RRC: *RRCConnectionReconfigurationComplete*
-	EXCEPTION: In parallel to the event described in step 4 below, if initiated by the UE the generic procedure for IP address allocation in the U-plane specified in TS 36.508 clause 4.5A.1 takes place performing IP address allocation in the U-plane.	-	-
-	EXCEPTION: IF ADD_IMS THEN in parallel to the event described in step 4 below the generic procedure for IMS signalling in the U-plane specified in TS 36.508 clause 4.5A.3 takes place if requested by the UE	-	-
-	EXCEPTION: IF ADD_MCX THEN in parallel to the event described in step 4 below the main procedure for Initial MCX Authentication, Registration, Configuration and Subscription as specified in Table 5.3.2.2.1-1 takes place	-	-
4	The UE transmits an ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT message.	-->	RRC: *ULInformationTransfer* NAS: ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT

Condition	Explanation
ADD_IMS	true if PDN CONNECTIVITY REQUEST is for IMS
ADD_MCX	true if PDN CONNECTIVITY REQUEST is for MCX

Table 5.4.2.3-2: Void

5.4.2.4 Specific message contents

All specific E-UTRA/EPC signalling message contents shall be referred to TS 36.508 [6] clause 4.6 and 4.7.

Table 5.4.2.4-1..6: Void

5.4.2A MCVideo UE registration

The same as the procedure described in 5.4.2 with the following exception(s):

- The term "MCPTT" is replaced with "MCVideo".

5.4.2B MCData UE registration

The same as the procedure described in 5.4.2 with the following exception(s):

- The term "MCPTT" is replaced with "MCData", and the term "call" with "communication".

5.4.3 MCX CO communication in E-UTRA

5.4.3.1 Initial conditions

System Simulator:

- SS (MCX server)

- SS E-UTRA related parameters are set to the default parameters for the basic single cell environment, as defined in TS 36.508 [6] clause 4.4, unless otherwise specified in the test case. Requirements in regard to the PLMN which the simulated Cell(s) belongs to are specified in the test case using the present procedure.

IUT:

- UE (MCX client)

  - The test USIM set as defined in clause 5.5.10 is inserted.

  - The UE has performed MCX registration as specified in clause 5.4.2 for MCPTT, in clause 5.4.2A for MCVideo or in clause 5.4.2B for MCData and is in E-UTRA Registered, Idle Mode state with the MCX Client being active. During the attach a default EPS bearer context #3 (QCI 69) according to table 6.6.1-1, TS 36.508 [6] is established for MCX and SIP signalling.

  NOTE 1: The assumptions for the PDN support, including the default EPS bearer context QCI requirements in regard to the different PDN are described in 5.4.1A.

  - Detailed initial conditions for the UE (MCX client) shall be specified in the test case referring to the present procedure.

5.4.3.2 Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.4.3.3 Procedure

Table 5.4.3.3-1: E-UTRA/EPC signalling for MCX CO communication

St	Procedure	Message Sequence	
		U - S	**Message**
1	Void	-	-
2	The UE transmits an *RRCConnectionRequest* message with 'establishmentCause' set to 'mo-Data'.	-->	*RRCConnectionRequest*
3	SS transmit an *RRCConnectionSetup* message.	<--	RRC: *RRCConnectionSetup*
4	The UE transmits an *RRCConnectionSetupComplete* message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message.	-->	RRC: *RRCConnectionSetupComplete* NAS: SERVICE REQUEST
5	The SS transmits a *SecurityModeCommand* message to activate AS security.	<--	RRC: *SecurityModeCommand*
6	The UE transmits a *SecurityModeComplete* message and establishes the initial security configuration.	-->	RRC: *SecurityModeComplete*

St	Procedure	Message Sequence	
		U - S	**Message**
7	The SS configures a data radio bearer, associated with the default EPS bearer context. The *RRCConnectionReconfiguration* message is using condition SRB2-DRB(n, m) as specified in TS 36.508 [6] clause 4.8.2.2.1, with n=1..3 depending on the number of PDNs (see clause 5.4.1A) m=0..1 depending on the use case: IF the procedure is used for on-demand call or communication establishment, for establishment of a pre-established session or IF a pre-established session exists THEN m=1 ELSE m=0	<--	RRC: *RRCConnectionReconfiguration*
-	EXCEPTION: In parallel to the events described below, depending on the context in which the procedure is used, the MCX client may start with user plane signalling (NOTE 1).	-	-
8	The UE transmits an *RRCConnectionReconfigurationComplete* message to confirm the establishment of the new data radio bearer, associated with the default EPS bearer context.	-->	RRC: *RRCConnectionReconfigurationComplete*
9-15	Void.	-	-
-	EXCEPTION: Steps 16a1-16a3 describe behaviour that depends on the context in which the procedure is used: The steps take place if the procedure is used for on-demand call or communication establishment or establishment of a pre-established session,	-	-
16a1	The SS configures a new RLC-UM data radio bearer, associated with the dedicated EPS bearer context. The RRCConnectionReconfiguration message contains an ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST message for a dedicated EPS bearer according to TS 36.508 [6] clause 6.6.2 with - MCPTT using dedicated EPS bearer context #5 (QCI 65) - MCVideo using dedicated EPS bearer context #10 (QCI 67) - MCData using dedicated EPS bearer context #9 (QCI 70)	<--	RRC: *RRCConnectionReconfiguration* NAS: ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST
16a2	The UE transmits an *RRCConnectionReconfigurationComplete* message to confirm the establishment of the data radio bearer associated with the default EPS.	-->	RRC: *RRCConnectionReconfigurationComplete*
16a3	The UE transmits an ACTIVATE DEDICATED EPS BEARER CONTEXT ACCEPT message.	-->	RRC: ULInformationTransfer NAS:ACTIVATE DEDICATED EPS BEARER CONTEXT ACCEPT
NOTE 1: User plane signalling can be SIP or HTTP signalling.			

Table 5.4.3.3-2: Void

5.4.3.4 Specific message contents

All specific E-UTRA/EPC signalling message contents shall be referred to TS 36.508 [6] clauses 4.6 and 4.7.

5.4.3A   Void

5.4.3B   Void

5.4.4   MCX CT communication in E-UTRA

5.4.4.1   Initial conditions

System Simulator:

- SS (MCX server)

- E-UTRA related parameters are set to the default parameters for the basic single cell environment, as defined in TS 36.508 [6] clause 4.4, unless otherwise specified in the test case. Requirements in regard to the PLMN which the simulated Cell(s) belongs to are specified in the test case using the present procedure.

IUT:

- UE (MCX client):

    - The test USIM set as defined in clause 5.5.10 is inserted.

    - The UE has performed MCX registration as specified in clause 5.4.2 for MCPTT, in clause 5.4.2A for MCVideo or in clause 5.4.2B for MCData and is in E-UTRA Registered, Idle Mode state with the MCX Client being active. During the attach a default EPS bearer context #3 (QCI 69) according to table 6.6.1-1, TS 36.508 [6] is established for MCX and SIP signalling.

    NOTE 1:   The assumptions for the PDN support , including the default EPS bearer context QCI requirements in regard to the different PDN are described in 5.4.1A.

    - Detailed initial conditions for the UE (MCX client) shall be specified in the test case referring to the present procedure.

5.4.4.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.4.4.3   Procedure

Table 5.4.4.3-1: E-UTRA/EPC signalling for MCX CT communication

St	Procedure	Message Sequence	
		U - S	**Message**
1	SS sends a *Paging* message on the appropriate paging block, and including the UE identity in one entry of the IE *pagingRecordLists*.	<--	RRC: *Paging* (PCCH)
2	The UE transmits an *RRCConnectionRequest* message with 'establishmentCause' set to 'mt-Access'.	-->	*RRCConnectionRequest*
3	SS transmit an *RRCConnectionSetup* message.	<--	RRC: *RRCConnectionSetup*
4	The UE transmits an *RRCConnectionSetupComplete* message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message.	-->	RRC: *RRCConnectionSetupComplete* NAS: SERVICE REQUEST
5	The SS transmits a *SecurityModeCommand* message to activate AS security.	<--	RRC: *SecurityModeCommand*
6	The UE transmits a *SecurityModeComplete* message and establishes the initial security configuration.	-->	RRC: *SecurityModeComplete*

St	Procedure	Message Sequence	
		U - S	**Message**
7	The SS configures a data radio bearer, associated with the default EPS bearer context. The *RRCConnectionReconfiguration* message is using condition SRB2-DRB(n, m) as specified in TS 36.508 [6] clause 4.8.2.2.1, with n=1..3 depending on the number of PDNs (see clause 5.4.1A) m=0..1 depending on the use case: IF the procedure is used for call or communication establishment or IF a pre-established session exists THEN m=1 ELSE m=0	<--	RRC: *RRCConnectionReconfiguration*
8	The UE transmits an *RRCConnectionReconfigurationComplete* message to confirm the establishment of the new data radio bearer, associated with the default EPS bearer context.	-->	RRC: *RRCConnectionReconfigurationComplete*
9-16	Void.	-	-
-	EXCEPTION: Steps 17a1-17a3 describe behaviour that depends on the context in which the procedure is used: The steps take place if the procedure is used for on-demand call or communication establishment,	-	-
-	EXCEPTION: In parallel to the events described below there is SIP signalling for the on-demand call or communication establishment.	-	-
17a1	The SS configures a new RLC-UM data radio bearer, associated with the dedicated EPS bearer context. The RRCConnectionReconfiguration message contains an ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST message for a dedicated EPS bearer according to TS 36.508 [6] clause 6.6.2 with - MCPTT using dedicated EPS bearer context #5 (QCI 65) - MCVideo using dedicated EPS bearer context #10 (QCI 67) - MCData using dedicated EPS bearer context #9 (QCI 70)	<--	RRC: *RRCConnectionReconfiguration* NAS: ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST
17a2	The UE transmits an *RRCConnectionReconfigurationComplete* message to confirm the establishment of the data radio bearer associated with the default EPS.	-->	RRC: *RRCConnectionReconfigurationComplete*
17a3	The UE transmits an ACTIVATE DEDICATED EPS BEARER CONTEXT ACCEPT message.	-->	RRC: ULInformationTransfer NAS:ACTIVATE DEDICATED EPS BEARER CONTEXT ACCEPT

Table 5.4.4.3-2: Void

5.4.4.4 Specific message contents

All specific E-UTRA/EPC signalling message contents shall be referred to TS 36.508 [6] clause 4.6 and 4.7.

5.4.4A   Void

5.4.4B   Void

5.4.5   MCX CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment

5.4.5.1   Initial conditions

System Simulator:

- SS-UE1 (MCX client).

   - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [6], configured for and operating as ProSe Direct Communication transmitting and receiving device.

- GNSS simulator configured to simulate a location in the centre of Geographical area #1 and providing timing reference as defined in TS 36.508 [6] Table 4.11.2-2 scenario #1, for the assistance of E-UTRAN off-network testing.

   NOTE: For operation in off-network environment, it needs to be ensured that after the UE is powered up it considers the Geographical area #1 as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

IUT:

- UE (MCX client):

   - The test USIM set as defined in clause 5.5.10 is inserted.

   - Detailed initial conditions for the UE (MCX client) shall be specified in the TC referring to the present procedure.

- UE state:

   - The UE is in state Switched OFF (state 1) according to TS 36.508 [6].

5.4.5.2   Definition of system information messages

N/a (out of E-UTRA coverage)

5.4.5.3 Procedure

Table 5.4.5.3-1: ProSe direct communication one-to-one out of E-UTRA coverage signalling for MCX CO communication-establishment

St	Procedure	Message Sequence	
		U - S	**Message**
1	Power up the UE.	-	-
2	Wait for 15 sec to allow the UE to establish that it is out of coverage and initiate scanning the frequency pre-set for ProSe communication for any activities.	-	-
3	Make the UE initiate one-to-one ProSe direct communication with the remote UE preconfigured (ProSe Layer-2 Group ID).	-	-
4	UE sends a DIRECT_COMMUNICATION_REQUEST message, IP Address Config IE set to "address allocation not supported".	-->	DIRECT_COMMUNICATION_REQUEST
5	SS-UE1 sends a DIRECT_SECURITY_MODE_COMMAND message.	<--	DIRECT_SECURITY_MODE_COMMAND
6	UE sends a DIRECT_SECURITY_MODE_COMPLETE message ciphered and integrity protected with the new security context.	-->	DIRECT_SECURITY_MODE_COMPLETE
7	SS-UE1 sends a DIRECT_COMMUNICATION_ACCEPT message.	<--	DIRECT_COMMUNICATION_ACCEPT
8	EXCEPTION: After the communication is established, an IP address configuration procedure is performed depending on what the UE has indicated in the IP Address Config IE (if it is not "address allocation not supported") in the DIRECT_COMMUNICATION_REQUEST message, and, the SS-UE1 itself indicating "address allocation not supported" in the DIRECT_COMMUNICATION_ACCEPT message.	-	-
-	EXCEPTION: Steps 9a1 to 9a2 describe behaviour that depends on UE implementation; the "lower case letter" identifies a step sequence that depends on the UE implementation of keepalive procedure.	-	-
9a1	UE sends a DIRECT_COMMUNICATION_KEEPALIVE message.	-->	DIRECT_COMMUNICATION_KEEPALIVE
9a2	SS-UE1 sends a DIRECT_COMMUNICATION_KEEPALIVE_ACK message.	<--	DIRECT_COMMUNICATION_KEEPALIVE_ACK

5.4.5.4 Specific message contents

Table 5.4.5.4-1: DIRECT_COMMUNICATION_ACCEPT (step 7 Table 5.4.5.3-1)

Derivation path: 36.508 [6], Table 4.7F.3-6			
Information Element	**Value/remark**	**Comment**	**Condition**
IP Address Config	'0011'B	address allocation not supported	
Link Local IPv6 Address	If the UE indicated 'address allocation not supported' in the IP Address Config IE in the DIRECT_COMMUNICATION_REQUEST message then a link-local IPv6 address formed locally	128-bit IPv6 address	

Table 5.4.5.4-2: DIRECT_SECURITY_MODE_COMMAND (step 5, Table 5.4.5.3-1)

Derivation path: 36.508 [6], Table 4.7F.3-7			
Information Element	**Value/remark**	**Comment**	**Condition**
UE Security Capabilities	Set to the UE Security Capabilities received in the DIRECT_COMMUNICATION_REQUEST message		
Chosen Algorithms	One of the non-null algorithms provided in UE Security Capabilities (i.e. different to EIA0 (null integrity protection algorithm)/EEA0 (null ciphering algorithm))		
MSB of K$_D$ ID	The MSB of KD ID of the new KD		
K$_D$ Freshness	Not included		
GPI	Not included		
User Info {			
Type of User Info	IMSI		
Odd/even indication	Reflecting the number of digits in the IMSI		
Identity digits	A value different to the IMSI of the UE		
}			

Table 5.4.5.4-3: DIRECT_SECURITY_MODE_COMPLETE (step 6, Table 5.4.5.3-1)

Derivation path: 36.508 [6], Table 4.7F.3-8			
Information Element	**Value/remark**	**Comment**	**Condition**
LSB of KD ID	Not included		

Table 5.4.5.4-4: DIRECT_COMMUNICATION_KEEPALIVE (step 9a1, Table 5.4.5.3-1)

Derivation path: 36.508 [6], Table 4.7F.3-9			
Information Element	**Value/remark**	**Comment**	**Condition**
Keepalive Counter	0		
Maximum Inactivity Period	Any allowed value		

5.4.6 MCX CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment

5.4.6.1 Initial conditions

System Simulator:

- SS-UE1 (MCX client).

  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [6], configured for and operating as ProSe Direct Communication transmitting and receiving device.

- GNSS simulator configured to simulate a location in the centre of Geographical area #1 and providing timing reference as defined in TS 36.508 [6] Table 4.11.2-2 scenario #1,for the assistance of E-UTRAN off-network testing.

NOTE: For operation in off-network environment, it needs to be ensured that after the UE is powered up it considers the Geographical area #1 as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

IUT:

- UE (MCX client)

    - The test USIM set as defined in clause 5.5.10 is inserted.

    - Detailed initial conditions for the UE (MCX client) shall be specified in the TC referring to the present procedure.

UE state:

- The UE is in state Switched OFF (state 1) according to TS 36.508 [6].

5.4.6.2 Definition of system information messages

N/a (out of E-UTRA coverage).

5.4.6.3 Procedure

Table 5.4.6.3-1: ProSe direct communication one-to-one out of E-UTRA coverage signalling for MCX CT communication-establishment

St	Procedure	Message Sequence	
		U - S	Message
1	Power up the UE.	-	-
2	Wait for 15 sec to allow the UE to establish that it is out of coverage and initiate scanning the frequency pre-set for ProSe communication for any activities.	-	-
3	SS-UE1 sends a DIRECT_COMMUNICATION_REQUEST message, IP Address Config IE set to "address allocation not supported".	<--	DIRECT_COMMUNICATION_REQUEST
4	UE sends a DIRECT_SECURITY_MODE_COMMAND message uncyphered but integrity protected with the new security context.	-->	DIRECT_SECURITY_MODE_COMMAND
5	SS-UE1 sends a DIRECT_SECURITY_MODE_COMPLETE message ciphered and integrity protected with the new security context.	<--	DIRECT_SECURITY_MODE_COMPLETE
6	UE sends a DIRECT_COMMUNICATION_ACCEPT message.	-->	DIRECT_COMMUNICATION_ACCEPT
7	EXCEPTION: After the communication is established, an IP address configuration procedure is performed depending on what the UE has indicated in the IP Address Config IE (if it is not "address allocation not supported") in the DIRECT_COMMUNICATION_REQUEST message, and, the SS-UE1 itself indicating "address allocation not supported" in the DIRECT_COMMUNICATION_ACCEPT message.	-	-
8	SS-UE1 sends a DIRECT_COMMUNICATION_KEEPALIVE message with a Keepalive Counter IE that contains the value of the keepalive counter for this link=0, and a Maximum Inactivity Period IE.	<--	DIRECT_COMMUNICATION_KEEPALIVE
9	UE sends a DIRECT_COMMUNICATION_KEEPALIVE_ACK message including the Keepalive Counter IE set to the same value as that received in the DIRECT_COMMUNICATION_KEEPALIVE message.	-->	DIRECT_COMMUNICATION_KEEPALIVE_ACK

5.4.6.4 Specific message contents

Table 5.4.6.4-1: DIRECT_COMMUNICATION_REQUEST (step 3, Table 5.4.6.3-1)

Derivation path: 36.508 [6], Table 4.7F.3-5			
Information Element	**Value/remark**	**Comment**	**Condition**
User Info {			
Type of User Info	IMSI		
Odd/even indication	Reflecting the number of digits in the IMSI		
Identity digits	A value different to the IMSI of the UE		
}			
IP Address Config	'0011'B	address allocation not supported	
Maximum Inactivity Period	'10 0000 0000'B	512 sec, randomly chosen to allow sufficient time for a TC which uses this procedure to be completed without need to repeat the keepalive procedure	
Nonce_1			
UE Security Capabilities	01111111 01111111	All but null algorithms supported	
MSB of K_{D-sess} ID	the 8 most significant bits of the KD-sess ID		
K_D ID	Not present		
Signature	the ECCSI signature calculated with the User Info and Nonce_1 as specified in 3GPP TS 33.303 [67]		
Link Local IPv6 Address	a link-local IPv6 address formed locally		

Table 5.4.6.4-2: DIRECT_SECURITY_MODE_COMMAND (step 4 Table 5.4.6.3-1)

Derivation path: 36.508 [6], Table 4.7F.3-7			
Information Element	**Value/remark**	**Comment**	**Condition**
MSB of K_D ID	Any allowed value		
K_D Freshness	Not included		
GPI	Not included		
Signature	The ECCSI signature calculated with the User Info and Nonce_1 as specified in 3GPP TS 33.303 [67]		
Encrypted Payload	The SAKKE payload generated as specified in 3GPP TS 33.303 [67].		

Table 5.4.6.4-3: DIRECT_SECURITY_MODE_COMPLETE (step 5, Table 5.4.6.3-1)

Derivation path: 36.508 [6], Table 4.7F.3-8			
Information Element	**Value/remark**	**Comment**	**Condition**
LSB of KD ID	16 least significant bits of KD ID		

Table 5.4.6.4-4: DIRECT_COMMUNICATION_KEEPALIVE (step 8, Table 5.4.6.3-1)

Derivation path: 36.508 [6], Table 4.7F.3-9			
Information Element	**Value/remark**	**Comment**	**Condition**
Keepalive Counter	0		
Maximum Inactivity Period	'10 0000 0000'B	512 sec, randomly chosen to allow sufficient time for a TC which uses this procedure to be completed without need to repeat the keepalive procedure	

5.4.7 MCX communication over ProSe direct one-to-one communication out of E-UTRA coverage - release by the SS

5.4.7.1 Initial conditions

System Simulator:

- SS-UE1 (MCX client).

    - Same as those defined in the 'MCX CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.5, or, the 'MCX CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.6.

IUT:

- UE (MCX client)

    ProSe related configuration

    - Same as those defined in the 'MCX CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.5, or, the 'MCX CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.6.

UE state

    - The UE has established ProSe direct communication one-to-one out of E-UTRA coverage using the 'MCX CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.5, or, the 'MCX CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.6.

5.4.7.2 Definition of system information messages

N/a (out of E-UTRA coverage).

5.4.7.3 Procedure

Table 5.4.7.3-1: ProSe direct communication one-to-one out of E-UTRA coverage signalling for MCX communication - release by the SS

St	Procedure	Message Sequence	
		U - S	**Message**
1	SS-UE1 sends a DIRECT_COMMUNICATION_RELEASE message with a Release Reason IE indicating 'Direct Communication to peer UE no longer needed'.	<--	DIRECT_COMMUNICATION_RELEASE
2	UE sends a DIRECT_COMMUNICATION_RELEASE_ACCEPT message.	-->	DIRECT_COMMUNICATION_RELEASE _ACCEPT

5.4.7.4 Specific message contents

Table 5.4.7.4-1: DIRECT_COMMUNICATION_RELEASE (step 1, Table 5.4.7.3-1)

Derivation path: 36.508 [6], Table 4.7F.3-11			
Information Element	**Value/remark**	**Comment**	**Condition**
Release Reason	'0001'B	Direct communication to the peer UE no longer needed	

5.4.8 MCX communication over ProSe direct one-to-one communication out of E-UTRA coverage - release by the UE

5.4.8.1 Initial conditions

System Simulator:

- SS-UE1 (MCX client).

    - Same as those defined in the 'MCX CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.5, or, the 'MCX CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.6.

IUT:

- UE (MCX client)

    ProSe related configuration

    - Same as those defined in the 'MCX CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.5, or, the 'MCX CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.6.

UE state

- The UE has established ProSe direct communication one-to-one out of E-UTRA coverage using the 'MCX CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.5, or, the 'MCX CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.6.

5.4.8.2 Definition of system information messages

N/a (out of E-UTRA coverage).

5.4.8.3   Procedure

Table 5.4.8.3-1: ProSe direct communication one-to-one out of E-UTRA coverage signalling for MCX communication - release by the UE

St	Procedure	Message Sequence	
		U - S	**Message**
1	UE sends a DIRECT_COMMUNICATION_RELEASE message with a Release Reason IE indicating 'Direct Communication to peer UE no longer needed'.	-->	DIRECT_COMMUNICATION_RELEASE
2	SS-UE1 sends a DIRECT_COMMUNICATION_RELEASE_ACCEPT message.	<--	DIRECT_COMMUNICATION_RELEASE_ACCEPT

5.4.8.4   Specific message contents

Table 5.4.8.4-1: DIRECT_COMMUNICATION_RELEASE (step 1, Table 5.4.8.3-1)

Derivation path: 36.508 [6], Table 4.7F.3-11			
Information Element	**Value/remark**	**Comment**	**Condition**
Release Reason	'0001'B	Direct communication to the peer UE no longer needed	

5.4.9   MCX communication in E-UTRA / Change of cells

5.4.9.1   Initial conditions

System Simulator:

- SS (MCX server)

- SS E-UTRA

  - Parameters are set to the default parameters for the basic E-UTRA single mode multi cell network scenarios, as defined in TS 36.508 [6] clause 4.4, unless otherwise specified in the test case.

  - 3 cells (Cell 1, Cell 2 and Cell 4, all operating on the same frequency). Cells 1 and 2 are on the same PLMN1, whereas Cell 4 is on a different PLMN2.

NOTE: The procedure only requires at maximum 2 cells to be active at any one instance.

IUT:

- UE (MCX client)

  - The UE is allowed to operate on both PLMN1 and PLMN2. PLMN1 is set as HPLMN and PLMN2 is set as VPLMN in Table 5.5.8.1-1 (MCX Initial UE Configuration Defaults).

NOTE 1: The assumptions for the PDN support of a MCX capable UE, including the default EPS bearer context QCI requirements in regard to the different PDN are described in 5.4.1A.

  - Detailed initial conditions for the UE (MCX client) shall be specified in the TC referring to the present procedure.

5.4.9.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used.

5.4.9.3   Procedure

Table 5.4.9.3-1 illustrates the downlink power levels and other changing parameters to be applied for the cells at various time instants of the test execution. Row marked "T0" denotes the initial conditions after preamble, while columns marked "T1" ... "Tn" are to be applied subsequently. The exact instants on which these values shall be applied are described elsewhere in the present clause.

Table 5.4.9.3-1: Time instances of cell power level and parameter changes

	Parameter	Unit	Cell 1	Cell 2	Cell 4
T0	Cell-specific RS EPRE	dBm/15kHz	-79	"Off"	"Off"
T1	Cell-specific RS EPRE	dBm/15kHz	"Off"	-79	"Off"
T2	Cell-specific RS EPRE	dBm/15kHz	"Off"	"Off"	-79

Table 5.4.9.3-2: E-UTRA/EPC signalling for UE changing cells

St	Procedure	Message Sequence	
		U - S	Message
1	The SS configures: Cell 1 and Cell 2 parameters according to the row "T1" in table 5.4.9.3-1 in order to simulate needs for cell reselection to Cell2.	-	-
2	Wait for 5 sec to allow the UE to adjust to cell changes. NOTE 1.	-	-
3	The SS configures: Cell 2 and Cell 4 parameters according to the row "T2" in table 5.4.9.3-1 in order to simulate needs for cell reselection to Cell4.	-	-
4	The Generic test procedure for 'Tracking area updating procedure' defined in TS 36.508 [6] clause 4.5A.2 takes place. NOTE 2.	-	-
NOTE 1: Depending on implementation the UE may start transmitting MCX protocol relevant data earlier. What may be transmitted is specified in the TCs.			
NOTE 2: The UE may start transmitting MCX protocol relevant data as soon as it receives TRACKING AREA UPDATE ACCEPT message. If this happens the SS shall not execute step 7 of the Generic test procedure for 'Tracking area updating procedure' and shall continue with the rest of the messages exchange defined in the test case.			

5.4.9.4   Specific message contents

None

5.4.10   MCX CT communication over ProSe direct one-to-many communication out of E-UTRA coverage / Announcing/Discoveree procedure for group member discovery

5.4.10.1   Initial conditions

System Simulator:

-   SS-UE1 (MCX client).

    -   For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [6], configured for and operating as ProSe Direct Communication transmitting and receiving device.

- GNSS simulator configured to simulate a location in the centre of Geographical area #1 and providing timing reference as defined in TS 36.508 [6] Table 4.11.2-2 scenario #1, for the assistance of E-UTRAN off-network testing.

NOTE: For operation in off-network environment, it needs to be ensured that after the UE is powered up it considers the Geographical area #1 as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

IUT:

- UE (MCX client)

  - The test USIM set as defined in clause 5.5.10 is inserted.

  - Detailed initial conditions for the UE (MCX client) shall be specified in the TC referring to the present procedure.

UE state:

- The UE is in state Switched OFF (state 1) according to TS 36.508 [6].

5.4.10.2 Definition of system information messages

N/a (out of E-UTRA coverage)

5.4.10.3   Procedure

Table 5.4.10.3-1: ProSe Direct Discovery for public safety use / Announcing/Discoveree procedure for group member discovery for MCX off-network CT group calls

St	Procedure	Message Sequence	
		U - S	Message
1	Power up the UE.	-	-
2	Wait for 60 sec to allow the UE to determine that it is in the Geographical area #1 set in the USIM for operation when UE is "not served by E-UTRAN and acquire reference timing.	-	-
-	EXCEPTION: Steps 3a1-3b3b1 describe events which depend on the UE capabilities; the "lower case letter" identifies a step sequence that takes place if the UE is capable or not of Announcing for group member discovery.	-	-
3a1	IF pc_ProSeAnnForGroupMemberDiscovery (TS 36.523-2 [75]) THEN Force the UE upper layer application corresponding to ProSe Application ID px_ProSeAnnApplicationIdentity2 (TS 36.523-3 [74]) to initiate continuous announcing its availability in a discovery group. NOTE 1.	-	-
3a2	The UE transmits in the next transmission period a PC5_DISCOVERY message for Group Member Discovery Announcement applying DUIK, DUSK, and DUCK with the associated Encrypted Bitmask, along with the UTC-based counter to the PC5_DISCOVERY message.	-->	PC5_DISCOVERY
3b1	ELSE SS sets WaitForMessageCounter=1	-	-
-	EXCEPTION: Steps 3b2-3b3b1 are repeated until the event described in step 3b3a1 takes place OR WaitForMessageCounter=11.	-	-
3b2	SS-UE1 transmits in the next transmission period a PC5_DISCOVERY message for Group Member Discovery Solicitation applying DUIK, DUSK, and DUCK with the associated Encrypted Bitmask, along with the UTC-based counter to the PC5_DISCOVERY message. WaitForMessageCounter=WaitForMessageCounter+1	<--	PC5_DISCOVERY
-	EXCEPTION: Steps 3b3a1-3b3b1 describe events which depend on the UE behaviour; the "lower case letter" identifies a step sequence that take place if the UE transmit or not in the next transmission period a PC5_DISCOVERY message.	-	-
3b3a1	The UE transmits in the next transmission period a PC5_DISCOVERY message for Group Member Discovery Response applying DUIK, DUSK, and DUCK with the associated Encrypted Bitmask, along with the UTC-based counter to the PC5_DISCOVERY message and including the target Discovery Group ID of the discovery group to be discovered in step 3b2.	-->	PC5_DISCOVERY
3b3b1	The WaitForMessageCounter=11.	-	-
-	EXCEPTION: Steps 4 and 5 may be repeated multiple times depending on the MCX procedure taking place.	-	-
-	EXCEPTION: Step 4 is repeated until the MCX protocol data unit provided by the higher layers is transmitted in full. NOTE 2.	-	-
4	SS-UE1 sends sidelink communication over the PC5 interface in the next transmission period using the timing reference provided by the GNSS simulator (same to be used by the UE). NOTE 3.	<--	*STCH PDCP SDU packet*
-	EXCEPTION: Step 5 is repeated until the MCX protocol data unit provided by the higher layers is transmitted in full. NOTE 4.	-	-
5	The UE sends sidelink communication over the PC5 interface in the next transmission period using the timing reference provided by the GNSS simulator (same to be used by the SS-UE1). NOTE 3.	-->	*STCH PDCP SDU packet*
NOTE 1: UEs which are capable of Announcing for group member discovery may start announcement automatically. NOTE 2: The SS-UE1 may need to send more than one MCX protocol data unit in sequence with no response expected between them from the UE. NOTE 3: What MCX protocol data units are included in the sidelink communication is defined in the test case using the present procedure. NOTE 4: The UE may need to send more than one MCX protocol data unit in sequence with no response expected between them from the SS-UE1.			

5.4.10.4 Specific message contents

Table 5.4.10.4-1: PC5_DISCOVERY (step 3a2 Table 5.4.10.3-1)

Derivation path: 36.508 [6], Table 4.7F.1-5A

Table 5.4.10.4-2: PC5_DISCOVERY (step 3b2 Table 5.4.10.3-1)

Derivation path: 36.508 [6], Table 4.7F.1-5B

Table 5.4.10.4-3: PC5_DISCOVERY (step 3b3a1 Table 5.4.10.3-1)

Derivation path: 36.508 [6], Table 4.7F.1-5C

5.4.11 MCX 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

5.4.11.1 Initial conditions

System Simulator:

- SS-UE1 (MCX client).

    - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [6], configured for and operating as ProSe Direct Communication transmitting and receiving device.

- GNSS simulator configured to simulate a location in the centre of Geographical area #1 and providing timing reference as defined in TS 36.508 [6] Table 4.11.2-2 scenario #1, for the assistance of E-UTRAN off-network testing.

    NOTE: For operation in off-network environment, it needs to be ensured that after the UE is powered up it considers the Geographical area #1 as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

IUT:

- UE (MCX client)

    - The test USIM set as defined in clause 5.5.10 is inserted.

    - Detailed initial conditions for the UE (MCX client) shall be specified in the TC referring to the present procedure.

UE state:

- The UE is in state Switched OFF (state 1) according to TS 36.508 [6].

5.4.11.2 Definition of system information messages

N/a (out of E-UTRA coverage)

5.4.11.3 Procedure

Table 5.4.11.3-1: ProSe Direct Discovery for public safety use / Monitoring/Discoverer procedure for group member discovery for MCX off-network CO group calls

St	Procedure	U - S	Message
1	Power up the UE.	-	-
2	Wait for 60 sec to allow the UE to determine that it is in the Geographical area #1 set in the USIM for operation when UE is "not served by E-UTRAN and acquire reference timing.	-	-
-	EXCEPTION: Steps 3a1-3b3 describe events which depend on the UE capabilities; the "lower case letter" identifies a step sequence that takes place if the UE is capable or not of Monitoring for group member discovery.	-	-
3a1	IF pc_ProSeMonForGtoupMemberDiscovery (TS 36.523-2 [75]) THEN the SS-UE1 starts continuously transmitting in the relevant transmission periods a PC5_DISCOVERY message for Group Member Discovery Announcement applying DUIK, DUSK, and DUCK with the associated Encrypted Bitmask, along with the UTC-based counter to the PC5_DISCOVERY message.	<--	PC5_DISCOVERY
3b1	ELSE Force the UE upper layer application corresponding to ProSe Application ID px_ProSeAnnApplicationIdentity2 (TS 36.523-3 [74]) to solicit proximity of other UEs in a discovery group. NOTE 1.	-	-
3b2	The UE transmits in the next transmission period a PC5_DISCOVERY message for Group Member Discovery Solicitation applying DUIK, DUSK, and DUCK with the associated Encrypted Bitmask, along with the UTC-based counter to the PC5_DISCOVERY message.	-->	PC5_DISCOVERY
3b3	SS-UE1 transmits a PC5_DISCOVERY message for Group Member Discovery Response applying DUIK, DUSK, and DUCK with the associated Encrypted Bitmask, along with the UTC-based counter to the PC5_DISCOVERY message and including the target Discovery Group ID of the discovery group to be discovered in step 2b2.	<--	PC5_DISCOVERY
-	EXCEPTION: Steps 4 and 5 may be repeated multiple times depending on the MCX procedure taking place.	-	-
-	EXCEPTION: Step 4 is repeated until the MCX protocol data unit provided by the higher layers is transmitted in full. NOTE 2.	-	-
4	The UE sends sidelink communication over the PC5 interface in the next transmission period using the timing reference provided by the GNSS simulator (same to be used by the SS-UE1). NOTE 3.	-->	*STCH PDCP SDU packet*
-	EXCEPTION: Step 5 is repeated until the MCX protocol data unit provided by the higher layers is transmitted in full. NOTE 4.	-	-
5	SS-UE1 sends sidelink communication over the PC5 interface in the next transmission period using the timing reference provided by the GNSS simulator (same to be used by the UE). NOTE 3.	<--	*STCH PDCP SDU packet*

St	Procedure	Message Sequence	
		U - S	**Message**
NOTE 1:	UEs which are not capable of Monitoring for group member discovery may start Discoverer procedure automatically.		
NOTE 2:	The UE may need to send more than one MCX protocol data unit in sequence with no response expected between them from the SS-UE1.		
NOTE 3:	Which MCX protocol data units are included in the sidelink communication is defined in the test case using the present procedure.		
NOTE 4:	The SS-UE1 may need to send more than one MCX protocol data unit in sequence with no response expected between them from the UE.		

5.4.11.4   Specific message contents

Table 5.4.11.4-1: PC5_DISCOVERY (step 3a1 Table 5.4.11.3-1)

Derivation path: 36.508 [6], Table 4.7F.1-5A

Table 5.4.11.4-2: PC5_DISCOVERY (step 3b2 Table 5.4.11.3-1)

Derivation path: 36.508 [6], Table 4.7F.1-5B

Table 5.4.11.4-3: PC5_DISCOVERY (step 3b3 Table 5.4.11.3-1)

Derivation path: 36.508 [6], Table 4.7F.1-5C

5.4.12   MCX communication over MBMS

5.4.12.1   Initial conditions

System Simulator:

- SS (MCX server)

- SS E-UTRA

   - E-UTRA related parameters are set to the default parameters for the basic single cell environment, as defined in TS 36.508 [6] clause 4.4, unless otherwise specified in the test case.

   - MBSFNAreaConfiguration as defined in TS 36.508[6] table 4.6.1-4A is transmitted on MCCH

IUT:

- UE (MCX client):

   - E-UTRAN UE supporting MBMS services. The UE has performed MCX registration as specified in clause 5.4.2 for MCPTT, in clause 5.4.2A for MCVideo or in clause 5.4.2B for MCData and is in E-UTRA Registered, Idle Mode state. The UE is made interested in receiving MBMS service in the PLMN of Cell 1 with MBMS Service ID 0.

   - Detailed initial conditions for the UE (MCX client) shall be specified in the TC referring to the present procedure.

5.4.12.2   Definition of system information messages

The E-UTRA default system information messages as defined in TS 36.508 [6] are used. System information combination 15 as defined in TS 36.508[6] clause 4.4.3.1 is used in the E-UTRA cell.

5.4.12.3   Procedure

Table 5.4.12.3-1: MCX communication over MBMS

St	Procedure	Message Sequence	
		U - S	**Message**
1	SS transmits *MBSFNAreaConfiguration* message	<--	*MBSFNAreaConfiguration*
2	Wait for a period equal to the MCCH modification period for the UE to receive *MBSFNAreaConfiguration* message.	-	-
-	EXCEPTION: Step 3 is repeated continuously to carry the relevant MCX protocol data units provided by the higher layers.	-	-
3	The SS transmits 1 MBMS Packet on the MTCH in the next MCH Scheduling Period. NOTE: Which MCX protocol data units are sent and at which time is defined in the test case using the present procedure.	<--	MBMS Packet

5.4.12.4   Specific message contents

None

5.4.13   Void

5.5   Default message and other information elements content

5.5.1   General

The following conditions apply throughout clause 5.5:

Table 5.5.1-1: Conditions

Condition	Explanation

ON-NETWORK	Message/IE sent only in on-network scenario.
OFF-NETWORK	Message/IE sent only in off-network scenario.
PRIVATE-CALL	Message/IE sent only as part of a Private call handling.
GROUP-CALL	Message/IE sent only as part of a Group call handling.
BROADCAST-CALL	Message/IE sent only as part of a Broadcast group call handling.
EMERGENCY-CALL	Message/IE sent only as part of an Emergency call handling.
IMMPERIL-CALL	Message/IE sent only as part of an Immanent Peril call handling.
CHAT-GROUP-CALL	Message/IE sent only as part of a Chat group call scenario.
AMBIENT-LISTENING	Message/IE sent only as part of an ambient listening call
FIRST-TO-ANSWER	Message/IE sent only as part of a first-to-answer call
CONFIG	Message/IE sent only in configuration/authentication/authorisation scenario.
GROUPCONFIG	Message/IE sent only in group configuration scenario.
GROUPKEY	Message/IE sent only in group key material retrieval scenario.
SERVICE_AUTH	Message/IE for service authorisation
PRESENCE-EVENT	Message/IE for presence even package
POC-SETTINGS-EVENT	Message/IE for poc-settings even package
AFFILIATION	Message/IE for affiliation
LOCATION-INFO	Message containing location info
UDP	UE uses UDP for sending a request (this implies UDP to be used for a corresponding response)
TCP	UE uses TCP for sending a request (this implies TCP to be used for a corresponding response)
MO_CALL	Call (dialog) has been initiated by the UE (mobile originated call)
MT_CALL	Call (dialog) has been initiated by the SS (mobile terminated call)
MCPTT	MCPTT specific message content
MCVIDEO	MCVideo specific message content
MCDATA	MCData specific message content

5.5.2 Default SIP message and other information elements

5.5.2.1 SIP ACK

5.5.2.1.1 SIP ACK from the UE

Table 5.5.2.1.1-1: SIP ACK from the UE

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.229 [16], clause A.2.1.4.2, A.2.2.4.2				
Request-Line			RFC 3261 [22]	
Method	"ACK"			
Request-URI	same URI as the SS has sent earlier in the Contact header of a response within the same dialog			
SIP-Version	"SIP/2.0"			
Via			RFC 3261 [22]	
sent-protocol	"SIP/2.0/UDP"			UDP
	"SIP/2.0/TCP"			TCP
sent-by	Same value as in INVITE message			
via-branch	Value starting with 'z9hG4bK'			
Route			RFC 3261 [22]	
route-param list	URIs of the Record-Route header sent to the UE in the response which has established the dialog, in reverse order			
From			RFC 3261 [22]	
addr-spec	same value as in the INVITE message	Local URI of the dialog (from the UE's point of view)		
tag	same value as in the INVITE	Local tag of the dialog ID (from the UE's point of view)		
To			RFC 3261 [22]	
addr-spec	same value as in the INVITE	Remote URI of the dialog (from the UE's point of view)		
tag	same tag as in the To-header of the response which has established the dialog	Remote tag of the dialog ID (from the UE's point of view)		
Call-ID			RFC 3261 [22]	
callid	same value as in INVITE message			
Cseq			RFC 3261 [22]	
value	same value as in INVITE message			
method	"ACK"			
Max-Forwards			RFC 3261 [22]	
value	any allowed value	Non-zero value		
Content-Length	if present		RFC 3261 [22]	
value	"0"	No message body included		

5.5.2.1.2   SIP ACK from the SS

Table 5.5.2.1.2-1: SIP ACK from the SS

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.229 [16], clause A.2.1.4.2, A.2.2.4.2				
Request-Line			RFC 3261 [22]	
Method	"ACK"			
Request-URI	same URI as the UE has sent earlier in the Contact header of a response within the same dialog	Contact URI of the UE ("callee")		
	same value as in the INVITE			NON-2XX
SIP-Version	"SIP/2.0"			
Via	same as in the INVITE but with updated via-branches in case of an ACK for 2xx response	see Table 5.5.2.5.2-1	RFC 3261 [22]	
	same as in the INVITE (with the same via-branches)			NON-2XX
Route	not present		RFC 3261 [22]	
From			RFC 3261 [22]	
addr-spec	same URI as in the From-header of the INVITE	remote URI of the dialog (from the UE's point of view)		
tag	same tag as in the From-header of the INVITE	remote tag of the dialog (from the UE's point of view)		
To			RFC 3261 [22]	
addr-spec	same URI as in the To-header of the INVITE	local URI of the dialog (from the UE's point of view)		
tag	same tag as in the To-header of the response which has established the dialog	local tag of the dialog (from the UE's point of view)		
Call-ID			RFC 3261 [22]	
callid	Same value as in INVITE	Call-Id of the dialog		
Cseq			RFC 3261 [22]	
value	Same value as in INVITE			
method	"ACK"			
Max-Forwards			RFC 3261 [22]	
value	"68"	The recommended initial value is 70 in RFC 3261. Assuming 2 hops as according to the Via header this results in a value of 68 in the message sent to the UE		
Content-Length			RFC 3261 [22]	
value	"0"	No message body included		

Condition	Explanation
NON-2XX	ACK for non-2xx response
NOTE: For further conditions see table 5.5.1-1	

5.5.2.2 SIP BYE

5.5.2.2.1 SIP BYE from the UE

Table 5.5.2.2.1-1: SIP BYE from the UE

Derivation Path: TS 24.229 [16], clause A.2.1.4.3, A.2.2.4.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line			RFC 3261 [22]	
Method	"BYE"			
Request-URI	same URI as the SS has sent earlier in the Contact header of a message within the same dialog	Contact URI of the recipient of the BYE		
SIP-Version	"SIP/2.0"			
Via			RFC 3261 [22]	
sent-protocol	"SIP/2.0/UDP"			UDP
	"SIP/2.0/TCP"			TCP
sent-by	same value as in INVITE message			
sent-by				MT_CALL
host	IP address or FQDN	Either the UE's IP address or its home domain name		
port	protected server port of the UE	as assigned during registration		
via-branch	Value starting with 'z9hG4bK'			
Route			RFC 3261 [22]	
route-param list	URIs of the Record-Route header sent to the UE in the response which has established the dialog, in reverse order			
	URIs of the Record-Route header sent to the UE in the INVITE			MT_CALL
From			RFC 3261 [22]	
addr-spec	Same URI of the UE as used earlier in the dialog	Local URI of the dialog (from the UE's point of view)		
tag	Same tag of the UE as used earlier in the dialog	Local tag of the dialog ID (from the UE's point of view)		
To			RFC 3261 [22]	
addr-spec	Same URI of the SS as used earlier in the dialogURI	Remote URI of the dialog (from the UE's point of view)		
tag	Same tag of the SS as used earlier in the dialog	Remote tag of the dialog ID (from the UE's point of view)		
Call-ID			RFC 3261 [22]	
callid	same value as in INVITE message			
CSeq			RFC 3261 [22]	
value	value of CSeq sent by the endpoint within its previous request in the same dialog but increased by one			
method	"BYE"			
Require			RFC 3261 [22] RFC 3329 [53]	
option-tag	"sec-agree"			
Proxy-Require			RFC 3261 [22] RFC 3329 [53]	
option-tag	"sec-agree"			
Security-Verify			RFC 3329 [53]	
sec-mechanism	same value as Security -Server header sent by SS during registration			

Max-Forwards			RFC 3261[22]	
value	any allowed value	Non-zero value		
P-Access-Network-Info			RFC 7315 [52] RFC 7913 [51]	
access-net-spec	Access network technology and, if applicable, the cell ID			
Content-Length	if present		RFC 3261 [22]	
value	"0"	No message body included		

5.5.2.2.2 SIP BYE from the SS

Table 5.5.2.2-1: SIP BYE from the SS

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.229 [16], clause A.2.1.4.3, A.2.2.4.3				
Request-Line			RFC 3261 [22]	
Method	"BYE"			
Request-URI	same URI as the UE has sent earlier in the Contact header of a response within the same dialog	Contact URI of the UE ("callee")		
SIP-Version	"SIP/2.0"			
Via	same as specified for INVITE sent by the SS in Table 5.5.2.5.2-		RFC 3261 [22]	MO_CALL
Via	same as in INVITE but with updated via-branches		RFC 3261 [22]	
Route	Not present		RFC 3261 [22]	
From			RFC 3261 [22]	
addr-spec	Same URI of the SS as used earlier in the dialog	Remote URI of the dialog (from the UE's point of view)		
tag	Same tag of the SS as used earlier in the dialog	Remote tag of the dialog (from the UE's point of view)		
To			RFC 3261 [22]	
addr-spec	Same URI of the UE as used earlier in the dialog	Local URI of the dialog (from the UE's point of view)		
tag	Same tag of the UE as used earlier in the dialog	Local tag of the dialog (from the UE's point of view)		
Call-ID			RFC 3261 [22]	
callid	same value as in INVITE message			
CSeq			RFC 3261 [22]	
value	value of CSeq sent by the endpoint within its previous request in the same dialog but increased by one			
method	"BYE"			
Max-Forwards			RFC 3261[22]	
value	"68"	The recommended initial value is 70 in RFC 3261. Assuming 2 hops as according to the Via header this results in a value of 68 in the message sent to the UE		
Content-Length			RFC 3261 [22]	
value	"0"	No message body included		

5.5.2.3 SIP CANCEL

This message is sent by the SS.

Table 5.5.2.3-1: SIP CANCEL

Derivation Path: TS 24.229 [16], clause A.2.1.4.4, A.2.2.4.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line			RFC 3261 [22]	
Method	"CANCEL"			
Request-URI	same value as in the INVITE being cancelled			
SIP-Version	"SIP/2.0"			
Via			RFC 3261 [22]	
via-parm	same value as in the INVITE being cancelled			
From			RFC 3261 [22]	
addr-spec	same value as in the INVITE being cancelled			
tag	same value as in the INVITE being cancelled			
To			RFC 3261 [22]	
addr-spec	same value as in the INVITE being cancelled			
Call-ID			RFC 3261 [22]	
Callid	same value as in the INVITE being cancelled			
CSeq			RFC 3261 [22]	
value	same value as in the INVITE being cancelled			
Method	"CANCEL"			
Content-Length			RFC 3261 [22]	
value	"0"	No message body included		

5.5.2.4 SIP INFO

This message is sent by the SS.

Table 5.5.2.4-1: SIP INFO

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.229 [16], clause A.2.1.4.6, A.2.2.4.6				
Request-Line				
Method	"INFO"			
Request-URI	px_MCPTT_Client_A_ID			
	px_MCVideo_Client_A_ID			MCVIDEO
	px_MCData_Client_A_ID			MCDATA
SIP-Version	"SIP/2.0"			
Via			RFC 3261 [22] RFC 3581 [55]	
sent-protocol	"SIP/2.0/UDP"			
sent-by	any allowed value	IP address or FQDN and protected server port of the UE		
via-branch	any allowed value	Value starting with 'z9hG4bK'		
From			RFC 3261 [22]	
addr-spec	px_MCPTT_Client_A_ID			
	px_MCVideo_Client_A_ID			MCVIDEO
	px_MCData_Client_A_ID			MCDATA
tag	"1"			
To			RFC 3261 [22] RFC 5031 [54]	
addr-spec	tsc_MCPTT_PublicServiceId_A			
	tsc_MCVideo_PublicServiceId_A			MCVIDEO
	tsc_MCData_PublicServiceId_A			MCDATA
Call-ID			RFC 3261 [22]	
Callid	same value as in the INVITE			
CSeq			RFC 3261 [22]	
value	value of CSeq sent by the SS within its previous request in the same dialog but increased by one			
Method	"INFO"			
Max-Forwards			RFC 3261 [22]	
value	"70"	The recommended initial value is 70 in RFC 3261. Editor's Note: to be changed to realistic value taking into account number of hops		
Content-Length			RFC 3261 [22]	
value	length of message body			
Message Body	any allowed value			

Editor's note: Table 5.5.2.4-1 needs to be reviewed

5.5.2.5 SIP INVITE

5.5.2.5.1 SIP INVITE from the UE

Table 5.5.2.5.1-1: SIP INVITE from the UE

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Request-Line			RFC 3261 [22] RFC 5031 [54]	
Method	"INVITE"			
Request-URI	tsc_MCPTT_PublicServiceId_A	The public service identity identifying the participating MCPTT function serving the MCPTT user		MCPTT
	tsc_MCVideo_PublicServiceId_A	The public service identity identifying the participating MCVideo function serving the MCVideo user		MCVIDEO
	tsc_MCData_PublicServiceId_A	The public service identity identifying the participating MCData function serving the MCData user		MCDATA
Request-URI	same URI as the SS has sent earlier in the Contact header of a message within the same dialog	Contact URI of the recipient of the BYE		re_INVITE
SIP-Version	"SIP/2.0"			
Via			RFC 3261 [22] RFC 3581 [55]	
sent-protocol	"SIP/2.0/UDP"	UE accesses the server via UDP		UDP
	"SIP/2.0/TCP"	UE accesses the server via TCP		TCP
sent-by				
host	IP address or FQDN	Either the UE's IP address or its home domain name		
port	protected server port of the UE	as assigned during registration		
via-branch	Value starting with 'z9hG4bK'			
Route			RFC 3261 [22]	
addr-spec[1]	SIP URI			
user-info and host	P-CSCF address of the SS	P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery		
port	protected server port of the SS	as assigned during registration		
uri-parameters	"lr"			
addr-spec[2]	SIP URI			
user-info and host	"scscf.3gpp.org"	same value as in the Service-Route header field of the 200 OK response to REGISTER		
port	not present			
uri-parameters	"lr"			
Route			RFC 3261 [22]	re_INVITE
route-param list	URIs of the Record-Route header sent to the UE in the response which has established the dialog, in reverse order			
	URIs of the Record-Route header sent to the UE in the INVITE			MT_CALL
From			RFC 3261 [22]	

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
addr-spec				
user-info and host	Default public user id (px_MCX_SIP_PublicUserId_A_1)			
port	not present			
tag	any value			
From			RFC 3261 [22]	re_INVITE
addr-spec	Same URI of the UE as used earlier in the dialog	Local URI of the dialog (from the UE's point of view)		
tag	Same tag of the UE as used earlier in the dialog	Local tag of the dialog ID (from the UE's point of view)		
To			RFC 3261 [22] RFC 5031 [54]	
addr-spec				
user-info and host	Same URI as Request-URI			
port	not present			
tag	not present			
To			RFC 3261 [22]	re_INVITE
addr-spec	Same URI of the SS as used earlier in the dialogURI	Remote URI of the dialog (from the UE's point of view)		
tag	Same tag of the SS as used earlier in the dialog	Remote tag of the dialog ID (from the UE's point of view)		
Call-ID			RFC 3261 [22]	
callid	any allowed value			
callid	same value as in INVITE creating the dialog			re_INVITE
CSeq			RFC 3261 [22]	
value	any allowed value			
value	value of CSeq sent by the endpoint within its previous request in the same dialog but increased by one			re_INVITE
method	"INVITE"			
Supported			RFC 3261 [22]	
option-tag	"timer"			
Session-Expires			RFC 4028 [30]	
delta-seconds	any allowed value			
Require			RFC 3261 [22] RFC 3312 [56] RFC 3329 [53]	
option-tag	"sec-agree"			
Proxy-Require			RFC 3261 [22] RFC 3329 [53]	
option-tag	"sec-agree"			
Security-Verify			RFC 3329 [53]	
sec-mechanism	same value as Security-Server header sent by SS during registration			
Contact			RFC 3261 [22 RFC 3840 [33]	

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
addr-spec	SIP URI			
user-info and host	IP address or FQDN			
port	protected server port of UE	as assigned during registration		
feature-param	"+g.3gpp.mcptt"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Push To Talk (MCPTT) communication.		MCPTT
	"+g.3gpp.mcvideo"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Video (MCVideo) communication.		MCVIDEO
	"+g.3gpp.mcdata.sds"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports mission critical data (MCData) service.communication.		MCDATA_SDS
	"+g.3gpp.mcdata.fd"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports mission critical data (MCData) service.communication.		MCDATA_FD
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"	This URN indicates that the device has the capabilities to support the mission critical push to talk (MCPTT) service.		MCPTT
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo"	This URN indicates that the device has the capabilities to support the Mission Critical Video (MCVideo) communication.		MCVIDEO
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"	This URN indicates that the device has the capabilities to support the mission critical data (MCData) service.		MCDATA_SDS
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd"	This URN indicates that the device has the capabilities to support the mission critical data (MCData) service.		MCDATA_FD

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
feature-param	"audio"	This feature tag indicates that the device supports audio as a streaming media type.		MCPTT OR MCVIDEO
feature-param	"video"	This feature tag indicates that the device supports video as a streaming media type.		MCVIDEO
feature-param	"text"	This feature tag indicates that the device supports text as a streaming media type.		MCDATA
Max-Forwards			RFC 3261 [22]	
value	any allowed value	Non-zero value		
P-Access-Network-Info			RFC 7315 [52]	
access-net-specs	Access network technology and, if applicable, the cell ID	AUTO		
Accept			RFC 3261 [22]	
media-range[1]	"application/sdp"			
media-range[2]	"application/vnd.3gpp.mcptt-info+xml"			MCPTT
	application/vnd.3gpp.mcvideo-info+xml			MCVIDEO
	"application/vnd.3gpp.mcdata-info+xml"			MCDATA
P-Preferred-Service			RFC 6050 [31]	
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
	"urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"			MCDATA_SDS
	"urn:urn-7:3gpp-service.ims.icsi.mcdata.fd"			MCDATA_FD
P-Preferred-Identity	if present		RFC 3325 [32]	
PPreferredID-value	same URI as in From-header			
Accept-Contact			RFC 3841 [29]	
ac-value[1]				
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"			MCDATA_SDS
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd"			MCDATA_FD
req-param	"require"			
explicit-param	"explicit"			
ac-value[2]				
feature-param	"+g.3gpp.mcptt"			MCPTT

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata.sds"			MCDATA_SDS
	"+g.3gpp.mcdata.fd"			MCDATA_FD
req-param	"require"			
explicit-param	"explicit"			
Priv-Answer-Mode	not present			
Answer-Mode	not present		RFC 5373 [34]	re_INVITE
Answer-Mode			RFC 5373 [34]	
answer-mode-value	"Auto"			
answer-mode-value	"Manual"			MANUAL
Resource-Priority			RFC 4412 [40] RFC 7134 [57] RFC 8101 [45]	EMERGENCY-CALL or IMMPERIL-CALL
r-value				EMERGENCY-CALL
namespace	value of the <resource-priority-namespace> element contained in the <emergency-resource-priority> element contained in the <OnNetwork> element of the MCX service configuration documents	As configured in Table 5.5.8.4-1 for MCPTT and in Table 5.5.8.8-1 for MCVIdeo		
r-priority	value of the <resource-priority-priority> element contained in the <emergency-resource-priority> element contained in the <OnNetwork> element of the MCX service configuration document	As configured in Table 5.5.8.4-1 for MCPTT and in Table 5.5.8.8-1 for MCVIdeo		
r-value				IMMPERIL-CALL
namespace	value of the <resource-priority-namespace> element contained in the <imminent-peril-resource-priority> element contained in the <OnNetwork> element of the MCX service configuration documents	As configured in Table 5.5.8.4-1 for MCPTT and in Table 5.5.8.8-1 for MCVIdeo		
r-priority	value of the <resource-priority-priority> element contained in the <imminent-peril-resource-priority> element contained in the <OnNetwork> element of the MCX service configuration document	As configured in Table 5.5.8.4-1 for MCPTT and in Table 5.5.8.8-1 for MCVIdeo		
Content-Type			RFC 5621 [58]	
media-type	"multipart/mixed"			

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Length	present in case of TCP and when there is a message body (otherwise optional)		RFC 3261 [22]	
value	any value	length of message-body		
Message-body			RFC 3261 [22]	
MIME body part		**SDP message**		
MIME-part-headers				
Content-Type	"application/sdp"		RFC 4566 [27]	
MIME-part-body	SDP Message as described in Table 5.5.3.1.1-1			MCPTT
	SDP Message as described in Table 5.5.3.1.1-2			MCVIDEO
	SDP Message as described in Table 5.5.3.1.1-3			MCDATA
MIME body part		**MCPTT Info/MCVideo/MCData**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcptt-info+xml"			MCPTT
	"application/vnd.3gpp. mcvideo-info+xml"			MCVIDEO
	"application/vnd.3gpp. mcdata-info+xml"			MCDATA
Content-ID	any value	Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	MCPTT-Info as described in Table 5.5.3.2.1-1		TS 24.379 [9] clause F.1	MCPTT
	MCVideo-Info as described in Table 5.5.3.2.1-2		TS 24.281 [86] clause F.1	MCVIDEO
	MCData-Info as described in Table 5.5.3.2.1-3		TS 24.282 [87] clause D.1	MCDATA
MIME body part		**Resource list**	RFC 5366 [35]	PRIVATE-CALL OR MCD_1to1
MIME-part-headers				
Content-Type	"application/resource-lists+xml"			
Content-ID	any value	Unique URL identifying the Resource-lists XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	As described in Table 5.5.3.3.1-1			MCPTT
	As described in Table 5.5.3.3.1-2			MCVIDEO
	As described in Table 5.5.3.3.1-3			MCDATA

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MIME body part		**Location info**		(EMERGE NCY-CALL AND ALERT_IN D) OR LOCATIO N-INFO
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcptt-location-info+xml"	This MIME part shall be included if the MCPTT-Info 'alert-ind' element sent in the MCPTT-Info is set to true.		MCPTT
	"application/vnd.3gpp. mcvideo-location-info+xml"	This MIME part shall be included if the MCVideo-Info 'alert-ind' element sent in the MCVideo-Info is set to true.		MCVIDEO
Content-ID	any value	Unique URL identifying the Location-info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	Location-info as described in Table 5.5.3.4.1-1		TS 24.379 [9] clause F.3	MCPTT
	Location-info as described in Table 5.5.3.4.1-2		TS 24.281 [86] clause F.3	MCVIDEO
MIME body part		**Signature**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcptt-signed+xml"		TS 24.379 [9]	
MIME-part-body	Signatures for XML MIME bodies as described in Table 5.5.13.1-1		TS 24.379 [9]	

Condition	Explanation
MANUAL	Call establishment with manual commencement mode
MCD_1to1	A one-to-one MCData call
MCDATA_SDS	SDS message or SDS disposition notification
MCDATA_FD	FD message or FD disposition notification
re_INVITE	INVITE within a dialog
ALERT_IND	MCPTT emergency alert is required as specified for the test case or automatically initiated by the client for an emergency call (in case of condition EMERGENCY-CALL when pc_MCX_EmergencyIndWithAlertInd=true); ⇒ <alert-ind> is set to true in the mcptt-info.
NOTE: For further conditions see table 5.5.1-1	

5.5.2.5.2   SIP INVITE from the SS

Table 5.5.2.5.2-1: SIP INVITE from the SS

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line			RFC 3261 [22] RFC 5031 [54]	
Method	"INVITE"			
Request-URI	SIP URI of the UE's contact address as provided in the Contact-header of the REGISTER message			
Request-URI	same URI as the UE has sent earlier in the Contact header of a response within the same dialog	Contact URI of the UE		re_INVITE
SIP-Version	"SIP/2.0"			
Via			RFC 3261 [22] RFC 3581 [55]	
sent-protocol[1]	"SIP/2.0/TCP"			
sent-by[1]		Address of the P-CSCF that communicates with the called party		
host	P-CSCF address of the SS	P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery		
port	protected server port of the SS	as assigned during registration		
via-branch[1]	Value assigned by the SS starting with 'z9hG4bK'			
sent-protocol[2]	"SIP/2.0/UDP"			
sent-by[2]		Address of the other endpoint (the caller)		
host	Host name of the SIP URI being used in the From header			
port	Same port number as in Contact-header	Caller's port number		
via-branch[2]	Value assigned by the SS starting with 'z9hG4bK'			
Record-Route		Record-Route corresponding to the Via header	RFC 3261 [22]	
addr-spec[1]	SIP URI	SIP URI corresponding to first entry of Via header		
user-info and host	P-CSCF address of the SS	P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery		
port	protected server port of the SS	as assigned during registration		
uri-parameters	"lr"			
addr-spec[2]	SIP URI			
user-info and host	"term@scscf1.3gpp.org"			
port	not present			
uri-parameters	"lr"			
addr-spec[3]	SIP URI			
user-info and host	"orig@scscf2.3gpp.org"			
port	not present			
uri-parameters	"lr"			
addr-spec[4]	SIP URI			
user-info and host	"pcscf2.3gpp.org"			
port	not present			

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
uri-parameters	"lr"		RFC 3261 [22]	
Record-Route	same as in the 180, 183 or 200 response sent to the UE during MO call establishment in reverse order		RFC 3261 [22]	re_INVITE AND MO_CALL
From			RFC 3261 [22]	
addr-spec				
user-info and host	tsc_MCPTT_PublicServiceId_A	SIP URI of the calling UE		MCPTT
	tsc_MCVideo_PublicServiceId_A	SIP URI of the calling UE		MCVIDEO
	tsc_MCData_PublicServiceId_A	SIP URI of the calling UE		MCDATA
port	not present			
tag	Value assigned by the SS			
From			RFC 3261 [22]	re_INVITE
addr-spec	Same URI of the SS as used earlier in the dialog	Remote URI of the dialog (from the UE's point of view)		
tag	Same tag of the SS as used earlier in the dialog	Remote tag of the dialog (from the UE's point of view)		
To			RFC 3261 [22] RFC 5031 [54]	
addr-spec				
user-info and host	px_MCX_SIP_PublicUserId_A_1	Default public user ID (IMPU) as stored in the UICC		
port	not present			
tag	not present			
To			RFC 3261 [22]	re_INVITE
addr-spec	Same URI of the UE as used earlier in the dialog	Local URI of the dialog (from the UE's point of view)		
tag	Same tag of the UE as used earlier in the dialog	Local tag of the dialog (from the UE's point of view)		
Call-ID			RFC 3261 [22]	
callid	Value assigned by the SS			
Call-ID			RFC 3261 [22]	re_INVITE
callid	same value as in INVITE creating the dialog			
CSeq			RFC 3261 [22]	
value	Value assigned by the SS			
value	value of CSeq sent by the endpoint within its previous request in the same dialog but increased by one			re_INVITE
method	"INVITE"			
Supported			RFC 3261 [22]	
option-tag	"100rel"	This option tag indicates that the UA can send or receive reliable provisional responses.		
option-tag	"timer"			
option-tag	"tdialog"			
option-tag	"norefersub"			

ETSI

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
P-Called-Party-ID			RFC 7315 [52]	
called-pty-id-spec	Same public user ID as used in the To-header			
Session-Expires			RFC 4028 [30]	
generic-param	"1800"	The recommended initial value is 1800 in RFC 4028 [30].		
P-Early-Media			RFC 5009 [60]	
em-parm	"inactive"			
Require			RFC 3261 [22] RFC 3312 [56] RFC 3329 [53]	
option-tag	"sec-agree"			
Proxy-Require			RFC 3261 [22] RFC 3329 [53]	
option-tag	"sec-agree"			
P-Asserted-Identity			RFC 3325 [32]	
addr-spec				
user-info and host	same URI as in From-header			
port	not present			
Contact			RFC 3261 [22] RFC 3840 [33]	
addr-spec	SIP URI			
user-info and host	tsc_MCPTT_SessionId			MCPTT
	tsc_MCVideo_SessionId			MCVIDEO
	tsc_MCData_SessionId			MCDATA
port	Value assigned by the SS			
feature-param	"+g.3gpp.mcptt"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Push To Talk (MCPTT) communication.	RFC 3840 [33] clause 9	MCPTT
	"+g.3gpp.mcvideo"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Video (MCVideo) communication.	RFC 3840 [33] clause 9	MCVIDEO
	"+g.3gpp.mcdata.sds"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Data (MCData) communication.	RFC 3840 [33] clause 9	MCDATA_SDS

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	"+g.3gpp.mcdata.fd"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Data (MCData) communication.	RFC 3840 [33] clause 9	MCDATA_FD
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"	This URN indicates that the device has the capabilities to support the mission critical push to talk (MCPTT) service.	RFC 3840 [33] clause 9	MCPTT
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo"	This URN indicates that the device has the capabilities to support the mission critical video (MCVideo) service.	RFC 3840 [33] clause 9	MCVIDEO
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"	This URN indicates that the device has the capabilities to support the mission critical data (MCData) SDS service.	RFC 3840 [33] clause 9	MCDATA_SDS
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd"	This URN indicates that the device has the capabilities to support the mission critical data (MCData) FD service.	RFC 3840 [33] clause 9	MCDATA_FD
feature-param	"audio"	This feature tag indicates that the device supports audio as a streaming media type.	RFC 3840 [33] clause 10.1	MCPTT OR MCVIDEO
feature-param	"video"	This feature tag indicates that the device supports video as a streaming media type.		MCVIDEO
feature-param	"text"	This feature tag indicates that the device supports text as a streaming media type.		MCDATA
feature-param	"isfocus"			
Max-Forwards			RFC 3261 [22]	
value	"68"	The recommended initial value is 70 in RFC 3261 [22]. Assuming 2 hops as according to the Via header this results in a value of 68 in the message sent to the UE		
Accept			RFC 3261 [22]	
media-range[1]	"application/sdp "			
media-range[2]	"application/vnd.3gpp.mcptt-info+xml"			MCPTT
	"application/vnd.3gpp.mcvideo-info+xml"			MCVIDEO
	"application/vnd.3gpp.mcdata-info+xml"			MCDATA
Accept-Contact			RFC 3841 [29]	

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
ac-value[1]				
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"			MCDATA_SDS
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd"			MCDATA_FD
req-param	"require"			
explicit-param	"explicit"			
ac-value[2]				
feature-param	"+g.3gpp.mcptt"			MCPTT
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata.sds"			MCDATA_SDS
	"+g.3gpp.mcdata.fd"			MCDATA_FD
req-param	"require"			
explicit-param	"explicit"			
Answer-Mode	not present		RFC 5373 [34] TS 24.379 [9] clause 6.3.2.2.6.3	re_INVITE OR FIRST-TO-ANSWER
Answer-Mode			RFC 5373 [34]	
answer-mode-value	"Auto"			
answer-mode-value	"Manual"			MANUAL
Priv-Answer-Mode				FIRST-TO-ANSWER
answer-mode-value	"Manual"			
Content-Type			RFC 5621 [58]	
media-type	"multipart/mixed"			
Content-Length			RFC 3261 [22]	
Value	length of message-body			
Message-body			RFC 3261 [22]	
MIME body part		**SDP message**		
MIME-part-headers				
MIME-Content-Type	"application/sdp"			
MIME-part-body	SDP Message as described in Table 5.5.3.1.2-1		RFC 4566 [27]	MCPTT
	SDP Message as described in Table 5.5.3.1.2-2		RFC 4566 [27]	MCVIDEO
	SDP Message as described in Table 5.5.3.1.2-3		RFC 4566 [27]	MCDATA
MIME body part		**MCPTT/MCVideo/MCData Info**		
MIME-part-headers				
MIME-Content-Type	"application/vnd.3gpp.mcptt-info+xml"			MCPTT
	"application/vnd.3gpp.mcvideo-info+xml"			MCVIDEO
	"application/vnd.3gpp.mcdata-info+xml"			MCDATA

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-ID	Unique id in format of a Message-ID assigned by the SS	Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	MCPTT-Info as described in Table 5.5.3.2.2-1			MCPTT
	MCVideo-Info as described in Table 5.5.3.2.2-2			MCVIDEO
	As described in Table 5.5.3.2.2-3			MCDATA
MIME body part		**Location info**		LOCATION-INFO
MIME-part-headers				
MIME-Content-Type	"application/vnd.3gpp. mcptt-location-info+xml"			MCPTT
	"application/vnd.3gpp. mcvideo-location-info+xml"			MCVIDEO
Content-ID	Unique id in format of a Message-ID assigned by the SS	Unique URL identifying the Location-info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	Location-info as described in Table 5.5.3.4.2-1		TS 24.379 [9] clause F.3	MCPTT
	Location-info as described in Table 5.5.3.4.2-2		TS 24.281 [86] clause F.3	MCVIDEO
MIME body part		**Signature**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcptt-signed+xml"		TS 24.379 [9]	
MIME-part-body	Signatures for XML MIME bodies as described in Table 5.5.13.1-2		TS 24.379 [9]	

Condition	**Explanation**
MANUAL	Call establishment with manual commencement mode
re_INVITE	INVITE within a dialog
MCD_1to1	A one-to-one MCData call
MCDATA_SDS	SDS message or SDS disposition notification
MCDATA_FD	FD message or FD disposition notification
For further conditions see table 5.5.1-1	

5.5.2.6 Void

5.5.2.7 SIP MESSAGE

5.5.2.7.1 SIP MESSAGE from the UE

Table 5.5.2.7.1-1: SIP MESSAGE from the UE

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.229 [16], clause A.2.1.4.7a, A.2.2.4.7a				
Request-Line			RFC 3261 [22] RFC 5031 [54]	
Method	"MESSAGE"			
Request-URI	tsc_MCPTT_PublicServiceId_A	The public service identity identifying the originating participating MCPTT function serving the MCPTT user		MCPTT
	tsc_MCVideo_PublicServiceId_A	The public service identity identifying the originating participating MCVideo function serving the MCVideo user		MCVIDEO
	tsc_MCData_PublicServiceId_A	The public service identity identifying the originating participating MCData function serving the MCData user		MCDATA
	same URI as provided in the Asserted-Identity header field of the SIP MESSAGE for location reporting configuration			LOCATION_REPORT
SIP-Version	"SIP/2.0"			
Via			RFC 3261 [22] RFC 3581 [55]	
sent-protocol	"SIP/2.0/UDP"			UDP
	"SIP/2.0/TCP"			TCP
sent-by				
host	IP address or FQDN	Either the UE's IP address or its home domain name		
port	protected server port of the UE	as assigned during registration		
via-branch	Value starting with 'z9hG4bK'			
From			RFC 3261 [22]	
addr-spec				
user-info and host	Default public user id (px_MCX_SIP_PublicUserId_A_1)	The URI of the UE		
port	not present			
tag	any allowed value			
To			RFC 3261 [22] RFC 5031 [54]	
addr-spec				
user-info and host	tsc_MCPTT_PublicServiceId_A	The URI of the SS		MCPTT
	tsc_MCVideo_PublicServiceId_A	The URI of the SS		MCVIDEO
	tsc_MCData_PublicServiceId_A	The URI of the SS		MCDATA
port	not present			
tag	not present			
Call-ID			RFC 3261 [22]	
callid	any allowed value			
Cseq			RFC 3261 [22]	
value	any allowed value			
method	"MESSAGE"			
Max-Forwards			RFC 3261 [22]	
value	any allowed value	Non-zero value		
P-Access-Network-Info			RFC 7315 [52]	

access-net-spec	Access network technology and, if applicable, the cell ID			
Route	same as specified for INVITE sent by the UE in Table 5.5.2.5.1-1		RFC 3261 [22]	
Accept-Contact			RFC 3841 [29]	
ac-value[1]				
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata"			MCDATA
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"			MCDATA_SDS
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd"			MCDATA_FD
req-param	"require"			
explicit-param	"explicit"			
ac-value[2]				MCDATA_SDS, MCDATA_FD
feature-param	"+g.3gpp.mcdata.sds"			MCDATA_SDS
	"+g.3gpp.mcdata.fd"			MCDATA_FD
req-param	"require"			
explicit-param	"explicit"			
P-Preferred-Service			RFC 6050 [31]	
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
	"urn:urn-7:3gpp-service.ims.icsi.mcdata"			MCDATA
	"urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"			MCDATA_SDS
	"urn:urn-7:3gpp-service.ims.icsi.mcdata.fd"			MCDATA_FD
P-Preferred-Identity	if present		RFC 3325 [32]	
PPreferredID-value	same URI as in From-header			
Content-Type			RFC 5621 [58]	
media-type	"multipart/mixed"			
Content-Length	present in case of TCP and when there is a message body (otherwise optional)		RFC 3261 [22]	
value	any value	length of message-body		
Message-body			RFC 3261 [22]	

MIME body part		**MCPTT/MCVideo/MCData Info**		
MIME-part-headers				
MIME-Content-Type	"application/vnd.3gpp. mcptt-info+xml"			MCPTT
	"application/vnd.3gpp. mcvideo-info+xml"			MCVIDEO
	"application/vnd.3gpp. mcdata-info+xml"			MCDATA
Content-ID	any value	Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	MCPTT-Info as described in Table 5.5.3.2.1-1		TS 24.379 [9] clause F.1	MCPTT
	MCVideo-Info as described in Table 5.5.3.2.1-2		TS 24.281 [86] clause F.1	MCVIDEO
	MCData-Info as described in Table 5.5.3.2.1-3			MCDATA
MIME body part		**Affiliation-Command**		AFFILIATION
MIME-part-headers				
MIME-Content-Type	"application/vnd.3gpp. mcptt-affiliation-command+xml"			MCPTT
	"application/vnd.3gpp. mcvideo-affiliation-command+xml"			MCVIDEO
	"application/vnd.3gpp. mcdata-affiliation-command+xml"			MCDATA
Content-ID	any value	Unique URL identifying the affiliation-command XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	MCPTT-Affiliation-Command as described in Table 5.5.3.7-1		TS 24.379 [9] clause F.4	MCPTT
	MCVideo-Affiliation-Command as described in Table 5.5.3.7-2		TS 24.281 [86] clause F.4	MCVIDEO
	MCData-Affiliation-Command as described in Table 5.5.3.7-3		TS 24.282 [87] clause D.3	MCDATA
MIME body part		**Resource lists**	RFC 5366 [35]	RESOURCE_LISTS
MIME-part-headers				
MIME-Content-Type	"application/resource-lists+xml"			
Content-ID	any value	Unique URL identifying the Resource-lists XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	Resource-lists as described in Table 5.5.3.3.1-1			MCPTT
	Resource-lists as described in Table 5.5.3.3.1-2			MCVIDEO

	Resource-lists as described in Table 5.5.3.3.1-3			MCDATA
MIME body part		**Location info**	TS 24.379 [9] clause F.3	LOCATION-INFO, LOCATION_REPORT
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"	This MIME part shall be included if the MCPTT-Info 'alert-ind' element sent in the MCPTT-Info is set to true.		MCPTT
	"application/vnd.3gpp.mcvideo-location-info+xml"			MCVIDEO
	"application/vnd.3gpp.mcdata-location-info+xml"			MCDATA
Content-ID	any value	Unique URL identifying the Location-info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	Location-info as described in Table 5.5.3.4.1-1			MCPTT
	Location-info as described in Table 5.5.3.4.1-2			MCVIDEO
	Location-info as described in Table 5.5.3.4.1-3			MCDATA
MIME body part		**MIKEY message**		MIKEY
MIME-part-headers				
Content-Type	"application/mikey"			
MIME-part-body	As described in Table 5.5.9.1-2A	MIKEY message, containing the PSK	TS 33.180 [30] TS 24.282 [87]	
MIME body part		**MCData Data signalling message**		MCDATA_SIGNALLING
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcdata-signalling"			
MIME-part-body	SIGNALLING_PAYLOAD as described in Table 5.5.3.8.1-1		TS 24.282 [87]	
MIME body part		**MCData Data message**		MCDATA_PAYLOAD
MIME-part-headers				
Content-Type	application/vnd.3gpp.mcdata-payload			
MIME-part-body	DATA_PAYLOAD as described in Table 5.5.3.9.1-1		TS 24.282 [87]	
MIME body part		**Signature**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-signed+xml"		TS 24.379 [9]	
MIME-part-body	Signatures for XML MIME bodies as described in Table 5.5.13.1-1		TS 24.379 [9]	

Condition	Explanation
RESOURCE_LISTS	Message-body contains Resource lists
LOCATION_REPORT	Message-body contains location information report according to TS 24.379 [2] clause 13.3.4.2
MIKEY	Message-body contains MIKEY message (e.g. for MCData 1-to-1 communication)
MCDATA_SIGNALLING	Message-body contains MCData Data signalling message
MCDATA_PAYLOAD	Message-body contains MCData Data message (DATA PAYLOAD)
MCDATA_SDS	SDS message or SDS disposition notification
MCDATA_FD	FD message or FD disposition notification
For further conditions see table 5.5.1-1	

5.5.2.7.2   SIP MESSAGE from the SS

Table 5.5.2.7.2-1: SIP MESSAGE from the SS

Derivation Path: TS 24.229 [16], clause A.2.1.4.7a, A.2.2.4.7a				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line			RFC 3261 [22] RFC 5031 [54]	
Method	"MESSAGE"			
Request-URI	Public user id associated to the MC service id	px_MCX_SIP_PublicUserId_A_1 (in general)		
SIP-Version	"SIP/2.0"			
Via			RFC 3261 [22] RFC 3581 [55]	
sent-protocol[1]	"SIP/2.0/TCP"			
sent-by[1]		Address of the P-CSCF that communicates with the called party		
….host	P-CSCF address of the SS	P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery		
port	protected server port of the SS	as assigned during registration		
via-branch[1]	Value assigned by the SS starting with 'z9hG4bK'			
sent-protocol[2]	"SIP/2.0/UDP"			
sent-by[2]				
….host	"scscf.3gpp.org"			
port	Value assigned by the SS	Caller's port number		
via-branch[2]	Value assigned by the SS starting with 'z9hG4bK'			
sent-protocol[3]	"SIP/2.0/UDP"			
sent-by[3]				
host	host name of the MC server			
port	not present			
via-branch[3]	Value assigned by the SS starting with 'z9hG4bK'			
From			RFC 3261 [22]	
addr-spec				
user-info and host	tsc_MCPTT_PublicServiceId_A			MCPTT
	tsc_MCVideo_PublicServiceId_A			MCVIDEO
	tsc_MCData_PublicServiceId_A			MCDATA
port	not present			
tag	Value assigned by the SS			
To			RFC 3261 [22] RFC 5031 [54]	
addr-spec				
user-info and host	same URI as used as Request URI			
port	not present			
tag	not present			
Call-ID			RFC 3261 [22]	
callid	Value assigned by the SS			
Cseq			RFC 3261 [22]	
value	Value assigned by the SS			
method	"MESSAGE"			
Max-Forwards			RFC 3261 [22]	

Derivation Path: TS 24.229 [16], clause A.2.1.4.7a, A.2.2.4.7a				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
value	"67"	The recommended initial value is 70 in RFC 3261. Assuming 3 hops as according to the Via header this results in a value of 67 in the message sent to the UE		
P-Asserted-Service			RFC 6050 [31]	MCDATA_ SDS, MCDATA_ FD
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"			MCDATA_ SDS
	"urn:urn-7:3gpp-service.ims.icsi.mcdata.fd"			MCDATA_ FD
P-Asserted-Service			RFC 6050 [31]	AFFILIATI ON, LOCATIO N_CONFI G
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"urn:urn-7:3gpp-service.ims.icsi.mcvide o"			MCVIDEO
	"urn:urn-7:3gpp-service.ims.icsi.mcdata "			MCDATA
Accept-Contact			RFC 3841 [29]	
ac-value[1]				
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvide o"			MCVIDEO
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata "			MCDATA
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"			MCDATA_ SDS
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd"			MCDATA_ FD
req-param	"require"			
explicit-param	"explicit"			
ac-value[2]				ACCEPT-CONTACT -WITH-MEDIA-FEATURE-TAG
feature-param	"+g.3gpp.mcptt"			MCPTT
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata"			MCDATA
req-param	"require"			

Derivation Path: TS 24.229 [16], clause A.2.1.4.7a, A.2.2.4.7a				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
explicit-param	"explicit"			
ac-value[2]				MCDATA_SDS, MCDATA_FD
feature-param	"+g.3gpp.mcdata.sds"			MCDATA_SDS
	"+g.3gpp.mcdata.fd"			MCDATA_FD
req-param	"require"			
explicit-param	"explicit"			
P-Asserted-Identity			RFC 3325 [32]	MCDATA_SDS, MCDATA_FD
name-addr	px_MCX_SIP_PublicUserId_B	The public user identity of the originating MCData user		
P-Asserted-Identity			RFC 3325 [32]	LOCATION_CONFIG
name-addr	tsc_MCPTT_PublicServiceId_PF_A	URI of the participating MCPTT function which configures the location reporting at the UE		MCPTT
	tsc_MCVideo_PublicServiceId_PF_A	URI of the participating MCVideo function which configures the location reporting at the UE		MCVIDEO
	tsc_MCData_PublicServiceId_PF_A	URI of the participating MCData function which configures the location reporting at the UE		MCDATA
Content-Type			RFC 5621 [58]	
media-type	"multipart/mixed"			
Content-Length			RFC 3261 [22]	
value	length of message-body			
Message-body			RFC 3261 [22]	
MIME body part		**MCPTT/MCVideo/MCData Info**		
MIME-part-headers				
MIME-Content-Type	"application/vnd.3gpp.mcptt-info+xml"			MCPTT
	"application/vnd.3gpp.mcvideo-info+xml"			MCVIDEO
	"application/vnd.3gpp.mcdata-info+xml"			MCDATA
Content-ID	Unique id in format of a Message-ID assigned by the SS	Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	MCPTT-Info as described in Table 5.5.3.2.2-1		TS 24.379 [9] clause F.1	MCPTT
	MCVideo-Info as described in Table 5.5.3.2.2-2		TS 24.281 [86] clause F.1	MCVIDEO
	MCData-Info as described in Table 5.5.3.2.2-3		TS 24.282 [87] clause D.1.2	MCDATA

Derivation Path: TS 24.229 [16], clause A.2.1.4.7a, A.2.2.4.7a				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MIME body part		**Affiliation-Command**		AFFILIATION
MIME-part-headers				
MIME-Content-Type	"application/vnd.3gpp. mcptt-affiliation-command+xml"			MCPTT
	"application/vnd.3gpp. mcvideo-affiliation-command+xml"			MCVIDEO
	"vnd.3gpp.mcdata-affiliation-command+xml"			MCDATA
Content-ID	Unique id in format of a Message-ID assigned by the SS	Unique URL identifying the affiliation-command XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	MCPTT-Affiliation-Command as described in Table 5.5.3.7-1		TS 24.379 [9] clause F.4	MCPTT
	MCVideo-Affiliation-Command as described in Table 5.5.3.7-2		TS 24.281 [86] clause F.4	MCVIDEO
	MCData-Affiliation-Command as described in Table 5.5.3.7-3		TS 24.282 [87] clause D.3	MCDATA
MIME body part		**Resource lists**	RFC 5366 [35]	RESOURCE_LISTS
MIME-part-headers				
MIME-Content-Type	"application/resource-lists+xml"			
Content-ID	Unique id in format of a Message-ID assigned by the SS	Unique URL identifying the Resource-lists XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	Resource-lists as described in Table 5.5.3.3.2-1			MCPTT
	Resource-lists as described in Table 5.5.3.3.2-2			MCVIDEO
	Resource-lists as described in Table 5.5.3.3.2-3			MCDATA
MIME body part		**Location info**		LOCATION-INFO, LOCATION_CONFIG
MIME-part-headers				
MIME-Content-Type	"application/vnd.3gpp. mcptt-location-info+xml"			MCPTT
	"application/vnd.3gpp. mcvideo-location-info+xml"			MCVIDEO
	"application/vnd.3gpp. mcdata-location-info+xml"			MCDATA
Content-ID	Unique id in format of a Message-ID assigned by the SS	Unique URL identifying the Location-info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	

Derivation Path: TS 24.229 [16], clause A.2.1.4.7a, A.2.2.4.7a				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MIME-part-body	Location-info as described in Table 5.5.3.4.2-1		TS 24.379 [9] clause F.3	MCPTT
	Location-info as described in Table 5.5.3.4.2-2		TS 24.281 [86] clause F.3	MCVIDEO
	Location-info as described in Table 5.5.3.4.2-3		TS 24.282 [87] clause D.3	MCDATA
MIME body part		**MIKEY message**		MIKEY
MIME-part-headers				
Content-Type	"application/mikey"			
MIME-part-body	As described in Table 5.5.9.1-2	MIKEY message, containing the PSK	TS 33.180 [30] TS 24.282 [87]	
MIME body part		**MCData Data signalling message**		MCDATA_ SIGNALLI NG
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcdata-signalling"			
MIME-part-body	SIGNALLING PAYLOAD as described in Table 5.5.3.8.2-1		TS 24.282 [87]	
MIME body part		**MCData Data message**		MCDATA_ PAYLOAD
MIME-part-headers				
Content-Type	application/vnd.3gpp.m cdata-payload			
MIME-part-body	DATA_PAYLOAD as described in Table 5.5.3.9.1-2		TS 24.282 [87]	
MIME body part		**Signature**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcptt-signed+xml"		TS 24.379 [9]	
MIME-part-body	Signatures for XML MIME bodies as described in Table 5.5.13.1-2		TS 24.379 [9]	

Condition	Explanation
RESOURCE_LISTS	Message-body contains Resource lists
LOCATION_CONFIG	Message-body contains location reporting configuration according to TS 24.379 [2] clause 13.2.2
MIKEY	Message-body contains MIKEY message (e.g. for MCData 1-to-1 communication)
MCDATA_SIGNALLING	Message-body contains MCData Data signalling message
MCDATA_PAYLOAD	Message-body contains MCData Data message (DATA PAYLOAD)
MCDATA_SDS	SDS message or SDS disposition notification
MCDATA_FD	FD message or FD disposition notification
ACCEPT-CONTACT-WITH-MEDIA-FEATURE-TAG	Accept-Contact header field contains media feature tag ("+g.3gpp.mcptt", "+g.3gpp.mcvideo" or "+g.3gpp.mcdata")
For further conditions see table 5.5.1-1	

5.5.2.8   SIP NOTIFY

This message is sent by the SS.

Table 5.5.2.8-1: SIP NOTIFY

Derivation Path: TS 24.229 [16] clause A.2.1.4.8, A2.2.4.8				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line			RFC 3261 [22]	
Method	"NOTIFY"			
Request-URI	same URI as the UE has provided earlier in the Contact header of the SUBSCRIBE			
SIP-Version	"SIP/2.0"			
Via			RFC 3261 [22]	
sent-protocol[1]	"SIP/2.0/TCP"			
sent-by[1]				
host	P-CSCF address of the SS	P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery		
port	protected server port of the SS			
via-branch[1]	Value assigned by the SS starting with 'z9hG4bK'			
sent-protocol[2]	"SIP/2.0/UDP"			
sent-by[2]				
host	"scscf.3gpp.org"			
port	not present			
via-branch[2]	Value assigned by the SS starting with 'z9hG4bK'			
sent-protocol[3]	"SIP/2.0/UDP"			
sent-by[3]				
host	host name of the MC server			
	tsc_MCX_CMS_Hostname			CONFIG
	tsc_MCX_GMS_Hostname			GROUPCONFIG
port	not present			
via-branch[3]	Value assigned by the SS starting with 'z9hG4bK'			
From			RFC 3261 [22]	
addr-spec	same URI as received in the To header of the SUBSCRIBE message	Remote URI of the dialog (from the UE's point of view)		
tag	same tag as in the To-header of the response which has established the dialog	Remote tag of the dialog (from the UE's point of view)		
To			RFC 3261 [22]	
addr-spec	same URI as received in the From header of the SUBSCRIBE message	Local URI of the dialog (from the UE's point of view)		
tag	same value as received in From tag of the SUBSCRIBE message	Local tag of the dialog (from the UE's point of view)		
Call-ID			RFC 3261 [22]	
callid	same as value received in SUBSCRIBE message			
Cseq			RFC 3261 [22]	
value	value of CSeq sent by the SS within its previous request in the same dialog but increased by one			
method	"NOTIFY"			

Derivation Path: TS 24.229 [16] clause A.2.1.4.8, A2.2.4.8				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Contact			RFC 3261 [22]	
addr-spec				
user-info and host	Same URI as used as Contact-URI in the 200 (OK) for the SUBSCRIBE message			
port	not present			
Event			RFC 6665 [39] RFC 3842 [61]	
event-type	"presence"			PRESENCE-EVENT
	"xcap-diff"			CONFIG. GROUPCONFIG
	"poc-settings"			POC-SETTINGS-EVENT
Max-Forwards			RFC 3261 [22]	
value	"67"	The recommended initial value is 70 in RFC 3261. Assuming 3 hops as according to the Via header this results in a value of 67 in the message sent to the UE		
Subscription-State			RFC 6665 [39]	
substate-value	"active"			
expires	"7200"			
Content-Type			RFC 3261 [22] RFC 3842 [61]	
media-type	"multipart/mixed"			
Content-Length			RFC 3261 [22]	
value	length of message-body			
Message-body			RFC 3261 [22]	
MIME body part		**PIDF**		PRESENCE-EVENT
MIME-part-headers				
Content-Type	"application/pidf+xml"			
Content-ID	Unique id in format of a Message-ID assigned by the SS	Unique URL identifying the PIDF XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	PIDF as described in Table 5.5.3.5.2-1		TS 24.379 [9] clause 9.3.1	MCPTT
	PIDF as described in Table 5.5.3.5.2-2		TS 24.281 [86] clause 8.3.1	MCVIDEO
	PIDF as described in Table 5.5.3.5.2-3		TS 24.282 [87] clause 8.4.1	MCDATA
MIME body part		**xcap-diff**		CONFIG, GROUPCONFIG
MIME-part-headers				
Content-Type	"application/xcap-diff+xml"			
Content-ID	Unique id in format of a Message-ID assigned by the SS	Unique URL identifying the xcap-diff XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	

Derivation Path: TS 24.229 [16] clause A.2.1.4.8, A2.2.4.8				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MIME-part-body	xcap-diff document as described in Table 5.5.3.12-1			CONFIG
	xcap-diff document as described in Table 5.5.3.12-2			GROUPC ONFIG
MIME body part		**PoC-Settings**		POC-SETTINGS -EVENT
MIME-part-headers				
Content-Type	"application/poc-settings+xml"		RFC 4354 [103]	
Content-ID	Unique id in format of a Message-ID assigned by the SS	Unique URL identifying the PoC-Settings XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	PoC-Settings document as described in Table 5.5.3.11.2-1			
MIME body part		**Signature**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcptt-signed+xml"		TS 24.379 [9]	
MIME-part-body	Signatures for XML MIME bodies as described in Table 5.5.13.1-2		TS 24.379 [9]	

5.5.2.9   SIP OPTIONS

Editor's note: It shall be specified who is sending the message.

Table 5.5.2.9-1: SIP OPTIONS

Derivation Path: TS 24.229 [16] clause A.2.1.4.9, A2.2.4.9				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
Method	"OPTIONS"			
Request-Disposition	px_MCPTT_Client_A_ID			
	px_MCVideo_Client_A_ID			MCVIDEO
	px_MCData_Client_A_ID			MCDATA
SIP-Version	"SIP/2.0"			
Via			RFC 3261 [22] RFC 3581 [55]	
sent-protocol	"SIP/2.0/UDP"			
sent-by	any allowed value	IP address or FQDN and protected server port of the UE		
via-branch	any allowed value	Value starting with 'z9hG4bK'		
From			RFC 3261 [22]	
addr-spec	px_MCPTT_Client_A_ID			
	px_MCVideo_Client_A_ID			MCVIDEO
	px_MCData_Client_A_ID			MCDATA
tag	"1"			
To			RFC 3261 [22] RFC 5031 [54]	
addr-spec	tsc_MCPTT_PublicServiceId_A			
	tsc_MCVideo_PublicServiceId_A			MCVIDEO
	tsc_MCData_PublicServiceId_A			MCDATA
Call-ID			RFC 3261 [22]	
Callid	same value as in the INVITE			
CSeq			RFC 3261 [22]	
value	value of CSeq sent by the SS within its previous request in the same dialog but increased by one			
Method	"INFO"			
Contact			RFC 3261 [22 RFC 3840 [33]	
addr-spec	SIP URI			
user-info and host	IP address or FQDN (px_MCPTT_Client_A_ID)			
	IP address or FQDN (px_MCVideo_Client_A_ID)			MCVIDEO
	IP address or FQDN (px_MCData_Client_A_ID)			MCDATA
feature-param	"+g.3gpp.mcptt"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Push To Talk (MCPTT) communication.		

	"+g.3gpp.mcvideo"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Video (MCVideo) communication.		MCVIDEO
	"+g.3gpp.mcdata.sds"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Data (MCData) communication.		MCDATA
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"	This URN indicates that the device has the capabilities to support the mission critical push to talk (MCPTT) service.		
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo"	This URN indicates that the device has the capabilities to support the mission critical video (MCVideo) service.		MCVIDEO
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"	This URN indicates that the device has the capabilities to support the mission critical data (MCData) service.		MCDATA
feature-param	"audio"	This feature tag indicates that the device supports audio as a streaming media type.		MCPTT OR MCVIDEO
feature-param	"video"	This feature tag indicates that the device supports video as a streaming media type.		MCVIDEO
feature-param	"text"	This feature tag indicates that the device supports text as a streaming media type.		MCDATA
Accept				
media-range	"application/sdp"			
Max-Forwards			RFC 3261 [22]	
value	any allowed value	Non-zero value		
Content-Length			RFC 3261 [22]	
value	"0"	No message body included - end of SIP message		

Editor's note: Table 5.5.2.9-1 needs to be reviewed

5.5.2.10 SIP PRACK

5.5.2.10.1 SIP PRACK from the UE

Table 5.5.2.10.1-1: SIP PRACK from the UE

Derivation Path: TS 24.229 [16] clause A.2.1.4.10, A2.2.4.10				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line			RFC 3261 [22]	
Method	"PRACK"			
Request-URI	same URI as the SS has sent earlier in the Contact header of a response within the same dialog			
SIP-Version	"SIP/2.0"			
Via			RFC 3261 [22]	
sent-protocol	"SIP/2.0/UDP"			UDP
	"SIP/2.0/TCP"			TCP
sent-by	same value as in INVITE message			
via-branch	Value starting with 'z9hG4bK'			
Route			RFC 3261 [22]	
route-param list	URIs of the Record-Route header sent to the UE in the response which has established the dialog, in reverse order			
From			RFC 3261 [22]	
addr-spec	same value as in the INVITE message	Local URI of the dialog (from the UE's point of view)		
tag	same value as in the INVITE	Local tag of the dialog ID (from the UE's point of view)		
To			RFC 3261 [22]	
addr-spec	same value as in the INVITE	Remote URI of the dialog (from the UE's point of view)		
tag	same tag as in the To-header of the response which has established the dialog	Remote tag of the dialog ID (from the UE's point of view)		
Call-ID			RFC 3261 [22]	
callid	same value as in INVITE message			
CSeq			RFC 3261 [22]	
value	value of CSeq sent by the endpoint within its previous request in the same dialog but increased by one			
method	"PRACK"			
Max-Forwards			RFC 3261 [22]	
value	any allowed value	Non-zero value		
RAck			RFC 3261 [22]	
response-num	same value as in RSeq header of the reliable response			
cseq-num	same value as in CSeq of reliable response			
method	same value as in CSeq of reliable response			
P-Access-Network-Info			RFC 7315 [52]	
access-net-spec	Access network technology and, if applicable, the cell ID			
Content-Length	if present		RFC 3261 [22]	
value	"0"	No message body included		

5.5.2.10.2 SIP PRACK from the SS

Table 5.5.2.10.2-1: SIP PRACK from the SS

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.229 [16] clause A.2.1.4.10, A2.2.4.10				
Status-Line			RFC 3261 [22]	
Method	"PRACK"			
Request-URI	same URI as the UE has sent earlier in the Contact header of a response within the same dialog	Contact URI of the UE ("callee")		
SIP-Version	"SIP/2.0"			
Via	same as in the INVITE but with updated via-branches	see Table 5.5.2.5.2-1	RFC 3261 [22]	
From			RFC 3261 [22]	
addr-spec	same URI as in the From-header of the INVITE	remote URI of the dialog (from the UE's point of view)		
tag	same tag as in the From-header of the INVITE	remote tag of the dialog (from the UE's point of view)		
To			RFC 3261 [22]	
addr-spec	same URI as in the To-header of the INVITE	local URI of the dialog (from the UE's point of view)		
tag	same tag as in the To-header of the response which has established the dialog	local tag of the dialog (from the UE's point of view)		
Call-ID			RFC 3261 [22]	
callid	Same value as in INVITE	Call-Id of the dialog		
CSeq			RFC 3261 [22]	
value	value of CSeq sent by the endpoint within its previous request in the same dialog but increased by one			
method	"PRACK"			
Max-Forwards			RFC 3261 [22]	
value	"68"	The recommended initial value is 70 in RFC 3261. Assuming 2 hops as according to the Via header this results in a value of 68 in the message sent to the UE		
RAck			RFC 3261 [22]	
response-num	same value as in RSeq header of the reliable response			
cseq-num	same value as in CSeq of reliable response			
method	same value as in CSeq of reliable response			
Content-Length			RFC 3261 [22]	
value	"0"	No message body included		

5.5.2.11 SIP PUBLISH

This message is sent by the UE.

Table 5.5.2.11-1: SIP PUBLISH

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.229 [16] clause A.2.1.4.10A, A.2.2.4.10A				
Request-Line			RFC 3261 [22] RFC 5031 [54]	
Method	"PUBLISH"			
Request-URI	tsc_MCPTT_PublicServiceId_A	The public service identity identifying the originating participating MCPTT function serving the MCPTT user		MCPTT
	tsc_MCVideo_PublicServiceId_A	The public service identity identifying the originating participating MCVideo function serving the MCVideo user		MCVIDEO
	tsc_MCData_PublicServiceId_A	The public service identity identifying the originating participating MCData function serving the MCData user		MCDATA
SIP-Version	"SIP/2.0"			
Route			RFC 3261 [22]	
addr-spec[1]	SIP URI			
user-info and host	P-CSCF address of the SS	P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery		
port	protected server port of the SS	as assigned during registration		
uri-parameters	"lr"			
addr-spec[2]	SIP URI			
user-info and host	"scscf.3gpp.org"			
port	not present			
uri-parameters	"lr"			
Via			RFC 3261 [22] RFC 3581 [55]	
sent-protocol	"SIP/2.0/UDP"			UDP
	"SIP/2.0/TCP"			TCP
sent-by				
user-info and host	IP address or FQDN	Either the UE's IP address or its home domain name		
port	protected server port of the UE	as assigned during registration		
via-branch	Value starting with 'z9hG4bK'			
From			RFC 3261 [22]	
addr-spec				
user-info and host	Default public user id (px_MCX_SIP_PublicUserId_A_1)			
port	not present			
tag	any value			
To			RFC 3261 [22] RFC 5031 [54]	
addr-spec				
user-info and host	same URI as used as Request URI			
port	not present			
tag	not present			
Expires			RFC 3261 [22] RFC 3903 [43]	
delta-seconds	"4294967295"			

Derivation Path: TS 24.229 [16] clause A.2.1.4.10A, A.2.2.4.10A				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Require			RFC 3261 [22] RFC 3329 [53]	
option-tag	"sec-agree"			
Proxy-Require			RFC 3261 [22] RFC 3329 [53]	
option-tag	"sec-agree"			
Security-Verify			RFC 3329 [53]	
sec-mechanism	same value as Security-Server header sent by SS during registration			
Cseq			RFC 3261 [22]	
value	any allowed value			
method	"PUBLISH"			
Call-ID			RFC 3261 [22]	
callid	any allowed value			
Max-Forwards			RFC 3261 [22]	
value	any allowed value			
P-Access-Network-Info			RFC 7315 [52] RFC 7913 [51]	
access-net-spec	Access network technology and, if applicable, the cell ID			
Event			RFC 3903 [43]	
event-type	"presence"			PRESENCE-EVENT
	"poc-settings"			POC-SETTINGS-EVENT
P-Preferred-Service			RFC 6050 [31]	
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcptt"		TS 24.379 [9] clause 7.2.1A	MCPTT
	"urn:urn-7:3gpp-service.ims.icsi.mcvideo"		TS 24.281 [86] clause 7.2.1A	MCVIDEO
	"urn:urn-7:3gpp-service.ims.icsi.mcdata"		TS 24.282 [87] clause 7.2.1A	MCDATA
Accept			RFC 3261 [22]	PRESENCE-EVENT
media-range	"application/pidf+xml"			
port	not present			
Content-Type			RFC 5621 [58]	
media-type	"multipart/mixed"			
Content-Length	present in case of TCP and when there is a message body (otherwise optional)length of message-body		RFC 3261 [22]	
value	any value			
Message-body			RFC 3261 [22]	
MIME body part		**MCPTT/MCVideo/MCData Info**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-info+xml"			MCPTT
	"application/vnd.3gpp.mcvideo-info+xml"			MCVIDEO
	"application/vnd.3gpp.mcdata-info+xml"			MCDATA

Derivation Path: TS 24.229 [16] clause A.2.1.4.10A, A.2.2.4.10A				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-ID	any value	Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	MCPTT-Info as described in Table 5.5.3.2.1-1		TS 24.379 [9] clause F.1	MCPTT
	MCVideo-Info as described in Table 5.5.3.2.1-2		TS 24.281 [86] clause F.1	MCVIDEO
	MCData-Info as described in Table 5.5.3.2.1-3		TS 24.282 [87] clause D.1	MCDATA
MIME body part		**PIDF**		PRESENCE-EVENT
MIME-part-headers				
Content-Type	"application/pidf+xml"			
MIME-part-body	PIDF as described in Table 5.5.3.5.1-1		TS 24.379 [9] clause 9.3.1	MCPTT
	PIDF as described in Table 5.5.3.5.1-2		TS 24.281 [86] clause 8.3.1	MCVIDEO
	PIDF as described in Table 5.5.3.5.1-3		TS 24.282 [87] clause 8.3.1	MCDATA
MIME body part		**MIKEY**		SERVICE_AUTH
MIME-part-headers				
Content-Type	"application/mikey"		RFC 3830 [24]	
MIME-part-body	MIKEY message as described in Table 5.5.9.1-1	MIKEY message, containing the CSK	TS 33.180 [94]	
MIME body part		**PoC-Settings**		POC-SETTINGS-EVENT
MIME-part-headers				
Content-Type	"application/poc-settings+xml"		RFC 4354 [103]	
Content-ID	any value	Unique URL identifying the PoC-settings XML MIME body; used as reference in the signature MIME body		
MIME-part-body	PoC Settings as described in Table 5.5.3.11.1-1		TS 24.379 [9]	
MIME body part		**Signature**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-signed+xml"		TS 24.379 [9]	
MIME-part-body	Signatures for XML MIME bodies as described in Table 5.5.13.1-1		TS 24.379 [9]	

5.5.2.12   SIP REFER

This message is sent by the UE outside of a dialog.

Table 5.5.2.12-1: SIP REFER

Derivation Path: TS 24.229 [16] clause A.2.1.4.11, A.2.2.4.11				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line			RFC 3261 [22] RFC 5031 [54]	
Method	"REFER"			
Request-URI	tsc_MCX_SessionID_B	session identity of the pre-established session		
SIP-Version	"SIP/2.0"			
Via			RFC 3261 [22] RFC 3581 [55]	
sent-protocol	"SIP/2.0/UDP"			UDP
	"SIP/2.0/TCP"			TCP
sent-by				
host	IP address or FQDN	Either the UE's IP address or its home domain name		
port	protected server port of the UE			
via-branch	Value starting with 'z9hG4bK'			
Route			RFC 3261 [22]	
addr-spec[1]	SIP URI			
user-info and host	P-CSCF address of the SS	P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery		
port	protected server port of the SS	as assigned during registration		
uri-parameters	"lr"			
addr-spec[2]	SIP URI			
user-info and host	"scscf.3gpp.org"			
port	not present			
uri-parameters	"lr"			
From			RFC 3261 [22]	
addr-spec				
user-info and host	Default public user id (px_MCX_SIP_PublicUserId_A_1)			
port	not present			
tag	any allowed value			
To			RFC 3261 [22] RFC 5031 [54]	
addr-spec				
user-info and host	Same URI as used in the INVITE creating the pre-established session			
port	not present			
tag	not present			
Call-ID			RFC 3261 [22]	
callid	any allowed value			
CSeq			RFC 3261 [22]	
value	any allowed value			
method	"REFER"			
Supported			RFC 3261 [22] RFC 6442 [62] RFC 4488 [36]	
option-tag	"norefersub"			
Refer-Sub			RFC 4488 [36]	
refer-sub-value	"false"			
Target-Dialog			RFC 4538 [37]	
callid	Callid of the pre-established session	Callid as used by the UE in the INVITE for establishment of the pre-established session		

Derivation Path: TS 24.229 [16] clause A.2.1.4.11, A.2.2.4.11				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Require			RFC 3261 [22] RFC 3312 [56] RFC 3329 [53]	
option-tag	"sec-agree"			
option-tag	"multiple-refer"			
Proxy-Require			RFC 3261 [22] RFC 3329 [53]	
option-tag	"sec-agree"			
Security-Verify			RFC 3329 [53]	
sec-mechanism	same value as Security-Server header sent by SS during registration			
Contact			RFC 3261 [22 RFC 3840 [33]	
addr-spec	SIP URI			
user-info and host	IP address or FQDN			
feature-param	"+g.3gpp.mcptt"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Push To Talk (MCPTT) communication.		MCPTT
	"+g.3gpp.mcvideo"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Video (MCVideo) communication.		MCVIDEO
	"+g.3gpp.mcdata.sds"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Data (MCData) communication.		MCDATA
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"	This URN indicates that the device has the capabilities to support the mission critical push to talk (MCPTT) service.		MCPTT
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo"	This URN indicates that the device has the capabilities to support the mission critical video (MCVideo) service.		MCVIDEO
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"	This URN indicates that the device has the capabilities to support the mission critical data (MCData) service.		MCDATA

Derivation Path: TS 24.229 [16] clause A.2.1.4.11, A.2.2.4.11				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
feature-param	"audio"	This feature tag indicates that the device supports audio as a streaming media type.		MCPTT OR MCVIDEO
feature-param	"video"	This feature tag indicates that the device supports video as a streaming media type.		MCVIDEO
feature-param	"text"	This feature tag indicates that the device supports text as a streaming media type.		MCDATA
Refer-To			RFC 3515 [38]	
addr-spec	a Content-ID ("cid") Uniform Resource Locator (URL) as specified in IETF RFC 2392 that points to an application/resource-lists+xml MIME body as specified in IETF RFC 5366			
Refer-To			RFC 3515 [38]	METHOD-BYE
addr-spec				
user-info and host	tsc_MCX_SessionID_B	The session identity of the pre-established session to leave.		
uri-parameters				
id[1]	method			
value[1]	"BYE"			
Max-Forwards			RFC 3261 [22]	
value	any allowed value	Non-zero value		
P-Access-Network-Info			RFC 7315 [52]	
access-net-specs	Access network technology and, if applicable, the cell ID			
P-Preferred-Service			RFC 6050 [31]	
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
	"urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"			MCDATA
P-Preferred-Identity	If present		RFC 3325 [32]	
PPreferredID-value	same URI as in From-header			
Resource-Priority			RFC 4412 [40] RFC 7134 [57] RFC 8101 [45] TS 24.379 [9] clause 6.2.8.1.15	EMERGENCY-CALL AND (GROUP-CALL OR PRIVATE-CALL)
r-value				

Derivation Path: TS 24.229 [16] clause A.2.1.4.11, A.2.2.4.11				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
namespace	value of the <resource-priority-namespace> element contained in the <emergency-resource-priority> element contained in the <OnNetwork> element of the MCX service configuration documents	As configured in Table 5.5.8.4-1 for MCPTT and in Table 5.5.8.8-1 for MCVIdeo	TS 24.484 [14]	
r-priority	value of the <resource-priority-priority> element contained in the <emergency-resource-priority> element contained in the <OnNetwork> element of the MCX service configuration document	As configured in Table 5.5.8.4-1 for MCPTT and in Table 5.5.8.8-1 for MCVIdeo	TS 24.484 [14]	
Resource-Priority			RFC 4412 [40] RFC 7134 [57] RFC 8101 [45] TS 24.379 [9] clause 6.2.8.1.15	IMMPERIL-CALL AND (GROUP-CALL OR PRIVATE-CALL)
r-value				
namespace	value of the <resource-priority-namespace> element contained in the <imminent-peril-resource-priority> element contained in the <OnNetwork> element of the MCX service configuration documents	As configured in Table 5.5.8.4-1 for MCPTT and in Table 5.5.8.8-1 for MCVIdeo	TS 24.484 [14]	
r-priority	value of the <resource-priority-priority> element contained in the <imminent-peril-resource-priority> element contained in the <OnNetwork> element of the MCX service configuration document	As configured in Table 5.5.8.4-1 for MCPTT and in Table 5.5.8.8-1 for MCVIdeo	TS 24.484 [14]	
Content-Type	not present			METHOD-BYE
Content-Type			RFC 5621 [58]	
media-type	"multipart/mixed"			
Content-Length	present in case of TCP and when there is a message body (otherwise optional)		RFC 3261 [22]	
Value	any value	length of message-body		
Message-body	not present			METHOD-BYE
Message-body			RFC 3261 [22]	
MIME body part		**Resource list**	RFC 5366 [35]	
MIME-part-headers				
Content-Type	"application/resource-lists+xml"			

Derivation Path: TS 24.229 [16] clause A.2.1.4.11, A.2.2.4.11				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-ID	same value as the cid URL in the Refer-To header field	Unique URL identifying the Resource-lists XML MIME body; used as reference in the signature MIME body too	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	Resource-lists as described in Table 5.5.3.3.1-1 with condition PRE-ESTABLISH and the uri attribute of the single \<entry\> element extended with the headers of Table 5.5.2.12-2			MCPTT
	Resource-lists as described in Table 5.5.3.3.1-2			MCVIDEO
	Resource-lists as described in Table 5.5.3.3.1-3			MCDATA
MIME body part		**Location info**		LOCATION-INFO
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcptt-location-info+xml"			MCPTT
	"application/vnd.3gpp. mcvideo-location-info+xml"			MCVIDEO
Content-ID	any value	Unique URL identifying the Location-info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	Location-info as described in Table 5.5.3.4.1-1		TS 24.379 [9] clause F.3	MCPTT
	Location-info as described in Table 5.5.3.4.1-2		TS 24.281 [86] clause F.3	MCVIDEO
MIME body part		**Signature**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcptt-signed+xml"		TS 24.379 [9]	
MIME-part-body	Signatures for XML MIME bodies as described in Table 5.5.13.1-1		TS 24.379 [9]	

Table 5.5.2.12-2: SIP header fields extending the uri attribute of the resource-lists' single entry

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.379 [9] clause 10.1.1.2.2.1, 10.1.2.2.2.1, 11.1.1.2.2.1, 11.1.6.2.2.1 Editor's note: references for MCVIDEO and MCDATA to be added				
Accept-Contact			RFC 3841 [29]	GROUP-CALL OR CHAT-GROUP-CALL
ac-value[1]				
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"			MCDATA
req-param	"require"			
explicit-param	"explicit"			
ac-value[2]				
feature-param	"+g.3gpp.mcptt"			MCPTT
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata.sds"			MCDATA
req-param	"require"			
explicit-param	"explicit"			
Answer-Mode	not present			
Answer-Mode			RFC 5373 [34] TS 24.379 [9] cl. 11.1.1.2.2.1, 8)	PRIVATE-CALL AND (NOT FORCE)
answer-mode-value	"Auto"			
answer-mode-value	"Manual"			MANUAL
Priv-Answer-Mode	not present			
Priv-Answer-Mode			RFC 5373 [34] TS 24.379 [9] clause 11.1.1.2.2.1, 8) and clause 11.1.6.2.2.1, 8)	PRIVATE-CALL AND FORCE
answer-mode-value	"Auto"	if force of automatic commencement mode at the invited MCPTT client is requested by the MCPTT user,		
Content-Type			RFC 5621 [58]	
media-type	"multipart/mixed"			
body		NOTE: Characters that are not formatted as ASCII characters are escaped in the following parameters in the headers portion of the SIP URI.	RFC 3261 [22]	
MIME body part		**MCPTT/MCVideo/MCData Info**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-info+xml"			MCPTT
	"application/vnd.3gpp.mcvideo-info+xml"			MCVIDEO
	"application/vnd.3gpp.mcdata-info+xml"			MCDATA

Derivation Path: TS 24.379 [9] clause 10.1.1.2.2.1, 10.1.2.2.2.1, 11.1.1.2.2.1, 11.1.6.2.2.1				
Editor's note: references for MCVIDEO and MCDATA to be added				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-ID	any value	Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	MCPTT-Info as described in Table 5.5.3.2.1-1		TS 24.379 [9] clause F.1	MCPTT
	MCVideo-Info as described in Table 5.5.3.2.1-2		TS 24.281 [86] clause F.1	MCVIDEO
	MCData-Info as described in Table 5.5.3.2.1-3		TS 24.282 [87] clause D.1	MCDATA
MIME body part		**Location info**		(MCPTT OR MCVIDEO) AND ALLOW-LOCATION-INFO
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			MCPTT
	"application/vnd.3gpp.mcvideo-location-info+xml"			MCVIDEO
Content-ID	any value	Unique URL identifying the Location-info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	Location-info as described in Table 5.5.3.4.1-1		TS 24.379 [9] clause F.3	MCPTT
	Location-info as described in Table 5.5.3.4.1-2		TS 24.281 [86] clause F.3	MCVIDEO
MIME body part		**Signature**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-signed+xml"		TS 24.379 [9]	
MIME-part-body	Signatures for XML MIME bodies as described in Table 5.5.13.1-1		TS 24.379 [9]	

Condition	Explanation
MANUAL	Call establishment with manual commencement mode
FORCE	force of automatic commencement mode at the invited MCPTT client is requested by the MCPTT user
ALLOW-LOCATION-INFO	Implicit floor control is requested AND <allow-location-info-when-talking> element of the <ruleset> element of the MCPTT user profile document set to "true" in TS 36.579-1 [2] Table 5.5.8.3-1
For further conditions see table 5.5.1-1	

5.5.2.13   SIP REGISTER

This message is sent by the UE.

Table 5.5.2.13-1: SIP REGISTER

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.229 [16] clause A.2.1.4.12, A.2.2.4.12				
Request-Line			RFC 3261 [22]	
Method	"REGISTER"			
Request-URI	SIP URI of the home domain name (px_MCX_SIP_HomeDomain_A) if available at the UE or derived from the IMSI otherwise	Depending on the UE configuration the UE may know the home domain name of the SIP core (e.g. when there is an ISIM) or the UE needs to derive it from the IMSI as according to 23.003 [69] clause 13.2 (e.g. when there is a USIM only)		
SIP-Version	"SIP/2.0"			
Route	Not present		RFC 3261 [22]	
Via			RFC 3261 [22] RFC 3581 [55]	
sent-protocol	"SIP/2.0/UDP"	UE uses UDP for registration		UDP
	"SIP/2.0/TCP	UE uses TCP for registration		TCP
sent-by				
host	IP address or FQDN			
port	any value if present			SIP_REGISTER_INITIAL
	any value if present			TCP
	protected server port of the UE when using UDP			UDP
via-branch	Value starting with 'z9hG4bK'			
From			RFC 3261 [22]	
addr-spec				
user-info and host	same value as in the initial REGISTER			
	Default public user id (px_MCX_SIP_PublicUserId_A_1) if available at the UE or derived from the IMSI otherwise	Depending on the UE configuration the UE may know the default public user id (e.g. when there is an ISIM) or the UE needs to derive it from the IMSI as according to 23.003 [69] clause 13.4B (e.g. when there is a USIM only)		SIP_REGISTER_INITIAL
port	not present			
tag	any value			
To				
addr-spec	same value as in From-header			
tag	Not present			
Contact			RFC 3261 [22]	
addr-spec	SIP URI			
user-info and host	IP address or FQDN			
port	any value if present			SIP_REGISTER_INITIAL
	protected server port of the UE			
feature-param	"+g.3gpp.mcptt"			MCPTT

	"+g.3gpp.mcvideo"	This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Video (MCVideo) communication.		MCVIDEO
feature-param	g.3gpp.mcdata.sds	SDS is supported	TS 24.282 [87] clause 7.2.1	MCDATA AND pc_MCData_SDS
feature-param	g.3gpp.mcdata.fd	FD is supported	TS 24.282 [87] clause 7.2.1	MCDATA AND pc_MCData_FD
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo"	This URN indicates that the device has the capabilities to support the mission critical video (MCVideo) service.		MCVIDEO
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata"	This URN indicates that the device has the capabilities to support the mission critical data (MCData) service.		MCDATA
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"	SDS is supported	TS 24.282 [87] clause 7.2.1	MCDATA AND pc_MCData_SDS
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd"	FD is supported	TS 24.282 [87] clause 7.2.1	MCDATA AND pc_MCData_FD
feature-param	"audio"			MCPTT OR MCVIDEO
feature-param	"video"	This feature tag indicates that the device supports video as a streaming media type.		MCVIDEO
feature-param	"text"	This feature tag indicates that the device supports text as a streaming media type.		MCDATA
feature-param	"expires=600000" if present			
Expires	Present if no expires parameter in Contact header		RFC 3261 [22] RFC 3903 [43]	
value	"600000"			
Require			RFC 3261 [22] RFC 3329 [53]	
option-tag	"sec-agree"			
Proxy-Require			RFC 3261 [22] RFC 3329 [53]	
option-tag	"sec-agree"			
Supported			RFC 3261 [22] RFC 6442 [62] RFC 4488 [36]	

option-tag	"path"			
option-tag	"timer"			
Cseq			RFC 3261 [22]	
value	any allowed value			SIP_REGISTER_INITIAL
	value sent by the UE in previous REGISTER incremented by one			
method	"REGISTER"			
Call-ID			RFC 3261 [22]	
callid	any value			
Security-Client			RFC 7315 [52]	
mechanism-name	"ipsec-3gpp"			
algorithm	"hmac-sha-1-96"			
protocol	"esp" (if present)			
mode	"trans" (if present)			
encrypt-algorithm	"des-ede3-cbc" or "aes-cbc"			
spi-c	SPI number of the inbound SA at the protected client port			
spi-s	SPI number of the inbound SA at the protected server port			
port-c	protected client port			
port-s	protected server port			
Security-Verify	Not present		RFC 3329 [53]	SIP_REGISTER_INITIAL
Security-Verify			RFC 3329 [53]	
sec-mechanism	same value as Security Server header sent by SS			
Authorization			RFC 2617 [72], RFC 3310 [96]	SIP_REGISTER_INITIAL
username	Private user id (px_MCX_SIP_PrivateUserId_A) if available at the UE or derived from the IMSI otherwise	Depending on the UE configuration the UE may know the private public user id (e.g. when there is an ISIM) or the UE needs to derive it from the IMSI as according to 23.003 [69] clause 13.3 (e.g. when there is a USIM only)		
realm	same home domain name as used in Request-URI			
nonce	""	Empty string		
digest-uri	same SIP-URI as used as Request-URI			
opaque	any value if present			
qop	any value if present			
cnonce	any value if present			
nc	any value if present			
algorithm	any value if present			
response	""	Empty string		
Authorization			RFC 2617 [72], RFC 3310 [96]	
username	same value as for condition SIP_REGISTER_INITIAL			

realm	same value as received in the realm directive in the WWW Authenticate header sent by SS			
nonce	same value as in WWW-Authenticate header sent by SS			
digest-uri	same SIP-URI as used as Request-URI			
opaque	same value as sent by the server in "401 Unauthorized for REGISTER"			
qop	"auth"			
cnonce	any value	value assigned by UE affecting the response calculation		
nc	nonce-count value	counter to indicate how many times the UE has sent the same value of nonce within successive REGISTERs, initial value shall be 1		
algorithm	"AKAv1-MD5"			
response	Digest response	calculated by the client according to RFC 2617		
Max-Forwards			RFC 3261 [22]	
value	any allowed value	Non-zero value		
P-Access-Network-Info			RFC 7315 [52]	
access-net-specs	Access network technology and, if applicable, the cell ID			
Content-Type			RFC 5621 [58]	SERVICE_AUTH
media-type	"multipart/mixed"			
Content-Length	present in case of TCP and when there is a message body (otherwise optional)		RFC 3261 [22]	
value	any value	length of the message body		
Message-body			RFC 3261 [22]	SERVICE_AUTH
MIME body part		**MCPTT/MCVideo/MCData Info**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-info+xml"			MCPTT
	"application/vnd.3gpp.mcvideo-info+xml"			MCVIDEO
	"application/vnd.3gpp.mcdata-info+xml"			MCDATA
Content-ID	any value	Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	MCPTT-Info as described in Table 5.5.3.2.1-1		TS 24.379 [9] clause F.1	MCPTT
	MCVideo-Info as described in Table 5.5.3.2.1-2		TS 24.281 [86] clause F.1	MCVIDEO

	MCData-Info as described in Table 5.5.3.2.1-3		TS 24.282 [87] clause D.1	MCDATA
MIME body part		**MIKEY**		
MIME-part-headers				
Content-Type	"application/mikey"		RFC 3830 [24]	
MIME-part-body	MIKEY message as described in Table 5.5.9.1-1	MIKEY message, containing the CSK	TS 33.180 [94]	
MIME body part		**Signature**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcptt-signed+xml"		TS 24.379 [9]	
MIME-part-body	Signatures for XML MIME bodies as described in Table 5.5.13.1-1		TS 24.379 [9]	

Condition	Explanation
SIP_REGISTER_INITIAL	Initial unprotected REGISTER
For further conditions see table 5.5.1-1	

5.5.2.14   SIP SUBSCRIBE

This message is sent by the UE.

Table 5.5.2.14-1: SIP SUBSCRIBE

Derivation Path: TS 24.229 [16] clause A.2.1.4.13, A.2.2.4.13				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line			RFC 3261 [22] RFC 5031 [54]	
Method	"SUBSCRIBE"			
Request-URI	tsc_MCPTT_PublicSer viceId_A	The public service identity identifying the originating participating MCPTT function serving the MCPTT user		MCPTT
	tsc_MCVideo_PublicSe rviceId_A	The public service identity identifying the originating participating MCVideo function serving the MCVideo user		MCVIDEO
	tsc_MCData_PublicSer viceId_A	The public service identity identifying the originating participating MCData function serving the MCData user		MCDATA
	"sip:" & tsc_MCX_CMS_Hostna me	SIP URI of the CMS's domain name: public service identity (PSI) for performing subscription proxy function of the CMS	TS 24.484 [14] clause 6.3.13. 2.2	CONFIG
	"sip:" & tsc_MCX_GMSURI	public service identity (PSI) for performing subscription proxy function of the GMS as configured in the <GMS-URI> element of the initial UE configuration	TS 24.481 [11] clause 6.3.13. 2.1	GROUPC ONFIG
	same URI as the SS has sent earlier in the Contact header of a message within the same dialog	Contact URI of the recipient of the previous 200 OK		re_SUBSC RIBE
SIP-Version	"SIP/2.0"			
Route			RFC 3261 [22]	
addr-spec[1]	SIP URI			
user-info and host	P-CSCF address of the SS	P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery		
port	protected server port of the SS	as assigned during registration		
uri-parameters	"lr"			
addr-spec[2]	SIP URI			
user-info and host	"scscf.3gpp.org"			
port	not present			
uri-parameters	"lr"			
Route			RFC 3261 [22]	re_SUBSC RIBE
route-param list	URIs of the Record-Route header sent to the UE in the response which has established the dialog, in reverse order			
Via			RFC 3261 [22] RFC 3581 [55]	
sent-protocol	"SIP/2.0/UDP"			UDP

ETSI

Derivation Path: TS 24.229 [16] clause A.2.1.4.13, A.2.2.4.13				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	"SIP/2.0/TCP"			TCP
sent-by				
host	IP address or FQDN	Either the UE's IP address or its home domain name		
port	protected server port of the UE	as assigned during registration		
via-branch	value starting with 'z9hG4bK'			
From			RFC 3261 [22]	
addr-spec				
user-info and host	Default public user id (px_MCX_SIP_PublicUserId_A_1)			
port	not present			
tag	any value			
From			RFC 3261 [22]	re_SUBSCRIBE
addr-spec	Same URI of the UE as used earlier in the dialog	Local URI of the dialog (from the UE's point of view)		
tag	Same tag of the UE as used earlier in the dialog	Local tag of the dialog ID (from the UE's point of view)		
To			RFC 3261 [22] RFC 5031 [54]	
addr-spec				
user-info and host	same URI as used as Request URI			
port	not present			
tag	not present			
To			RFC 3261 [22]	re_SUBSCRIBE
addr-spec	Same URI of the SS as used earlier in the dialogURI	Remote URI of the dialog (from the UE's point of view)		
tag	Same tag of the SS as used earlier in the dialog	Remote tag of the dialog ID (from the UE's point of view)		
Contact			RFC 3261 [22]	
addr-spec	SIP URI			
user-info and host	IP address or FQDN			
port	protected server port of UE	as assigned during registration		
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"	Mandatory media feature tag according to TS 24.481 [11] clause 6.3.13.2.1 and TS 24.484 [14] clause 6.3.13.2.2		CONFIG OR GROUPCONFIG
feature-param	any (further) feature tags if present	In addition to mandatory feature tags (if any) the UE may provide further feature tags which are not checked		
Expires			RFC 3261 [22] RFC 3903 [43]	
value	any value			
Require			RFC 3261 [22] RFC 3329 [53]	
option-tag	"sec-agree"			
Proxy-Require			RFC 3261 [22] RFC 3329 [53]	
option-tag	"sec-agree"			

Derivation Path: TS 24.229 [16] clause A.2.1.4.13, A.2.2.4.13				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Security-Verify			RFC 3329 [53]	
sec-mechanism	same value as Security-Server header sent by SS during registration			
Cseq			RFC 3261 [22]	
value	any allowed value			
	value of CSeq sent by the endpoint within its previous request in the same dialog but increased by one			re_SUBSCRIBE
method	"SUBSCRIBE"			
Call-ID			RFC 3261 [22]	
callid	any allowed value			
	same value as in SUBSCRIBE creating the dialog			re_SUBSCRIBE
Max-Forwards			RFC 3261 [22]	
value	any allowed value	Non-zero value		
P-Access-Network-Info			RFC 7315 [52] RFC 7913 [51]	
access-net-spec	Access network technology and, if applicable, the cell ID	Access network technology and, if applicable, the cell ID		
Event			RFC 6665 [39]	
event-type	"presence"			
	"xcap-diff"			CONFIG GROUPCONFIG
	"poc-settings"			POC-SETTINGS-EVENT
Accept			RFC 3261 [22]	
media-range	"application/pidf+xml"			
	"application/xcap-diff+xml"			CONFIG, GROUPCONFIG
	"application/poc-settings+xml"			POC-SETTINGS-EVENT
P-Preferred-Service			RFC 6050 [31]	
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT OR CONFIG OR GROUPCONFIG
	"urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
	"urn:urn-7:3gpp-service.ims.icsi.mcdata"			MCDATA
Content-Type			RFC 5621 [58]	
media-type	"multipart/mixed"			
Content-Length	present in case of TCP and when there is a message body (otherwise optional)		RFC 3261 [22]	
value	any value	length of message-body		
Message-body			RFC 3261 [22]	
MIME body part		**MCPTT/MCVideo/MCData Info**		

Derivation Path: TS 24.229 [16] clause A.2.1.4.13, A.2.2.4.13				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcptt-info+xml"			MCPTT OR CONFIG OR GROUPC ONFIG
	"application/vnd.3gpp. mcvideo-info+xml"			MCVIDEO
	"application/vnd.3gpp. mcdata-info+xml"			MCDATA
Content-ID	any value	Unique URL identifying the MCPTT/MCVideo/MCD ata Info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	MCPTT-Info as described in Table 5.5.3.2.1-1		TS 24.379 [9] clause F.1	MCPTT OR CONFIG OR GROUPC ONFIG
	MCVideo-Info as described in Table 5.5.3.2.1-2		TS 24.281 [86] clause F.1	MCVIDEO
	MCData-Info as described in Table 5.5.3.2.1-3		TS 24.282 [87] clause D.1	MCDATA
MIME body part		**SIMPLE-FILTER**		PRESENC E-EVENT
MIME-part-headers				
Content-Type	"application/simple-filter+xml"			
Content-ID	any value	Unique URL identifying the SIMPLE-FILTER XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	SIMPLE-FILTER as described in Table 5.5.3.6-1		TS 24.379 [9] clause 9.3.2 TS 24.281 [86] clause 8.3.2 TS 24.282 [87] clause 8.4.2	
MIME body part		**Resource-lists**		CONFIG, GROUPC ONFIG
MIME-part-headers				
Content-Type	"application/resource-lists+xml"			
Content-ID	any value	Unique URL identifying the Resource-lists XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	Resource-lists as described in Table 5.5.3.3.1A-1			
MIME body part		**MIKEY**	RFC 3830 [24]	CONFIG, GROUPC ONFIG
MIME-part-headers				
Content-Type	"application/mikey"			

Derivation Path: TS 24.229 [16] clause A.2.1.4.13, A.2.2.4.13				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MIME-part-body	MIKEY message as described in Table 5.5.9.1-1	MIKEY message, containing the CSK	TS 33.180 [94]	
MIME body part		**Signature**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcptt-signed+xml"		TS 24.379 [9]	
MIME-part-body	Signatures for XML MIME bodies as described in Table 5.5.13.1-1		TS 24.379 [9]	

Condition	**Explanation**
re_SUBSCRIBE	SUBSCRIBE within a dialog
For further conditions see table 5.5.1-1	

5.5.2.15   SIP UPDATE

5.5.2.15.1   SIP UPDATE from the UE

Table 5.5.2.15.1-1: SIP UPDATE from the UE

Derivation Path: TS 24.229 [16] A.2.1.4.14, A.2.2.4.14				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line			RFC 3261 [22] RFC 5031 [54]	
Method	"UPDATE"			
Request-URI	The same URI value as the recipient of UPDATE has earlier sent in its Contact header within the same dialog			
SIP-Version	'SIP/2.0"			
Via			RFC 3261 [22] RFC 3581 [55]	
sent-protocol	"SIP/2.0/UDP"			
	"SIP/2.0/TCP"			TCP
sent-by	same value as in INVITE message			MO_CALL
sent-by				MT_CALL
host	IP address or FQDN	Either the UE's IP address or its home domain name		
port	protected server port of the UE	as assigned during registration		
via-branch	Value starting with 'z9hG4bK'			
Route			RFC 3261 [22]	
route-param list	URIs of the Record-Route header sent to the UE in the response which has established the dialog, in reverse order			MO_CALL
	URIs of the Record-Route header sent to the UE in the INVITE			MT_CALL
From			RFC 3261 [22]	
addr-spec	Same URI of the UE as used earlier in the dialog	Local URI of the dialog (from the UE's point of view)		
tag	Same tag of the UE as used earlier in the dialog	Local tag of the dialog ID (from the UE's point of view)		
To			RFC 3261 [22] RFC 5031 [54]	
addr-spec	Same URI of the SS as used earlier in the dialog	Remote URI of the dialog (from the UE's point of view)		
tag	Same tag of the SS as used earlier in the dialog	Remote tag of the dialog ID (from the UE's point of view)		
Call-ID			RFC 3261 [22]	
callid	Same value as used in the INVITE initiating the dialog			
Contact	Contact header with the same Contact URI and the same mandatory feature parameters as in the INVITE creating the dialog		RFC 3261 [22]	MO_CALL

				MT_CALL
	Contact header with the same Contact URI and the same mandatory feature parameters as in the response for the INVITE creating the dialog			
CSeq			RFC 3261 [22]	
value	value of CSeq sent by the UE within its previous request in the same dialog but increased by one			
method	"UPDATE"			
Require			RFC 3261 [22] RFC 3329 [53]	
option-tag	"sec-agree"			
Proxy-Require			RFC 3261 [22] RFC 3329 [53]	
option-tag	"sec-agree"			
Security-Verify			RFC 3329 [53]	
sec-mechanism	same value as Security -Server header sent by SS during registration			
Max-Forwards			RFC 3261 [22]	
value	any allowed value	Non-zero value		
P-Access-Network-Info			RFC 7315 [52] RFC 7913 [51]	
access-net-spec	Access network technology and, if applicable, the cell ID			
Content-Type			RFC 5621 [58]	
media-type	"application/sdp"			
Content-Length	present in case of TCP and when there is a message body (otherwise optional)		RFC 3261 [22]	
value	any value	length of message-body		
Message-body			RFC 3261 [22]	
SDP Message	SDP Message as described in Table 5.5.3.1.1-1			
	SDP Message as described in Table 5.5.3.1.1-2			MCVIDEO
	SDP Message as described in Table 5.5.3.1.1-3			MCDATA

5.5.2.15.2   SIP UPDATE from the SS

Table 5.5.2.15.2-1: SIP UPDATE from the SS

Derivation Path: TS 24.229 [16] A.2.1.4.14, A.2.2.4.14				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line			RFC 3261 [22] RFC 5031 [54]	
Method	"UPDATE"			
Request-URI	same URI as the UE has sent earlier in the Contact header of a response within the same dialog	Contact URI of the UE ("callee")		
SIP-Version	'SIP/2.0"			
Via	same as specified for INVITE sent by the SS in Table 5.5.2.5.2-1		RFC 3261 [22] RFC 3581 [55]	MO_CALL
Via	same as in INVITE but with updated via-branches		RFC 3261 [22] RFC 3581 [55]	MT_CALL
From			RFC 3261 [22]	
addr-spec	Same URI of the SS as used earlier in the dialog	Remote URI of the dialog (from the UE's point of view)		
tag	Same tag of the SS as used earlier in the dialog	Remote tag of the dialog (from the UE's point of view)		
To			RFC 3261 [22] RFC 5031 [54]	
addr-spec	Same URI of the UE as used earlier in the dialog	Local URI of the dialog (from the UE's point of view)		
tag	Same tag of the UE as used earlier in the dialog	Local tag of the dialog (from the UE's point of view)		
Call-ID			RFC 3261 [22]	
callid	Same value as used in the INVITE initiating the dialog			
Contact	same as in the response for the INVITE creating the dialog		RFC 3261 [22]	MO_CALL
	same as in the INVITE creating the dialog			MT_CALL
CSeq			RFC 3261 [22]	
value	value of CSeq sent by the endpoint within its previous request in the same dialog but increased by one			
method	"UPDATE"			
Max-Forwards			RFC 3261 [22]	
value	"68"	The recommended initial value is 70 in RFC 3261 [22]. Assuming 2 hops as according to the Via header this results in a value of 68 in the message sent to the UE.		
Content-Type			RFC 5621 [58]	
media-type	"application/sdp"			
Content-Length	length of message-body		RFC 3261 [22]	
value	length of message-body			
Message-body			RFC 3261 [22]	

SDP Message	SDP Message as described in Table 5.5.3.1.1-2			
	SDP Message as described in Table 5.5.3.1.2-2			MCVIDEO
	SDP Message as described in Table 5.5.3.1.2-3			MCDATA

5.5.2.16   SIP 1xx

5.5.2.16.1   SIP 100 (Trying)

This message is sent by the UE or the SS.

Table 5.5.2.16.1-1: SIP 100 (Trying)

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"100"			
Reason-Phrase	"Trying"			
Via				
via-parm	same value as received in INVITE message			
From				
addr-spec	same value as received in INVITE message			
tag	same value as received in INVITE message			
To				
addr-spec	same value as received in INVITE message			
Call-ID				
callid	same value as received in INVITE message			
CSeq				
value	same value as received in INVITE message			
Content-Length	Optional in case of the message being sent by the UE			
value	"0"	No message body included - end of SIP message		

5.5.2.16.2   SIP 180 (Ringing)

5.5.2.16.2.1   SIP 180 (Ringing) from the UE

Table 5.5.2.16.2.1-1: SIP 180 (Ringing) from the UE

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"180"			
Reason-Phrase	"Ringing"			
Record-Route			RFC 3261 [22]	
rec-route	same as received in INVITE message			
Via	same as received in INVITE message		RFC 3261 [22] RFC 3581 [55]	
Require				100rel
option-tag	"100rel"			
From				
addr-spec	same value as received in INVITE message			
tag	same value as received in INVITE message			
To				
addr-spec	same value as received in INVITE message			
tag	same value as received in the INVITE message or any value if missing in the INVITE message.			
Contact				
addr-spec	SIP URI			
user-info and host	IP address or FQDN			
port	protected server port of UE	as assigned during registration		
feature-param	"+g.3gpp.mcptt"			MCPTT
	"+g.3gpp.mcvideo"			MCVIDEO
feature-param	"+g.3gpp.icsi-ref= urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
feature-param	"audio"			MCPTT OR MCVideo
feature-param	"video"			MCVIDEO
Supported				
option-tag	"norefersub"			
Rseq			RFC 3262 [97]	100rel
response-num	previous RSeq number sent in the same direction incremented by one			
Call-ID				
callid	same value as received in INVITE message			
CSeq				
value	same value as received in INVITE message			
Content-Length	if present			
value	"0"	No message body included		

Condition	Explanation
100rel	Reponse sent reliable according to RFC 3262 [97]

5.5.2.16.2.2   SIP 180 (Ringing) from the SS

Table 5.5.2.16.2.2-1: SIP 180 (Ringing) from the SS

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"180"			
Reason-Phrase	"Ringing"			
Record-Route	same as spefied for the SIP 200 (OK) from the SS in table 5.5.2.17.1.2-1 with condition INVITE-RSP		RFC 3261 [22]	
Via	same as received in the INVITE message		RFC 3261 [22] RFC 3581 [55]	
Require				100rel
option-tag	"100rel"			
From				
addr-spec	same value as in the request			
tag	same value as in the request			
To				
addr-spec	same value as in the request			
tag	same value as in the request or To-tag assigned by the SS if missing in the request			
Contact				
addr-spec				
user-info and host	tsc_MCPTT_SessionId			MCPTT
	tsc_MCVideo_SessionId			MCVIDEO
port	not present			
feature-param	"+g.3gpp.mcptt"			MCPTT
	"+g.3gpp.mcvideo"			MCVIDEO
feature-param	"+g.3gpp.icsi-ref= urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
feature-param	"audio"			MCPTT OR MCVIDEO
feature-param	"video"	This feature tag indicates that the device supports video as a streaming media type.		MCVIDEO
feature-param	"isfocus"			
Supported				
option-tag	"norefersub"			
Rseq			RFC 3262 [97]	100rel

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
response-num	previous RSeq number sent in the same direction incremented by one; arbitrarily selected if there is no previous RSeq number			
Call-ID				
callid	same value as received in INVITE message			
CSeq				
value	same value as received in INVITE message			
Content-Length				
value	"0"	No message body included		

Condition	**Explanation**
100rel	Reponse sent reliable according to RFC 3262 [97]

5.5.2.16.3 SIP 183 (Session Progress)

5.5.2.16.3.1 SIP 183 (Session Progress) from the UE

Table 5.5.2.16.3.1-1: SIP 183 (Session Progress) from the UE

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"183"			
Reason-Phrase	"Session progress"			
Record-Route			RFC 3261 [22]	
rec-route	same as received in INVITE message			
Via	same as received in INVITE message		RFC 3261 [22] RFC 3581 [55]	
Require				100rel
option-tag	"100rel"			
From				
addr-spec	same value as received in INVITE message			
tag	same value as received in INVITE message			
To				
addr-spec	same value as received in INVITE message			
tag	same value as received in the INVITE message or any value if missing in the INVITE message.			
Contact				
addr-spec	SIP URI			
user-info and host	IP address or FQDN			
port	protected server port of UE	as assigned during registration		
feature-param	"+g.3gpp.mcptt"			MCPTT
	"+g.3gpp.mcvideo"			MCVIDEO
feature-param	"+g.3gpp.icsi-ref= urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
feature-param	"audio"			MCPTT OR MCVideo
feature-param	"video"			MCVIDEO
Supported				
option-tag	"norefersub"			
Rseq				100rel
response-num	previous RSeq number sent in the same direction incremented by one			
Call-ID				
callid	same value as received in INVITE message			
CSeq				
value	same value as received in INVITE message			
P-Answer-State	if present			
value	"unconfirmed"			
Content-Length	if present		RFC 3261 [22]	
value	"0"	No message body included		

Condition	**Explanation**
100rel	Reponse sent reliable according to RFC 3262 [97]

5.5.2.16.3.2 SIP 183 (Session Progress) from the SS

Table 5.5.2.16.3.2-1: SIP 183 (Session Progress) from the SS

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"183"			
Reason-Phrase	"Session progress"			
Record-Route	same as specified for the SIP 200 (OK) from the SS in table 5.5.2.17.1.2-1 with condition INVITE-RSP		RFC 3261 [22]	
Via	same as received in the INVITE message		RFC 3261 [22] RFC 3581 [55]	
Require				100rel
option-tag	"100rel"			
From				
addr-spec	same value as in the request			
tag	same value as in the request			
To				
addr-spec	same value as in the request			
tag	same value as in the request or To-tag assigned by the SS if missing in the request			
Contact				
addr-spec				
user-info and host	tsc_MCPTT_SessionId			MCPTT
	tsc_MCVideo_SessionId			MCVIDEO

port	not present			
feature-param	"+g.3gpp.mcptt"			MCPTT
	"+g.3gpp.mcvideo"			MCVIDEO
feature-param	"+g.3gpp.icsi-ref= urn:urn-7:3gpp- service.ims.icsi.mcptt"			MCPTT
	"+g.3gpp.icsi- ref=urn:urn-7:3gpp- service.ims.icsi.mcvide o"			MCVIDEO
feature-param	"audio"			MCPTT OR MCVIDEO
feature-param	"video"	This feature tag indicates that the device supports video as a streaming media type.		MCVIDEO
feature-param	"isfocus"			
Supported				
option-tag	"norefersub"			
Rseq				100rel
response-num	previous RSeq number sent in the same direction incremented by one; arbitrarily selected if there is no previous RSeq number			
Call-ID				
callid	same value as received in INVITE message			
CSeq				
value	same value as received in INVITE message			
P-Answer-State				
value	"unconfirmed"			
P-Asserted-Identity			RFC 3325 [32]	
addr-spec				
user-info and host	tsc_MCPTT_PublicServ iceId_A			MCPTT
	tsc_MCVideo_PublicSe rviceId_A			MCVIDEO
port	not present			
Content-Length			RFC 3261 [22]	
value	"0"	No message body included		

Condition	Explanation
100rel	Response sent reliable according to RFC 3262 [97]

5.5.2.17 SIP 2xx

5.5.2.17.1 SIP 200 (OK)

5.5.2.17.1.1 SIP 200 (OK) from the UE

Table 5.5.2.17.1.1-1: SIP 200 (OK) from the UE

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"200"			
Reason-Phrase	"OK"			
Via	same as received in the request		RFC 3261 [22] RFC 3581 [55]	
Record-Route			RFC 3261 [22]	INVITE-RSP
rec-route	same as received in the request			
From				
addr-spec	Same value as received in the request			
tag	same value as received in the request			
To				
addr-spec	same value as received in the request			
tag	same value as received in the request or any value if missing in the request.			
Contact				INVITE-RSP
user-info and host	IP address or FQDN			
port	protected server port of UE	as assigned during registration		
feature-param	"+g.3gpp.mcptt"			MCPTT
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata.sds"		TS 24.282 [87] clause 9.2.3.2.4	MCDATA_SDS
	"+g.3gpp.mcdata.fd"		TS 24.282 [87] clause 10.2.5.2.4	MCDATA_FD
feature-param	"+g.3gpp.icsi-ref= urn:urn- 7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"		TS 24.282 [87] clause 9.2.3.2.4	MCDATA_SDS
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd"		TS 24.282 [87] clause 10.2.5.2.4	MCDATA_FD
feature-param	"audio"			MCPTT OR MCVideo
feature-param	"video"			MCVIDEO
feature-param	"text"			MCDATA
Call-ID				
callid	same value as received in the request			
CSeq				
value	same value as received in the request			
Require				INVITE-RSP
option-tag	"timer"			

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Session-Expires				INVITE-RSP
delta-seconds	Same value as session expires header in SIP INVITE		RFC 4028 [30] TS 24.229 [16] cl.5.1.4.1	
refresher	"uas"			
Content-Type			RFC 5621 [58]	INVITE-RSP
value	"multipart/mixed"			
Content-Length	present in case of TCP and when there is a message body (otherwise optional)		RFC 3261 [22]	
value	any value	length of message-body		
P-Answer-State	If present		RFC 4964 [118] TS 24.379 [9] clause 6.2.3.1.2	INVITE-RSP AND GROUP-CALL
answer-type	"confirmed"			
Message-body	not present		RFC 3261 [22]	
Message-body			RFC 3261 [22]	INVITE-RSP
MIME body part		**SDP message**		
MIME-part-header				
MIME-Content-Type	"application/sdp"		RFC 4566 [27]	
MIME-part-body	SDP message as described in Table 5.5.3.1.1-1			MCPTT
	SDP message as described in Table 5.5.3.1.1-2			MCVIDEO
	SDP message as described in Table 5.5.3.1.1-3			MCDATA
MIME body part		**MCPTT/MCVideo/MCData Info**		
MIME-part-header				
MIME-Content-Type	"application/vnd.3gpp.mcptt-info+xml"			MCPTT
	"application/vnd.3gpp.mcvideo-info+xml"			MCVIDEO
	"application/vnd.3gpp.mcdata-info+xml"			MCDATA
Content-ID	any value	Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body	TS 24.379 [9] clause 6.6.3.1	
MIME-part-body	MCPTT-Info as described in Table 5.5.3.2.1-1		TS 24.379 [9] clause F.1	MCPTT
	MCVideo-Info as described in Table 5.5.3.2.1-2		TS 24.281 [86] clause F.1	MCVIDEO
	MCData-Info as described in Table 5.5.3.2.1-3		TS 24.282 [87] clause D.1	MCDATA
MIME body part		**Signature**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-signed+xml"		TS 24.379 [9]	

ETSI

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MIME-part-body	Signatures for XML MIME bodies as described in Table 5.5.13.1-1		TS 24.379 [9]	

Condition	**Explanation**
INVITE-RSP	200 OK is the response to the SIP INVITE
MCDATA_SDS	INVITE for SDS communication
MCDATA_FD	INVITE for FD communication

5.5.2.17.1.2   SIP 200 (OK) from the SS

Table 5.5.2.17.1.2-1: SIP 200 (OK) from the SS

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"200"			
Reason-Phrase	"OK"			
Via	same as received in the request		RFC 3261 [22] RFC 3581 [55]	
Record-Route			RFC 3261 [22]	INVITE-RSP
addr-spec[1]	SIP URI			
user-info and host	pcscf.other.com			
port	not present			
uri-parameters	"lr"			
addr-spec[2]	SIP URI			
user-info and host	scscf.other.com			
port	not present			
uri-parameters	"lr"			
addr-spec[3]	SIP URI			
user-info and host	orig@scscf.3gpp.org			
port	not present			
uri-parameters	"lr"			
addr-spec[4]	SIP URI			
user-info and host	same address as sent by the UE in the first entry of the Route header of the INVITE	P-CSCF address		
port	not present			
uri-parameters	"lr"			
Record-Route			RFC 3261 [22]	SUBSCRIBE-RSP
addr-spec[1]	SIP URI			
user-info and host	P-CSCF address of the SS	P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery		
port	not present			
uri-parameters	"lr"			
From				
addr-spec	same value as in the request			
tag	same value as in the request			
To				
addr-spec	same value as in the request			
tag	same value as in the request or To-tag assigned by the SS if missing in the request			
Expires			RFC 3261 [22] RFC 3903 [43]	SUBSCRIBE-RSP, PUBLISH-RSP
value	same value as in the request			
Contact				REGISTER-RSP
addr-spec	same value as received in the REGISTER			
feature-param	"+g.3gpp.mcptt"			MCPTT
feature-param	"+g.3gpp.mcvideo"			MCVIDEO
feature-param	"+g.3gpp.mcdata.sds"			MCDATA
feature-param	"+g.3gpp.mcdata.fd"			MCDATA
expires	"600000"			

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Contact				SUBSCRIBE-RSP
addr-spec				
user-info and host	Same URI as used as Request-URI of the SUBSCRIBE message			
port	not present			
Contact				INVITE-RSP
addr-spec				
user-info and host	tsc_MCPTT_SessionId			MCPTT
	tsc_MCVideo_SessionId			MCVIDEO
	tsc_MCData_SessionId			MCDATA
port	not present			
feature-param	"+g.3gpp.mcptt"			MCPTT
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata.sds"		TS 24.282 [87] clause 9.2.3.2.4	MCDATA_SDS
	"+g.3gpp.mcdata.fd"		TS 24.282 [87] clause 10.2.5.2.4	MCDATA_FD
feature-param	"+g.3gpp.icsi-ref= urn:urn- 7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"		TS 24.282 [87] clause 9.2.3.2.4	MCDATA_SDS
	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd"		TS 24.282 [87] clause 10.2.5.2.4	MCDATA_FD
feature-param	"audio"			MCPTT OR MCVIDEO
feature-param	"video"			MCVIDEO
feature-param	"text"			MCDATA
feature-param	"isfocus"			
Call-ID				
callid	same value as received in the request			
CSeq				
value	same value as received in the request			
Require				INVITE-RSP
option-tag	"timer"			
Session-Expires				INVITE-RSP
generic-param	"3600"			
refresher	"uac"			
Supported				INVITE-RSP
option-tag	"tdialog"			
option-tag	"norefersub"			
option-tag	"explicitsub"			
option-tag	"nosub"			
Refer-Sub			RFC 4488 [36]	REFER-RSP

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
refer-sub-value	"false"			
P-Associated-URI			RFC 7315 [52]	REGISTER-RSP
addr-spec[1]	SIP URI			
host	px_MCX_SIP_PublicUserId_A_1			
port	not present			
Service-Route			RFC 3261 [22]	REGISTER-RSP
addr-spec[1]	SIP URI			
host	scscf.3gpp.org			
port	not present			
uri-parameters	"lr"			
SIP-ETag			RFC 3903 [43]	PUBLISH-RSP
entity-tag	unique value arbitrarily selected by the SS			
Content-Type			RFC 4566 [27]	INVITE-RSP
media-type	"application/sdp"			
Content-Length			RFC 3261 [22]	
value	length of message-body			
Message-body			RFC 3261 [22]	INVITE-RSP
SDP message	SDP message as described in Table 5.5.3.1.2-1			MCPTT
	SDP message as described in Table 5.5.3.1.2-2			MCVIDEO
	SDP message as described in Table 5.5.3.1.2-3			MCDATA

Condition	Explanation
REGISTER-RSP	200 OK is the response to a SIP REGISTER
INVITE-RSP	200 OK is the response to a SIP INVITE
SUBSCRIBE-RSP	200 OK is the response to a SIP SUBSCRIBE
PUBLISH-RSP	200 OK is the response to a SIP PUBLISH
REFER-RSP	200 OK is the response to a SIP REFER

5.5.2.17.2 SIP 202 (Accepted)

Table 5.5.2.17.2-1: SIP 202 (Accepted)

Derivation Path: RFC 2616 [26]				
Information Element	Value/remark	Comment	Reference	Condition
Status-Line			RFC 3261 [22]	
SIP-Version	"SIP/2.0"			
Status-Code	"202"			
Reason-Phrase	"Accepted"			
Via	same value as received in request		RFC 3261 [22]	
From			RFC 3261 [22]	
addr-spec	same value as received in request			
tag	same value as received in request			
To			RFC 3261 [22]	
addr-spec	same value as received in request			
tag	same value as in the request or To-tag assigned by the SS if missing in the request			
Call-ID			RFC 3261 [22]	
callid	same value as received in request			
CSeq			RFC 3261 [22]	
value	same value as received in request			
Content-Length			RFC 3261 [22]	
value	"0"			

5.5.2.18 SIP 3xx

5.5.2.18.1 SIP 302 (Moved Temporarily)

Table 5.5.2.18.1-1: SIP 302 (Moved Temporarily)

Delivery Path: RFC 3261 [22]				
Information Element	Value/remark	Comment	Reference	Condition
Request-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"302"			
Reason-Phrase	"Moved Temporarily"			
Content-Length			RFC 3261 [22]	
value	"0"	No message body included - end of SIP message		

Editor's note: Table 5.5.2.18.1-1 needs to be reviewed

5.5.2.19 SIP 4xx

5.5.2.19.1 SIP 403 (Forbidden)

This message is sent by the SS.

Table 5.5.2.19.1-1: SIP 403 (Forbidden)

Delivery Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"403"			
Reason-Phrase	"Forbidden"			
Via	same as received in the request			
From				
addr-spec	same value as in the request			
tag	same value as in the request			
To				
addr-spec	same value as in the request			
tag	same value as in the request or To-tag assigned by the SS if missing in the request			
Call-ID				
callid	same value as in the request			
CSeq				
value	same value as in the request			
Warning			RFC 3261 [22]	
warn-code[1]	"100"			
warn-agent[1]		name or pseudonym of the server adding the Warning header		
pseudonym	"MCX Server"			
warn-text[1]	"function not allowed due to" <detailed reason>			
Content-Length			RFC 3261 [22]	
value	"0"			

5.5.2.19.2 SIP 404 (Not Found)

Table 5.5.2.19.2-1: SIP 404 (Not Found)

Delivery Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"404"			
Reason-Phrase	"Not Found"			
Content-Length			RFC 3261 [22]	
value	"0"	No message body included - end of SIP message		

Editor's note: Table 5.5.2.19.2-1 needs to be reviewed

5.5.2.19.3 SIP 423 (Interval Too Brief)

Table 5.5.2.19.3-1: SIP 423 (Interval Too Brief)

Delivery Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"423"			
Reason-Phrase	"Internal Too Brief"			
Content-Length			RFC 3261 [22]	
value	"0"	No message body included - end of SIP message		

Editor's note: Table 5.5.2.19.3-1 needs to be reviewed

5.5.2.19.4 SIP 480 (Temporarily unavailable)

This message is sent by the UE.

Table 5.5.2.19.4-1: SIP 480 (Temporarily unavailable)

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"480"			
Reason-Phrase	"Temporarily Unavailable"			
Via	same as received in request message		RFC 3261 [22] RFC 3581 [55]	
From				
addr-spec	same value as received in INVITE message			
tag	same value as received in request message			
To				
addr-spec	same value as received in request message			
tag	same value as received in the INVITE or any value if missing in the INVITE.			
Warning			RFC 3261 [22]	
warn-code[1]	"399"			
warn-agent[1]	any value			
warn-text[1]	"110 user declined the call invitation"			
Call-ID	same value as received in request message			
CSeq	same value as received in request message			
Content Length	if present			
value	"0"	No message body included		

5.5.2.19.5   SIP 486 (Busy Here)

Table 5.5.2.19.5-1: SIP 486 (Busy Here)

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"486"			
Reason-Phrase	"Busy Here"			
Content-Length			RFC 3261 [22]	
value	"0"	No message body included - end of SIP message		

Editor's note: Table 5.5.2.18.5-1 needs to be reviewed

5.5.2.19.6   SIP 488 (Not Acceptable Here)

Table 5.5.2.19.6-1: SIP 488 (Not Acceptable Here)

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"488"			
Reason-Phrase	"Not Acceptable Here"			
Content-Length			RFC 3261 [22]	
value	"0"	No message body included - end of SIP message		

Editor's note: Table 5.5.2.19.6-1 needs to be reviewed

5.5.2.19.7   SIP 401 (Unauthorized)

Table 5.5.2.19.7-1: SIP 401 (Unauthorized)

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line			RFC 3261 [22]	
SIP-Version	"SIP/2.0"			
Status-Code	"401"			
Reason-Phrase	"Unauthorized"			
Via	Same value as received in the REGISTER message		RFC 3261 [22]	
To			RFC 3261 [22]	
addr-spec	Same value as received in the REGISTER message			
tag	To-tag assigned by the SS			
From	Same value as received in the REGISTER message		RFC 3261 [22]	
Call-ID	Same value as received in the REGISTER message		RFC 3261 [22]	
CSeq	Same value as received in the REGISTER message		RFC 3261 [22]	
WWW-Authenticate			RFC 2617 [72] RFC 3310 [96]	
Realm	px_MCX_DomainName _Organization_A			
algorithm	"AKAv1-MD5"			
qop-value	"auth"			
nonce	Base 64 encoding of RAND and AUTN			
opaque	arbitrary value (to be returned by the UE in subsequent REGISTER)			
Security-Server			RFC 3329 [50]	
mechanism-name	"ipsec-3gpp"			
algorithm[1]	px_IpSecAlgorithm (hmac-md5-96 or hmac-sha-1-96)			
spi-c[1]	SPI number of the inbound SA at the protected client port			
spi-s[1]	SPI number of the inbound SA at the protected server port			
port-c[1]	protected client port of SS			
port-s[1]	protected server port of SS			
Encrypt-algorithm[1]	des-ede3-cbc or aes-cbc			
q[1]	"0.9"			
mechanism-name[2]	"Ipsec-3gpp"			
algorithm[2]	Algorithm not selected by px_IpSecAlgorithm (hmac-sha-1-96 or hmac-md5-96)			
spi-c[2]	SPI number of the inbound SA at the protected client port			
spi-s[2]	SPI number of the inbound SA at the protected server port			
port-c[2]	protected client port of SS			

port-s[2]	protected server port of SS			
encrypt-algorithm[2]	des-ede3-cbc or aes-cbc			
q[2]	"0.7"			
Content-Length			RFC 3261 [22]	
value	"0"			

5.5.2.19.8 SIP 487 (Request Terminated)

Table 5.5.2.19.8-1: SIP 486 (Request Terminated)

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"487"			
Reason-Phrase	"Request Terminated"			
Content-Length			RFC 3261 [22]	
value	"0"	No message body included - end of SIP message		

5.5.2.20 SIP 5xx

5.5.2.20.1 SIP 500 (Server Internal Error)

Table 5.5.2.20.1-1: SIP 500 (Server Internal Error)

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"500"			
Reason-Phrase	"Server Internal Error"			
Content-Length			RFC 3261 [22]	
value	"0"	No message body included - end of SIP message		

Editor's note: Table 5.5.2.20.1-1 needs to be reviewed

5.5.2.21 SIP 6xx

5.5.2.21.1 SIP 606 (Not Acceptable)

Table 5.5.2.21.1-1: SIP 606 (Not Acceptable)

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
SIP-Version	"SIP/2.0"			
Status-Code	"606"			
Reason-Phrase	"Not Acceptable"			
Content-Length			RFC 3261 [22]	
value	"0"	No message body included - end of SIP message		

Editor's note: Table 5.5.2.21.1-1 needs to be reviewed

5.5.3   Default SDP message and other information elements

5.5.3.1   SDP Message

5.5.3.1.0   Common conditions for SDP Message

The following conditions apply throughout clause 5.5.3.1:

Table 5.5.3.1.0-1: Conditions

Condition	Explanation
INITIAL_SDP_OFFER	SDP message is an initial offer
SDP_OFFER	SDP message is an offer; INITIAL_SDP_OFFER implies SDP_OFFER, i.e. when a test case or test procedure specifies INITIAL_SDP_OFFER then SDP_OFFER shall be applied too, even when not explicitly specified.
SDP_ANSWER	SDP message is an Answer
FIRST_SDP_FROM_UE	First SDP message sent by the UE within the session; FIRST_SDP_FROM_UE shall be applied implicitly for an SDP message sent by the UE when the SDP message is the first SDP message sent by the UE for a session. ⇒ In general FIRST_SDP_FROM_UE does not need to be specified for a specific message content.
FIRST_SDP_FROM_SS	First SDP message sent by the SS within the session; FIRST_SDP_FROM_SS shall be applied implicitly for an SDP message sent by the SS when the SDP message is the first SDP message sent by the UE for a session. ⇒ In general FIRST_SDP_FROM_SS does not need to be specified for a specific message content; nevertheless FIRST_SDP_FROM_SS may be specified for a specific message content when the SDP message is for a new session (e.g. when a new dialog replaces a pre-established session)
IMPLICIT_GRANT_REQUESTED	An implicit grant is requested by the user
IMPLICIT_FLOOR_GRANTED	An implicit grant shall be granted by the SS
PRE_ESTABLISHED_SESSION	SDP message during establishment or modification of a pre-established session NOTE: The condition shall be applied for all SDP messages of preestablished session test cases and it is not explicitly mentioned in specific message content for these test cases
WITHOUT_FLOORCONTROL	SDP message for MCPTT call without floor control: In general when this condition is applied for an on-demand call the SDP message does not contain a media description for media plane control at all, whereas for call establishment using pre-established session the SDP message still contains a media description for media plane control but without any floor control related fmtp attributes (see TS 24.380 [10] clauses 14.2.6 and 14.3.7).
WITHOUT_TRANSMISSIONCONTROL	SDP message for MCVideo call without transmission control Editor's note: In contrast to MCPTT there is no "mc_no_floor_ctrl" (or similar) fmtp parameter for MCVideo yet.
WITHOUT_SECURITY	In case of private call: SDP message shall not contain any "a=key-mgmt" attribute for end-to-end security
WITH_SECURITY	End-to-end security to be applied independent from other conditions like PRIVATE-CALL, SDP_OFFER (e.g. for first-to-answer call)
SDS_SESSION	SDP message for establishment of an SDS session according to TS 24.282 [87] clause 9.2.4.

5.5.3.1.1 SDP Message from the UE

- MCPTT

Table 5.5.3.1.1-1: SDP Message from the UE for MCPTT

Derivation Path: RFC 4566 [27]				
Information Element	Value/remark	Comment	Reference	Condition
Session description:				
Protocol Version	"0"	v= line		
Origin	Same o=line as in the previous SDP message sent by the UE except that sess-version is incremented by one	o= line		
Origin		o= line		FIRST_SDP_FROM_UE
username	any allowed value			
sess-id	any allowed value	A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session		
sess-version	any allowed value			
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address			
unicast-address	IP address of the UE	IP address assigned at initial registration		
Session Name	at least one UTF-8-encoded character, or if no name is given, a single empty space	s= line		
Connection Data	not required if included in all media	c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address			
connection-address	IP address of the UE			
Bandwidth		b= line		
"AS"	any allowed value		TS 26.114 [64] Table K.6	
Time description				
Timing		t= line		
start-time	"0"			
stop-time	"0"			
Session attribute	present only if there is no key-mgmt media attribute in the media description for audio	a= line attribute = key-mgmt (NOTE 2)		WITH_SECURITY OR (PRIVATE-CALL AND SDP_OFFER AND NOT WITHOUT_SECURITY)
key-mgmt			TS 24.379 [9] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2A for condition MCPTT		RFC 4567 [44]	
Session attribute	optional (NOTE 3)	a=line attribute="ice-lite"	RFC 5245 [115]	PRE_ESTABLISHED_SESSION

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
ice-lite				
Media description[1]		**Media description for audio**		
media description		m= line media = audio	RFC 4867 [59]	
media	"audio"			
port	any allowed value	The transport port to which the media stream is sent		
proto	"RTP/SAVP"			
fmt	any allowed value(s)	Indicating RTP payload type numbers		
media title	"speech"	i= line		
Connection Data	present if session description does not contain a c=line; optional otherwise	c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address"			
connection-address	IP address of the UE			
Bandwidth		b= line		
"AS"	any allowed value		TS 26.114 [64] Table K.6	
"RS"	any allowed value if present		RFC 3556 [113]	
"RR"	any allowed value if present		RFC 3556 [113]	
media attribute		a= line attribute = rtpmap		
rtpmap	"rtpmap"			
payload type	same value as format parameter of the "fmtp" attribute			
encoding name	"AMR-WB"			
clock rate	16000		RFC 4867 [59] clause 8.3	
encoding parameter	"1" if present	Channel number		
media attribute		a= line attribute = fmtp		
fmtp	"fmtp"			
format	a value given in fmt in the audio media description			
format specific parameters		Parameters of WB-AMR codec NOTE: In addition to the parameters below the UE may provide further parameters		
mode-change-capability	"2"	To be able to interoperate fully with gateways to circuit switched networks	RFC 4867 [59] clause 8.2	
max-red	"0"	No redundancy will be used	RFC 4867 [59] clause 8.2	
media attribute		a= line attribute =ptime		
ptime	any allowed value	packet time		
media attribute		a= line attribute =maxptime		
maxptime	any allowed value	maximum packet time		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute	optional	a= line attribute =sendrecv Indicates send and receive mode being activated		
sendrecv		Attribute has no value		
media attribute	one or several attribute lines if present	a=line attribute=ssrc	RFC 5576 [116]	
ssrc				
ssrc-id	any allowed value but all the same if there is more than one ssrc attribute for audio			
attribute	any source attribute according to RFC 5576 [116] (NOTE 1)			
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_EST ABLISHED _SESSION
candidate		candidate for RTP		
foundation	any value			
component-id	1	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			
priority	any value			
connection-address	same IP address as in speech media's c= line or in the session's c= line if the speech media does not have a c= line	default candidate		
port	same port number as in the m= line for speech			
cand-type	"host"			
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_EST ABLISHED _SESSION
candidate		candidate for RTCP		
foundation	any value			
component-id	2	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			
priority	any value			
connection-address	same IP address as in speech media's c= line or in the session's c= line if the speech media does not have a c= line	default candidate		
port	same port number as in the m= line for speech incremented by 1			
cand-type	"host"			
media attribute	present only if there is no key-mgmt attribute at session level	a= line attribute = key-mgmt		WITH_SE CURITY OR (PRIVATE-CALL AND SDP_OFF ER AND NOT WITHOUT _SECURIT Y)
key-mgmt			TS 24.379 [9] clause 6.2.1	

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2A for condition MCPTT		RFC 4567 [44]	
Media description[2]		Media description for media control		NOT WITHOUT _FLOORC ONTROL OR PRE_EST ABLISHED _SESSION
media description		m= line media = application SDP media-level section for a media-control entity (NOTE 2)		
media	"application"			
port	any allowed value	The port for the media-control entity		
proto	"udp"			
fmt	"MCPTT"			
Connection Data	present if session description does not contain a c=line; optional otherwise	c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address"			
connection-address	IP address of the UE			
media attribute		a= line attribute = fmtp		
fmtp				
format	"MCPTT"			
format specific parameters				SDP_OFF ER AND NOT WITHOUT _FLOORC ONTROL
mc_queueing	not present			
	present	Parameter has no value	TS 24.380 [10] clause 14.2.2	pc_MCPTT _FloorReq uestQueue ing
mc_priority	any allowed value	Any integer value in the range of 1..255	TS 24.380 [10] clause 14.2.3	
mc_granted	not present			
	present	Parameter has no value	TS 24.380 [10] clause 14.2.4	INITIAL_S DP_OFFE R
mc_implicit_request	not present			
	present	Parameter has no value	TS 24.380 [10] clause 14.2.5	IMPLICIT_ GRANT_R EQUESTE D

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mc_ssrc	not present	According to TS 24.380 [10] there is no "mc_ssrc" in an SDP offer but the client may use the "a=ssrc" attribute to indicate the Audio SSRC it would like to use		
mc_no_floor_ctrl	not present			
mc_floor_ssrc	any value if present	Rel-18		
format specific parameters				SDP_ANSWER AND NOT WITHOUT_FLOORCONTROL
mc_queueing	not present			
	present	Parameter has no value	TS 24.380 [10] clause 14.3.2	pc_MCPTT_FloorRequestQueueing
mc_priority	same value as in the offer		TS 24.380 [10] clause 14.3.3	
mc_granted	not present			
mc_implicit_request	not present			
mc_ssrc	not present			
mc_no_floor_ctrl	not present			
mc_floor_ssrc	any value if present	Rel-18		
format specific parameters				WITHOUT_FLOORCONTROL
mc_queueing	not present			
mc_priority	not present			
mc_granted	not present			
mc_implicit_request	not present			
mc_ssrc	not present			
mc_no_floor_ctrl	present	Parameter has no value	TS 24.380 [10] clauses 14.2.6 and 14.3.7	
mc_floor_ssrc	any value if present	Rel-18		
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_ESTABLISHED_SESSION
candidate		candidate for Media Control messages		
foundation	any value			
component-id	1	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			
priority	any value			
connection-address	same IP address as in application media's c= line or in the session's c= line if the application media does not have a c= line	default candidate		
port	same port number as in the m= line for application			
cand-type	"host"			

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
NOTE 1: If "ssrc" media attributes are included, then at least one "ssrc=" line shall contain a "cname" source attribute according to RFC 5576 [116] clause 6.1.				
NOTE 2: Even though there is no clarity in core specs it is assumed that a key-mgmt attribute at session level does not affect the media control security, i.e. the key-mgmt attribute is not applicable for the "application" media description for which still the CSK is used as security key. This is in contrast to RFC 4566 [27] clause 5 saying "In general, session-level values are the default for all media unless overridden by an equivalent media-level value."				
NOTE 3: If the UE is configured as lite implementation according to RFC 5245 [115], it shall include "a=ice-lite" session-level attribute; nevertheless this is not a test requirement unless specified otherwise in a test case.				

- MCVideo

Table 5.5.3.1.1-2: SDP Message from the UE for MCVideo

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Session description:				
Protocol Version	"0"	v= line		
Origin	Same o=line as in the previous SDP message sent by the UE except that sess-version is incremented by one	o= line		
Origin		o= line		FIRST_SDP_FROM_UE
username	any allowed value			
sess-id	any allowed value	A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session.		
sess-version	any allowed value			
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address			
unicast-address	IP address of the UE	IP address assigned at initial registration		
Session Name	at least one UTF-8-encoded character, or if no name is given, a single empty space	s= line		
Connection Data	not required if included in all media	c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address			
connection-address	IP address of the UE			
Bandwidth		b= line		
"AS"	any allowed value			
Time description				
Timing		t= line		
start-time	"0"			
stop-time	"0"			
Session attribute	present only if there is no key-mgmt media attribute in the media descriptions for audio and video	a= line attribute = key-mgmt (NOTE 2)		WITH_SECURITY OR (PRIVATE-CALL AND SDP_OFFER AND NOT WITHOUT_SECURITY)
key-mgmt			TS 24.379 [9] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2A for condition MCVIDEO		RFC 4567 [44]	
Session attribute	optional (NOTE 3)	a=line attribute="ice-lite"	RFC 5245 [115]	PRE_ESTABLISHED_SESSION

ETSI

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: RFC 4566 [27]				
ice-lite				
Media description[1]		**Media description for audio**		
media description		m= line media = audio	RFC 4867 [59]	
media	"audio"			
port	any allowed value	The transport port to which the media stream is sent		
proto	"RTP/SAVP"			
fmt	any allowed value(s)	Indicating RTP payload type numbers		
media title	"audio component of MCVideo"	i= line		
Connection Data	present if session description does not contain a c=line; optional otherwise	c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address"			
connection-address	IP address of the UE			
Bandwidth		b= line		
"AS"	any allowed value			
"RS"	any allowed value if present		RFC 3556 [113]	
"RR"	any allowed value if present		RFC 3556 [113]	
media attribute		a= line attribute = rtpmap		
rtpmap	"rtpmap"			
payload type	same value as format parameter of the "fmtp" attribute			
encoding name	"AMR-WB"			
clock rate	16000		RFC 4867 [59] clause 8.3	
encoding parameter	"1" if present	Channel number		
media attribute		a= line attribute = fmtp		
fmtp	"fmtp"			
format	a value given in fmt in the audio media description			
format specific parameters		Parameters of WB-AMR codec NOTE: In addition to the parameters below the UE may provide further parameters		
mode-change-capability	"2"	To be able to interoperate fully with gateways to circuit switched networks	RFC 4867 [59] clause 8.2	
max-red	"0"	No redundancy will be used	RFC 4867 [59] clause 8.2	
media attribute		a= line attribute =ptime		
ptime	any allowed value	packet time		
media attribute		a= line attribute =maxptime		
maxptime	any allowed value	maximum packet time		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute	optional	a= line attribute =sendrecv Indicates send and receive mode being activated		
sendrecv		Attribute has no value		
media attribute	one or several attribute lines if present	a=line attribute=ssrc	RFC 5576 [116]	
ssrc				
ssrc-id	any allowed value but all the same if there is more than one ssrc attribute for audio			
attribute	any source attribute according to RFC 5576 [116] (NOTE 1)			
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_EST ABLISHED _SESSION
candidate		candidate for RTP		
foundation	any value			
component-id	1	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			
priority	any value			
connection-address	same IP address as in audio media's c= line or in the session's c= line if the audio media does not have a c= line	default candidate		
port	same port number as in the m= line for audio			
cand-type	"host"			
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_EST ABLISHED _SESSION
candidate		candidate for RTCP		
foundation	any value			
component-id	2	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			
priority	any value			
connection-address	same IP address as in audio media's c= line or in the session's c= line if the audio media does not have a c= line	default candidate		
port	same port number as in the m= line for audio incremented by 1			
cand-type	"host"			
media attribute	present only if there is no key-mgmt attribute at session level	a= line attribute = key-mgmt		WITH_SE CURITY OR (PRIVATE- CALL AND SDP_OFF ER AND NOT WITHOUT _SECURIT Y)
key-mgmt			TS 24.281 [86] clause 6.2.1	

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2A for condition MCVIDEO (NOTE 4)		RFC 4567 [44]	
Media description[2]		**Media description for video**		
media description		m= line media = video SDP media-level section for a media-transmission control entity		
media	"video"			
port	any allowed value	The port for the media-transmission control entity		
proto	"RTP/SAVPF" or "RTP/SAVP"			
fmt	any allowed value(s)			
media title	"video component of MCVideo"	i= line		
Connection Data	present if session description does not contain a c=line; optional otherwise	c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address"			
connection-address	IP address of the UE			
Bandwidth		b= line		
"AS"	any allowed value			
"RS"	any allowed value if present		RFC 3556 [113]	
"RR"	any allowed value if present		RFC 3556 [113]	
media attribute		a= line attribute = rtpmap		
rtpmap	"rtpmap"			
payload type	same value as format parameter of the "fmtp" attribute			
encoding name	"H264"			
clock rate	90000		RFC 4867 [59] clause 8.3	
media attribute		a= line attribute = fmtp		
fmtp	"fmtp"			
format	a value given in fmt in the audio media description			
format specific parameters		Parameters of H264 codec NOTE: In addition to the parameters below the UE may provide further parameters	RFC 6184 [129]	
profile-level-id	any allowed value			
packetization-mode	0			SDP_ANSWER

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute	present if proto="RTP/AVP" in the m=line	a= line attribute = tcap	RFC 5939 [128] TS 26.114 [64] clause 6.2.1a.2	SDP_OFFER
tcap				
trpr-cap-num	1			
proto-list	RTP/AVPF			
media attribute	present if proto="RTP/AVP" in the m=line	a= line attribute = pcfg	RFC 5939 [128] TS 26.114 [64] clause 6.2.1a.2	SDP_OFFER
pcfg				
config-number	1			
pot-cfg-list	t=1			
media attribute	one or several attribute lines if present	a=line attribute=ssrc	RFC 5576 [116]	
ssrc				
ssrc-id	any allowed value but all the same if there is more than one ssrc attribute for video			
attribute	any source attribute according to RFC 5576 [116] (NOTE 1)			
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_EST ABLISHED _SESSION
candidate		candidate for RTP		
foundation	any value			
component-id	1	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			
priority	any value			
connection-address	same IP address as in video media's c= line or in the session's c= line if the video media does not have a c= line	default candidate		
port	same port number as in the m= line for video			
cand-type	"host"			
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_EST ABLISHED _SESSION
candidate		candidate for RTCP		
foundation	any value			
component-id	2	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			
priority	any value			
connection-address	same IP address as in video media's c= line or in the session's c= line if the video media does not have a c= line	default candidate		
port	same port number as in the m= line for video incremented by 1			
cand-type	"host"			

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute	present only if there is no key-mgmt attribute at session level	a= line attribute = key-mgmt		WITH_SE CURITY OR (PRIVATE- CALL AND SDP_OFF ER AND NOT WITHOUT _SECURIT Y)
key-mgmt			TS 24.281 [86] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2A for condition MCVIDEO (NOTE 4)		RFC 4567 [44]	
Media description[3]		Media description for media control		NOT WITHOUT _TRANSMI SSIONCO NTROL OR PRE_EST ABLISHED _SESSION
media description		m= line media = application SDP media-level section for a media-control entity (NOTE 2)		
media	"application"		TS 24.581 [88] clause 12	
port	any allowed value	The port for the media-control entity		
proto	"udp"			
fmt	"MCVideo"			
Connection Data	present if session description does not contain a c=line; optional otherwise	c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address"			
connection-address	IP address of the UE			
media attribute		a= line attribute = fmtp		
fmtp			TS 24.581 [88] clause 12, clause 14	
format	"MCVideo"			
format specific parameters				SDP_OFF ER AND NOT WITHOUT _TRANSMI SSIONCO NTROL
mc_queueing	not present			

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: RFC 4566 [27]				
	present	Parameter has no value.	TS 24.581 [88] clause 14.2.2	pc_MCVideo_TransmissionRequestQueueing
mc_priority	any allowed value if present	Any integer value in the range of 1..255 Shall be present when priority other than the default priority is required	TS 24.581 [88] clause 14.2.3	
mc_reception_priority	any allowed value if present	Any integer value in the range of 0…255 Shall be present when priority other than the default reception priority is required	TS 24.581 [88] clause 14.2.6	
mc_granted	not present			
	present	Parameter has no value	TS 24.581 [88] clause 14.2.4	INITIAL_SDP_OFFER
mc_implicit_request	not present			
	present	Parameter has no value	TS 24.581 [88] clause 14.2.5	IMPLICIT_GRANT_REQUESTED
mc_audio_ssrc	not present	Rel-18		
mc_video_ssrc	not present	Rel-18		
mc_transmission_ssrc	any value if present	Rel-18		
format specific parameters				SDP_ANSWER AND NOT WITHOUT_TRANSMISSIONCONTROL
mc_queueing	not present			
	present	Parameter has no value	TS 24.581 [88] clause 14.3.2	pc_MCVideo_TransmissionRequestQueueing
mc_priority	same value as in the SDP offer if present, not present otherwise		TS 24.581 [88] clause 14.3.3	
mc_reception_priority	same value as in the SDP offer if present, not present otherwise		TS 24.581 [88] clause 14.3.6	
mc_granted	not present			
mc_implicit_request	not present			
mc_audio_ssrc	not present	Rel-18		
mc_video_ssrc	not present	Rel-18		
mc_transmission_ssrc	any value if present	Rel-18		
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_ESTABLISHED_SESSION
candidate		candidate for Transmission Control Messages		
foundation	any value			
component-id	1	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			
priority	any value			

ETSI

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
connection-address	same IP address as in application media's c= line or in the session's c= line if the application media does not have a c= line	default candidate		
port	same port number as in the m= line for application			
cand-type	"host"			
NOTE 1: If "ssrc" media attributes are included, then at least one "ssrc=" line shall contain a "cname" source attribute according to RFC 5576 [116] clause 6.1.				
NOTE 2: Even though there is no clarity in core specs it is assumed that a key-mgmt attribute at session level does not affect the media control security, i.e. the key-mgmt attribute is not applicable for the "application" media description for which still the CSK is used as security key. This is in contrast to RFC 4566 [27] clause 5 saying "In general, session-level values are the default for all media unless overridden by an equivalent media-level value."				
NOTE 3: If the UE is configured as lite implementation according to RFC 5245 [115], it shall include "a=ice-lite" session-level attribute; nevertheless this is not a test requirement unless specified otherwise in a test case.				
NOTE 4: If present the a=key-mgmt attributes for audio and video carry the same keys.				

-           MCData

Table 5.5.3.1.1-3: SDP Message from the UE for MCData

Derivation Path: RFC 4566 [27]				
Information Element	Value/remark	Comment	Reference	Condition
Session description:				
Protocol Version	"0"	v= line		
Origin	Same o=line as in the previous SDP message sent by the UE except that sess-version is incremented by one	o= line		
Origin		o= line		FIRST_SDP_FROM_UE
username	any allowed value			
sess-id	any allowed value	A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session.		
sess-version	any allowed value			
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address"			
unicast-address	IP address of the UE	IP address assigned at initial registration		
Session Name	at least one UTF-8-encoded character, or if no name is given, a single empty space	s= line		
Connection Data	not required if included in all media	c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address"			
connection-address	IP address of the UE			
Session attribute	optional (NOTE 1)	a=line attribute="ice-lite"	RFC 5245 [115]	PRE_ESTABLISHED_SESSION
ice-lite				
Time description				
Timing		t= line		
start-time	"0"			
stop-time	"0"			
Session attribute	present only if there is no key-mgmt media attribute in the media description for data	a= line attribute = key-mgmt		SDP_OFFER AND MCD_1to1
key-mgmt			TS 24.379 [9] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2A for condition MCDATA		RFC 4567 [44]	
Media description[1]		Media description for data		
media description		m= line media = message	RFC 4867 [59] TS 24.282 [87]	
media	"message"			
port	any allowed value	The transport port to which the media stream is sent		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
proto	"TCP/MSRP"			
fmt	"*"			
Connection Data	present if session description does not contain a c=line; optional otherwise	c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address"			
connection-address	IP address of the UE			
media attribute		a= line attribute = sendonly		SDP_OFFER AND NOT SDS_SESSION
sendonly		No parameters associated with this line		
media attribute		a= line attribute = recvonly		SDP_ANSWER AND NOT SDS_SESSION
recvonly		No parameters associated with this line		
media attribute		a= line attribute = sendrecv		SDS_SESSION
sendrecv		No parameters associated with this line		
media attribute		a= line attribute = path		
path	MSRP URI according to RFC 4975 [120] clause 6 and 9	attribute containing its own MSRP URI. An example: msrp://mcdata.example.com:7654/abcde1; tcp	TS 24.282 [87]	
scheme	"msrp"			
authority			RFC 3986 [123] clause 3.2	
userinfo	any value if present			
host	any allowed value	domain name or IP address of the UE		
port	same value as in the media line if present	port at which the UE may be connected to for MSRP; mandatory when hostname is an IP address		
session id	any allowed value if present			
transport	"tcp"	mandatory for MSRP according to RFC 4975 [120] clause 6		
URI-parameter	not present			
media attribute		a= line attribute = accept-types	RFC 4975 [120]	
accept-types				
format-entry[1]	"application/vnd.3gpp.mcdata-signalling"			
format-entry[2]	"application/vnd.3gpp.mcdata-payload"			MCDATA_SDS
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_ESTABLISHED_SESSION

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
candidate		candidate for TCP/MSRP		
foundation	any value			
component-id	1	according to RFC 5245 [115] clause 4.1.1.1		
transport	"TCP/MSRP"			
priority	any value			
connection-address	same IP address as in media's c= line or in the session's c= line if the media does not have a c= line	default candidate		
port	same port number as in the m= line			
cand-type	"host"			
media attribute		a= line attribute = setup	RFC 4145 [119]	
setup	"actpass"			SDP_OFFER
	"active" or "passive"			SDP_ANSWER
media attribute		a= line attribute = file-transfer-id	RFC 5547 [124]	MCDATA_FD
file-transfer-id	any allowed value		RFC 5547 [124] clause 8.2.1	SDP_OFFER
	same value as in the sdp offer		RFC 5547 [124] clause 8.2.2	SDP_ANSWER
media attribute		a= line attribute = file-selector	RFC 5547 [124]	MCDATA_FD
file-selector				SDP_OFFER
selector[1]				
filename	any allowed value	e.g. "TestFile.txt"		
filesize	size of the file to be transferred			
filetype	any allowed value	e.g. "text/plain"		
hash				
algorithm	"sha-1"			
value	hash value of the file to be transferred			
file-selector	same value as in the sdp offer			SDP_ANSWER
media attribute		a= line attribute = file-date	RFC 5547 [124]	MCDATA_FD AND SDP_OFFER
file-date				
date-param	at least one entry with an allowed value			
media attribute	present only if there is no key-mgmt attribute at session level	a= line attribute = key-mgmt		SDP_OFFER AND MCD_1to1
key-mgmt			TS 24.379 [9] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2A for condition MCDATA		RFC 4567 [44]	
NOTE 1: If the UE is configured as lite implementation according to RFC 5245 [115], it shall include "a=ice-lite" session-level attribute; nevertheless this is not a test requirement unless specified otherwise in a test case.				

5.5.3.1.2   SDP Message from the SS

-    MCPTT

Table 5.5.3.1.2-1: SDP Message from the SS for MCPTT

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Session description:				
Protocol Version	"0"	v= line		
Origin	Same o=line as in the previous SDP message sent by the SS except that sess-version is incremented by one	o= line		
Origin		o= line		FIRST_SDP _FROM_SS
username	"-"	"-" indicating the concept of user IDs not being supported		
sess-id	"11111111"	A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session.		
sess-version	"11111111"			
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address"	This depends on the unicast address of the UE		
unicast-address	IP address of the SS			
Session Name	" "	s= line single empty space indicating no session name		
Bandwidth		b= line		
"AS"	38		TS 26.114 [64] Table K.6	
Time description				
Timing		t= line		
start-time	"0"			
stop-time	"0"			
Session attribute		a=line attribute="ice-lite"	RFC 5245 [115]	PRE_ESTA BLISHED_S ESSION
ice-lite				
Media description[1]		**Media description for audio**		
media description		m= line media = audio	RFC 4867 [59]	
media	"audio"			
port	port number assigned by the SS (even integer)	The transport port to which the media stream is sent	RFC 6335 [63] clause 6	
proto	"RTP/SAVP"			
fmt	"99"	RTP/SAVP payload type for AMR-WB is dynamic		INITIAL_SD P_OFFER
	value for AMR-WB as used in initial offer			
media title	"speech"	i= line		
Connection Data		c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address"	This depends on the connection address		
connection-address	IP address of the SS			
Bandwidth		b= line		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
"AS"	38		TS 26.114 [64] Table K.6	
"RS"	0		RFC 3556 [113]	
"RR"	2000		RFC 3556 [113]	
media attribute		a= line attribute = rtpmap		
rtpmap	"rtpmap"			
payload type	"99"			INITIAL_SDP_OFFER
	value for AMR-WB as used in initial offer			
encoding name	"AMR-WB"			
clock rate	16000		RFC 4867 [59] clause 8.3	
encoding parameter	"1"	Channel number		
media attribute		a= line attribute = fmtp		
fmtp				
format	"99"			INITIAL_SDP_OFFER
	value for AMR-WB as used in initial offer			
format specific parameters		Parameters of WB-AMR codec		
mode-change-capability	"2"	To be able to interoperate fully with gateways to circuit switched networks	RFC 4867 [59] clause 8.2	
max-red	"0"	No redundancy will be used	RFC 4867 [59] clause 8.2	
media attribute		a= line attribute =ptime		
ptime	"20"	packet time		
media attribute		a= line attribute =maxptime		
maxptime	"240"	maximum packet time		
media attribute		a= line attribute = key-mgmt		WITH_SECURITY OR (PRIVATE-CALL AND SDP_OFFER AND NOT WITHOUT_SECURITY)
key-mgmt			TS 24.379 [9] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2 for condition MCPTT		RFC 4567 [44]	
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_ESTABLISHED_SESSION
candidate		candidate for RTP		
foundation	1234	arbitrarily selected		
component-id	1	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
priority	2130706431	RFC 5245 [115] clause 4.2: $2^{24} * 126 +$ $2^8 * 65535 +$ 256 - component id		
connection-address	IP address of the SS (same IP address as in the c=line for speech)	default candidate		
port	same port number as in the m= line for speech			
cand-type	"host"			
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_ESTA BLISHED_S ESSION
candidate		candidate for RTCP		
foundation	1234	same as for RTP		
component-id	2	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			
priority	2130706430	RFC 5245 [115] clause 4.2: $2^{24} * 126 +$ $2^8 * 65535 +$ 256 - component id		
connection-address	IP address of the SS (same IP address as in the c=line for speech)	default candidate		
port	same port number as in the m= line for speech incremented by 1			
cand-type	"host"			
Media description[2]		Media description for media control		NOT WITHOUT_ FLOORCON TROL OR PRE_ESTA BLISHED_S ESSION
media description		m= line media = application SDP media-level section for a media control entity		
media	"application"			
port	port number assigned by the SS being different than the port number of the audio channel (RTP) and its associated control channel (RTCP)"	The port for the media control entity		
proto	"udp"			
fmt	"MCPTT"			
Connection Data		c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address	This depends on the connection address		
connection-address	IP address of the SS			
media attribute		a= line attribute = fmtp		
fmtp				
format	"MCPTT"			

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
format specific parameters				SDP_OFFER AND NOT WITHOUT_FLOORCONTROL
mc_queueing	present	Parameter has no value	TS 24.380 [10] clause 14.2.2	
mc_priority	"3"	"3" is the value of the <user-priority> element for user A in the MCPTT Group Configuration (Table 5.5.7.1-1)	TS 24.380 [10] clause 14.2.3	
mc_granted	not present			
mc_implicit_request	not present			
mc_ssrc	not present			
mc_no_floor_ctrl	not present			
mc_floor_ssrc	not present	Rel-18		
format specific parameters				SDP_ANSWER AND NOT WITHOUT_FLOORCONTROL
mc_queueing	present if included in the offer	Parameter has no value	TS 24.380 [10] clause 14.3.2	
mc_priority	if a value is provided in the offer: "3" or the value provided in the offer, whichever is the lower value; otherwise not present	"3" is the value of the <user-priority> element for user A in the MCPTT Group Configuration (Table 5.5.7.1-1) NOTE: <num-levels-priority-hierarchy> has a value of 10 for on-network i.e. it is greater than 3	TS 24.380 [10] clause 14.3.3	
mc_granted	not present			
	present	Parameter has no value	TS 24.380 [10] clause 14.3.4	IMPLICIT_FLOOR_GRANTED
mc_implicit_request	not present			
	present	Parameter has no value	TS 24.380 [10] clause 14.3.5	IMPLICIT_GRANT_REQUESTED
mc_ssrc	not present			
	Audio SSRC of the client as defined in clause 5.5.6.1		TS 24.380 [10] clause 14.3.6	IMPLICIT_GRANT_REQUESTED
mc_no_floor_ctrl	not present			
mc_floor_ssrc	not present	Rel-18		
format specific parameters				WITHOUT_FLOORCONTROL
mc_queueing	not present			
mc_priority	not present			
mc_granted	not present			
mc_implicit_request	not present			
mc_ssrc	not present			
mc_no_floor_ctrl	present	Parameter has no value	TS 24.380 [10] clause 14.3.7	
mc_floor_ssrc	not present	Rel-18		
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_ESTABLISHED_SESSION

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
candidate		candidate for Media Control messages		
foundation	4321	arbitrarily selected; different than for RTP/RTCP		
component-id	1	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			
priority	2130706431	RFC 5245 [115] clause 4.2: $2^{24} * 126 +$ $2^8 * 65535 +$ 256 - component id		
connection-address	IP address of the SS (same IP address as in the c=line for media control)	default candidate		
port	same port number as in the m= line for application			
cand-type	"host"			

- MCVideo

Table 5.5.3.1.2-2: SDP Message from the SS for MCVideo

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: RFC 4566 [27]				
Session description:				
Protocol Version	"0"	v= line		
Origin	Same o=line as in the previous SDP message sent by the SS except that sess-version is incremented by one	o= line		
Origin		o= line		FIRST_SDP_FROM_SS
username	"-"	"-" indicating the concept of user IDs not being supported		
sess-id	"11111111"	A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session.		
sess-version	"11111111"			
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address	This depends on the unicast address of the UE		
unicast-address	IP address of the SS			
Session Name	" "	s= line single empty space indicating no session name		
Bandwidth		b= line		
"AS"	352			
Time description				
Timing		t= line		
start-time	"0"			
stop-time	"0"			
Session attribute		a=line attribute="ice-lite"	RFC 5245 [115]	PRE_ESTABLISHED_SESSION
ice-lite				
Media description[1]		Media description for audio		
media description		m= line media = audio	RFC 4867 [59]	
media	"audio"			
port	port number assigned by the SS (even integer)	The transport port to which the media stream is sent	RFC 6335 [63] clause 6	
proto	"RTP/SAVP"			
fmt	"99"	RTP/SAVP payload type for AMR-WB is dynamic		INITIAL_SDP_OFFER
	value for AMR-WB as used in initial offer			
media title	"audio component of MCVideo"	i= line		
Connection Data		c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address	This depends on the connection address		
connection-address	IP address of the SS			
Bandwidth		b= line		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
"AS"	37			
"RS"	0		RFC 3556 [113]	
"RR"	2000		RFC 3556 [113]	
media attribute		a= line attribute = rtpmap		
rtpmap	"rtpmap"			
payload type	"99"			INITIAL_SDP_OFFER
	value for AMR-WB as used in initial offer			
encoding name	"AMR-WB"			
clock rate	16000		RFC 4867 [59] clause 8.3	
encoding parameter	"1"	Channel number		
media attribute		a= line attribute = fmtp		
fmtp				
format	"99"			INITIAL_SDP_OFFER
	value for AMR-WB as used in initial offer			
format specific parameters		Parameters of WB-AMR codec		
mode-change-capability	"2"	To be able to interoperate fully with gateways to circuit switched networks	RFC 4867 [59] clause 8.2	
max-red	"0"	No redundancy will be used	RFC 4867 [59] clause 8.2	
media attribute		a= line attribute =ptime		
ptime	"20"	packet time		
media attribute		a= line attribute =maxtime		
maxptime	"240"	maximum packet time		
media attribute		a= line attribute = key-mgmt		WITH_SECURITY OR (PRIVATE-CALL AND SDP_OFFER AND NOT WITHOUT_SECURITY)
key-mgmt			TS 24.281 [86] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2 for condition MCVIDEO		RFC 4567 [44]	
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_ESTABLISHED_SESSION
candidate		candidate for RTP		
foundation	1234	arbitrarily selected		
component-id	1	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: RFC 4566 [27]				
priority	2130706431	RFC 5245 [115] clause 4.2: 2^{24} * 126 + 2^8 * 65535 + 256 - component id		
connection-address	IP address of the SS (same IP address as in the c=line for audio)	default candidate		
port	same port number as in the m= line for audio			
cand-type	"host"			
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_EST ABLISHED _SESSION
candidate		candidate for RTCP		
foundation	1234	same as for RTP		
component-id	2	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			
priority	2130706430	RFC 5245 [115] clause 4.2: 2^{24} * 126 + 2^8 * 65535 + 256 - component id		
connection-address	IP address of the SS (same IP address as in the c=line for audio)	default candidate		
port	same port number as in the m= line for audio incremented by 1			
cand-type	"host"			
Media description[2]		Media description for video		
media description		m= line media = video SDP media-level section for a media-transmission control entity		
media	"video"			
port	port number of the audio stream incremented by 2 (resulting in even integer)	The port for the media-transmission control entity		
proto	"RTP/SAVPF"			
fmt	"100"			INITIAL_S DP_OFFE R
	value for H264 as used in initial offer			
media title	"video component of MCVideo"	i= line		
Connection Data		c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address			
connection-address	IP address of the SS			
Bandwidth		b= line		
"AS"	315			
"RS"	0		RFC 3556 [113]	

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: RFC 4566 [27]				
"RR"	2500		RFC 3556 [113]	
media attribute		a= line attribute = rtpmap		
rtpmap	"rtpmap"			
payload type	"100"			INITIAL_SDP_OFFER
	value for H264 as used in initial offer			
encoding name	"H264"			
clock rate	90000		RFC 6184 [129]	
media attribute		a= line attribute = fmtp		
fmtp				
format	"100"			INITIAL_SDP_OFFER
	value for H264 as used in initial offer			
format specific parameters		Parameters the H264 codec	RFC 6184 [129]	SDP_OFFER
packetization-mode	"0"			
profile-level-id	"42e00c"			
sprop-parameter-sets	"J0LgDJWgUH6Af1A=, KM46gA=="			
format specific parameters	same parameters and values as sent by the UE in the corresponding SDP offer	Parameters the H264 codec		SDP_ANSWER
media attribute		a= line attribute = rtcp-fb	RFC 4585 [130]	SDP_OFFER
rtcp-fb				
rtcp-fb-pt	"*"			
rtcp-fb-val	"trr-int 5000"			
media attribute		a= line attribute = rtcp-fb	RFC 4585 [130]	SDP_OFFER
rtcp-fb				
rtcp-fb-pt	"*"			
rtcp-fb-val	"nack"			
media attribute		a= line attribute = rtcp-fb	RFC 4585 [130]	SDP_OFFER
rtcp-fb				
rtcp-fb-pt	"*"			
rtcp-fb-val	"nack pli"			
media attribute		a= line attribute = rtcp-fb	RFC 4585 [130]	SDP_OFFER
rtcp-fb				
rtcp-fb-pt	"*"			
rtcp-fb-val	"ccm fir"			
media attribute		a= line attribute = rtcp-fb	RFC 4585 [130]	SDP_OFFER
rtcp-fb				
rtcp-fb-pt	"*"			
rtcp-fb-val	"ccm tmmbr"			
media attribute	present if there have been a=tcap and a=pcfg attributes in the corresponding SDP offer	a= line attribute = acfg	RFC 5939 [128] TS 26.114 [64] clause 6.2.1a.3	SDP_ANSWER
acfg				
config-number	1			

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
sel-cfg-list	"t=1"			
media attribute		a= line attribute = key-mgmt		WITH_SE CURITY OR (PRIVATE-CALL AND SDP_OFF ER AND NOT WITHOUT _SECURIT Y)
key-mgmt			TS 24.281 [86] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2 for condition MCVIDEO		RFC 4567 [44]	
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_EST ABLISHED _SESSION
candidate		candidate for RTP		
foundation	2345	arbitrarily selected; different than audio		
component-id	1	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			
priority	2130706431	RFC 5245 [115] clause 4.2: $2^{24} * 126 +$ $2^8 * 65535 +$ 256 - component id		
connection-address	IP address of the SS (same IP address as in the c=line for video)	default candidate		
port	same port number as in the m= line for video			
cand-type	"host"			
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_EST ABLISHED _SESSION
candidate		candidate for RTCP		
foundation	22345	same as for RTP		
component-id	2	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			
priority	2130706430	RFC 5245 [115] clause 4.2: $2^{24} * 126 +$ $2^8 * 65535 +$ 256 - component id		
connection-address	IP address of the SS (same IP address as in the c=line for video)	default candidate		
port	same port number as in the m= line for video incremented by 1			

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Media description[3]		Media description for media control		NOT WITHOUT _TRANSMI SSIONCO NTROL OR PRE_EST ABLISHED _SESSION
media description		m= line media = application SDP media-level section for a media control entity		
media	"application"			
port	port number assigned by the SS being different than the port number of the audio and video channels (RTP) and their associated control channels (RTCP)"	The port for the media control entity		
proto	"udp"			
fmt	"MCVideo"			
Connection Data		c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address	This depends on the connection address		
connection-address	IP address of the SS			
media attribute		a= line attribute = fmtp		
fmtp				
format	"MCVideo"			
format specific parameters				SDP_OFF ER AND NOT WITHOUT _TRANSMI SSIONCO NTROL
mc_queueing	present	Parameter has no value	TS 24.581 [88] clause 14.2.2	
mc_priority	"5"	Any integer value in the range of 1..255	TS 24.581 [88] clause 14.2.3	
mc_granted	not present			
mc_implicit_request	not present			
mc_reception_priority	not present			
mc_audio_ssrc	not present	Rel-18		
mc_video_ssrc	not present	Rel-18		
mc_transmission_ssrc	not present	Rel-18		
format specific parameters				SDP_ANS WER AND NOT WITHOUT _TRANSMI SSIONCO NTROL
mc_queueing	present if included in the offer	Parameter has no value	TS 24.581 [88] clause 14.3.2	

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mc_priority	if a value is provided in the offer: "3" or the value provided in the offer, whichever is the lower value; otherwise not present	"3" is the value of the <user-priority> element for user A in the MCVideo Group Configuration (Table 5.5.7.2-1)	TS 24.581 [88] clause 14.3.3	
mc_granted	not present			
	present	Parameter has no value	TS 24.581 [88] clause 14.3.4	IMPLICIT_ FLOOR_G RANTED
mc_implicit_request	not present			
	present	Parameter has no value	TS 24.581 [88] clause 14.3.5	IMPLICIT_ GRANT_R EQUESTE D
mc_reception_priority	same value as in the SDP offer if present, not present otherwise		TS 24.581 [88] clause 14.3.6	
mc_audio_ssrc	not present	Rel-18		
mc_video_ssrc	not present	Rel-18		
mc_transmission_ssrc	not present	Rel-18		
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_EST ABLISHED _SESSION
candidate		candidate for Media Control messages		
foundation	4321	arbitrarily selected; different than for RTP/RTCP (audio, video)		
component-id	1	according to RFC 5245 [115] clause 4.1.1.1		
transport	"UDP"			
priority	2130706431	RFC 5245 [115] clause 4.2: $2^{24} * 126 +$ $2^8 * 65535 +$ 256 - component id		
connection-address	IP address of the SS (same IP address as in the c=line for media control)	default candidate		
port	same port number as in the m= line for application			
cand-type	"host"			

- MCData

Table 5.5.3.1.2-3: SDP Message from the SS for MCData

Derivation Path: RFC 4566 [27]				
Information Element	Value/remark	Comment	Reference	Condition
Session description:				
Protocol Version	"0"	v= line		
Origin	Same o=line as in the previous SDP message sent by the SS except that sess-version is incremented by one	o= line		
Origin		o= line		FIRST_SDP_FROM_SS
username	"-"	"-" indicating the concept of user IDs not being supported		
sess-id	"11111111"	A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session.		
sess-version	"11111111"			
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address			
unicast-address	IP address of the SS			
Session Name	" "	s= line		
Time description				
Timing		t= line		
start-time	"0"			
stop-time	"0"			
Session attribute		a=line attribute="ice-lite"	RFC 5245 [115]	PRE_ESTABLISHED_SESSION
ice-lite				
Media description[1]		**Media description for data**		
media description		m= line media = message	RFC 4867 [59] TS 24.282 [87]	
media	"message"			
port	port number assigned by the SS	The transport port to which the media stream is sent		
proto	"TCP/MSRP"			
fmt	"*"			
Connection Data		c= line		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address			
connection-address	IP address of the SS			
media attribute		a= line attribute = sendonly		SDP_OFFER AND NOT SDS_SESSION
sendonly		No parameters associated with this line		
media attribute		a= line attribute = recvonly		SDP_ANSWER AND NOT SDS_SESSION

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
recvonly		No parameters associated with this line		
media attribute		a= line attribute = sendrecv		SDS_SESSION
sendrecv		No parameters associated with this line		
media attribute		a= line attribute = path		
path	MSRP URI according to RFC 4975 [120] clause 6 and 9		TS 24.282 [87]	
scheme	"msrp"			
authority			RFC 3986 [123] clause 3.2	
userinfo	not present			
host	IP address of the SS			
port	same value as in the media line			
session id	assigned by the SS			
transport	"tcp"			
URI-parameter	not present			
media attribute		a= line attribute = accept-types	RFC 4975 [120]	
accept-types				
format-entry[1]	"application/vnd.3gpp. mcdata-signalling"			
format-entry[2]	"application/vnd.3gpp. mcdata-payload"			MCDATA_SDS
media attribute		a= line attribute = setup	RFC 4145 [119]	
setup	"actpass"			SDP_OFFER
	"passive"			SDP_ANSWER
media attribute		a= line attribute = file-transfer-id	RFC 5547 [124]	MCDATA_FD
file-transfer-id	value assigned by the SS	randomly chosen globally unique identification (RFC 5547 [124])		SDP_OFFER
	same value as in the sdp offer			SDP_ANSWER
media attribute		a= line attribute = file-selector	RFC 5547 [124]	MCDATA_FD
file-selector				SDP_OFFER
selector[1]				
filename	name of the file to be transferred	e.g. "TestFile.txt"		
filesize	size of the file to be transferred			
filetype	type of the file to be transferred	e.g. "text/plain"		
hash				
algorithm	"sha-1"			
value	hash value of the file to be transferred			
file-selector	same value as in the sdp offer			SDP_ANSWER
media attribute		a= line attribute = file-date	RFC 5547 [124]	MCDATA_FD AND SDP_OFFER

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
file-date				
date-param[1]				
type	"creation"			
date-time	date and time when the file has been created	e.g. "Mon, 20 Dec 2021 15:01:31 +0100"	RFC 5322 [109]	
media attribute		a= line attribute = key-mgmt		SDP_OFFER AND MCD_1to1
key-mgmt			TS 24.379 [9] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2 for condition MCDATA		RFC 4567 [44]	
media attribute		a=line attribute="candidate"	RFC 5245 [115]	PRE_EST ABLISHED _SESSION
candidate		candidate for TCP/MSRP		
foundation	1234	arbitrarily selected		
component-id	1	according to RFC 5245 [115] clause 4.1.1.1		
transport	"TCP/MSRP"			
priority	2130706431	RFC 5245 [115] clause 4.2: 224 * 126 + 28 * 65535 + 256 - component id		
connection-address	IP address of the SS (same IP address as in the c=line)	default candidate		
port	same port number as in the m= line			
cand-type	"host"			

5.5.3.1.3 SDP Message from the UE - Off-network

- MCPTT

Table 5.5.3.1.3-1: SDP Message from the UE - Off-network for MCPTT

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Session description:				
Protocol Version	"0"	v= line		
Origin		o= line		
username	"-"			
sess-id	any allowed value	A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session.		
sess-version	any allowed value			
nettype	"IN"			
addrtype	"IP4"	"IP4" or "IP6"		
unicast-address	px_MCPTT_IP_ConnectionAddressAll			
Session Name	"-"	s= line		
Connection Data		c= line		
nettype	"IN"			
addrtype	"IP4"	"IP4" or "IP6"		
connection-address	px_MCPTT_IP_ConnectionAddressAll	Set to the multicast IP address of the MCPTT group		
Bandwidth		b= line		
bwtype	"AS:"	bwtype:bandwidth		
bandwidth	any allowed value			
Time description				
Timing		t= line		
start-time	"0"			
stop-time	"0"			
Media descriptions				
media description		m= line media = audio		
media	"audio"			
port	any allowed value	Set to a port number for MCPTT speech of the MCPTT group		
proto	"RTP/AVP"			
fmt	any allowed value(s)	Indicating RTP payload type numbers		
media title	"speech"	i= line		
media attribute		a= line attribute = rtpmap		
rtpmap	"rtpmap"			
payload type	"99"			
encoding name	"AMR-WB"			
clock rate	16000			
encoding parameter	"1" if present	Channel number		
media attribute		a= line attribute = fmtp		
fmtp	"fmtp"			
format	the value given in fmt in the audio media description			
format specific parameters		Parameters of WB-AMR codec		
mode-change-capability	"2"	To be able to interoperate fully with gateways to circuit switched networks		
max-red	"0"	No redundancy will be used		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute		a= line attribute =ptime		
ptime	any allowed value	packet time		
media attribute		a= line attribute =maxptime		
maxptime	any allowed value	maximum packet time		
media description		m= line media = application		
media	"application"			
port	any allowed value	Set to a port number for media-floor control entity of the MCPTT group		
proto	"udp"			
fmt	"MCPTT"			
media attribute		a= line attribute = fmtp		
fmtp				
format	"MCPTT"			
format specific parameters				
mc_queueing	optional	Parameter has no value		
mc_priority	not present or any allowed value	Any integer value in the range of 1..255		
mc_granted	present	Parameter has no value		
mc_implicit_request	present	Parameter has no value		
media attribute		a= line attribute = key-mgmt		
key-mgmt				
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2			

- MCVideo

Table 5.5.3.1.3-2: SDP Message from the UE - Off-network for MCVideo

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Session description:				
Protocol Version	"0"	v= line		
Origin		o= line		
username	"-"			
sess-id	any allowed value	A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session.		
sess-version	any allowed value			
nettype	"IN"			
addrtype	"IP4"	"IP4" or "IP6"		
unicast-address	px_MCVideo_IP_ConnectionAddressAll			
Session Name	"-"	s= line		
Connection Data		c= line		
nettype	"IN"			
addrtype	"IP4"	"IP4" or "IP6"		
connection-address	px_MCVideo_IP_ConnectionAddressAll	Set to the multicast IP address of the MCVideo group		
Bandwidth		b= line		
bwtype	"AS:"	bwtype:bandwidth		
bandwidth	any allowed value			
Time description				
Timing		t= line		
start-time	"0"			
stop-time	"0"			
Media descriptions				
media description		m= line media = audio		
media	"audio"			
port	any allowed value	Set to a port number for MCVideo speech of the MCVideo group		
proto	"RTP/AVP"			
fmt	any allowed value(s)	Indicating RTP payload type numbers		
media title	"speech"	i= line		
media attribute		a= line attribute = rtpmap		
rtpmap	"rtpmap"			
payload type	"99"			
encoding name	"AMR-WB"			
clock rate	16000			
encoding parameter	"1" if present	Channel number		
media attribute		a= line attribute = fmtp		
fmtp	"fmtp"			
format	the value given in fmt in the audio media description			
format specific parameters		Parameters of WB-AMR codec		
mode-change-capability	"2"	To be able to interoperate fully with gateways to circuit switched networks		
max-red	"0"	No redundancy will be used		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute		a= line attribute =ptime		
ptime	any allowed value	packet time		
media attribute		a= line attribute =maxptime		
maxptime	any allowed value	maximum packet time		
media description		m= line media = video SDP media-level section for a media-transmission control entity		
media	"video"			
port	any allowed value	The port for the media-transmission control entity		
proto	"udp"	User Datagram Protocol. With UDP, computer applications can send messages to other hosts on an Internet Protocol (IP) network. Time-sensitive applications often use UDP because dropping packets is preferable to waiting for packets delayed due to retransmission, which may not be an option in a real-time system.		
fmt	"MCVideo"			
Connection Data		c= line Included if the media plane control channel uses a different IP address than other media described in the SDP		
nettype	"IN"			
addrtype	"IP4"			
connection-address	px_MCVideo_IP_ConnectionAddressApp			
media attribute		a= line attribute = rtpmap		
rtpmap	"rtpmap"			
payload type	""			
encoding name	"H.264"			
clock rate			RFC 4867 [59] clause 8.3	
encoding parameter	"" if present	Channel number		
media attribute		a= line attribute = fmtp		
fmtp			TS 24.581 [88] clause 12, clause 14	
format	"MCVideo"			
format specific parameters				

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mc_queueing	optional	Parameter has no value. Shall include the "mc_queueing" fmtp attribute in SDP offers when queueing of Transmission request is supported.	TS 24.581 [88] clause 12, clause 14	
mc_priority	not present or any allowed value	Any integer value in the range of 1..255 Shall include the "mc_priority" fmtp attribute when a transmission priority different than the default priority is required.	TS 24.581 [88] clause 12, clause 14	
mc_reception_priority	not present or any allowed value	Any integer value in the range of 0…255 Shall include the "mc_reception_priority" fmtp attribute when a reception priority different than the default reception priority is required.	TS 24.581 [88] clause 12, clause 14	
mc_granted	present	Parameter has no value Shall include the "mc_granted" fmtp attribute in the SDP offer of an initial SIP INVITE request when it is acceptable for the MCVideo client to receive a granted indication in the SIP 200 (OK) response to an initial INVITE request.	TS 24.581 [88] clause 12, clause 14	
mc_implicit_request	present	Parameter has no value Shall include the "mc_implicit_request" fmtp attribute when a SIP request shall be interpreted as an implicit Transmission request. If not explicitly stated in procedures in the present document or in procedures in TS 24.281 [2] that the "mc_implicit_request" fmtp attribute shall be included, the decision to include the "mc_implicit_request" fmtp attribute or not, is an implementation option.	TS 24.581 [88] clause 12, clause 14	
media attribute		a= line attribute = key-mgmt		PRIVATE-CALL

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
key-mgmt		Key Management attribute field in the media and session level.	TS 24.281 [86] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 6.1.1.1.3.3-3	MIKEY carries the security parameters needed for setting up the security protocol. It is a protocol designed for government and relevant enterprises to enable secure, cross-platform multimedia communications.	RFC 4567 [44]	
media description		m= line media = application		
media	"application"			
port	any allowed value	Set to a port number for media-floor control entity of the MCVideo group		
proto	"udp"			
fmt	"MCVideo"			
media attribute		a= line attribute = fmtp		
fmtp				
format	"MCVideo"			
format specific parameters				
mc_queueing	optional	Parameter has no value		
mc_priority	not present or any allowed value	Any integer value in the range of 1..255		
mc_granted	present	Parameter has no value		
mc_implicit_request	present	Parameter has no value		
media attribute		a= line attribute = key-mgmt		
key-mgmt				
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2A			

- MCData

Table 5.5.3.1.3-3: SDP Message from the UE - Off-network for MCData

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5.5.3.1.4 SDP Message from the SS - Off-network

- MCPTT

Table 5.5.3.1.4-1: SDP Message from the SS - Off-network for MCPTT

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Session description:				
Protocol Version	"0"	v= line		
Origin		o= line		
username	"-"			
sess-id	"12345678"	A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session.		
sess-version	"12345678"			
nettype	"IN"			
addrtype	"IP4"			
unicast-address	px_MCPTT_IP_ConnectionAddressAll			
Session Name	"-"	s= line		
Connection Data		c= line		
nettype	"IN"			
addrtype	"IP4"	"IP4" or "IP6"		
connection-address	px_MCPTT_IP_ConnectionAddressAll	Set to the multicast IP address of the MCPTT group		
Bandwidth		b= line		
bwtype	"AS:"	bwtype:bandwidth		
bandwidth	any allowed value			
Time description				
Timing		t= line		
start-time	"0"			
stop-time	"0"			
Media descriptions				
media description		m= line media = audio		
media	"audio"			
port	"49152"	Set to a port number for MCPTT speech of the MCPTT group		
proto	"RTP/AVP"			
fmt	"99"	Indicating RTP payload type numbers		
media title	"speech"	i= line		
media attribute		a= line attribute = rtpmap		
rtpmap	"rtpmap"			
payload type	"99"			
encoding name	"AMR-WB"			
clock rate	16000			
encoding parameter	"1" if present	Channel number		
media attribute		a= line attribute = fmtp		
fmtp	"fmtp"			
format	"99"			
format specific parameters		Parameters of WB-AMR codec		
mode-change-capability	"2"	To be able to interoperate fully with gateways to circuit switched networks		
max-red	"0"	No redundancy will be used		
media attribute		a= line attribute =ptime		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
ptime	"20"	packet time		
media attribute		a= line attribute =maxptime		
maxptime	"240"	maximum packet time		
media description		m= line media = application		
media	"application"			
port	"49153"	Set to a port number for media-floor control entity of the MCPTT group		
proto	"udp"			
fmt	"MCPTT"			
media attribute		a= line attribute = fmtp		
fmtp				
format	"MCPTT"			
format specific parameters				
mc_queueing	present	Parameter has no value		
mc_priority	"5"	Any integer value in the range of 1..255		
mc_granted	present	Parameter has no value		
mc_implicit_request	present	Parameter has no value		
media attribute		a= line attribute = key-mgmt		
key-mgmt				
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2			

- MCVideo

Table 5.5.3.1.4-2: SDP Message from the SS - Off-network for MCVideo

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Session description:				
Protocol Version	"0"	v= line		
Origin		o= line		
username	"-"			
sess-id	"12345678"	A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session.		
sess-version	"12345678"			
nettype	"IN"			
addrtype	"IP4"			
unicast-address	px_MCVideo_IP_ConnectionAddressAll			
Session Name	"-"	s= line		
Connection Data		c= line		
nettype	"IN"			
addrtype	"IP4"	"IP4" or "IP6"		
connection-address	px_MCVideo_IP_ConnectionAddressAll	Set to the multicast IP address of the MCVideo group		
Bandwidth		b= line		
bwtype	"AS:"	bwtype:bandwidth		
bandwidth	any allowed value			
Time description				
Timing		t= line		
start-time	"0"			
stop-time	"0"			
Media descriptions				
media description		m= line media = audio		
media	"audio"			
port	"49152"	Set to a port number for MCVideo speech of the MCVideo group		
proto	"RTP/AVP"			
fmt	"99"	Indicating RTP payload type numbers		
media title	"speech"	i= line		
media attribute		a= line attribute = rtpmap		
rtpmap	"rtpmap"			
payload type	"99"			
encoding name	"AMR-WB"			
clock rate	16000			
encoding parameter	"1" if present	Channel number		
media attribute		a= line attribute = fmtp		
fmtp	"fmtp"			
format	"99"			
format specific parameters		Parameters of WB-AMR codec		
mode-change-capability	"2"	To be able to interoperate fully with gateways to circuit switched networks		
max-red	"0"	No redundancy will be used		
media attribute		a= line attribute =ptime		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
ptime	"20"	packet time		
media attribute		a= line attribute =maxptime		
maxptime	"240"	maximum packet time		
media description		m= line media = video SDP media-level section for a media-transmission control entity		
media	"video"			
port	any allowed value	The port for the media-transmission control entity		
proto	"udp"	User Datagram Protocol. With UDP, computer applications can send messages to other hosts on an Internet Protocol (IP) network. Time-sensitive applications often use UDP because dropping packets is preferable to waiting for packets delayed due to retransmission, which may not be an option in a real-time system.		
fmt	"MCVideo"			
Connection Data		c= line Included if the media plane control channel uses a different IP address than other media described in the SDP		
nettype	"IN"			
addrtype	"IP4"			
connection-address	px_MCVideo_IP_ConnectionAddressApp			
media attribute		a= line attribute = rtpmap		
rtpmap	"rtpmap"			
payload type	""			
encoding name	"H.264"			
clock rate			RFC 4867 [59] clause 8.3	
encoding parameter	"" if present	Channel number		
media attribute		a= line attribute = fmtp		
fmtp			TS 24.581 [88] clause 12, clause 14	
format	"MCVideo"			
format specific parameters				

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mc_queueing	optional	Parameter has no value. Shall include the "mc_queueing" fmtp attribute in SDP offers when queueing of Transmission request is supported.	TS 24.581 [88] clause 12, clause 14	
mc_priority	not present or any allowed value	Any integer value in the range of 1..255 Shall include the "mc_priority" fmtp attribute when a transmission priority different than the default priority is required.	TS 24.581 [88] clause 12, clause 14	
mc_reception_priority	not present or any allowed value	Any integer value in the range of 0…255 Shall include the "mc_reception_priority" fmtp attribute when a reception priority different than the default reception priority is required.	TS 24.581 [88] clause 12, clause 14	
mc_granted	present	Parameter has no value Shall include the "mc_granted" fmtp attribute in the SDP offer of an initial SIP INVITE request when it is acceptable for the MCVideo client to receive a granted indication in the SIP 200 (OK) response to an initial INVITE request.	TS 24.581 [88] clause 12, clause 14	
mc_implicit_request	present	Parameter has no value Shall include the "mc_implicit_request" fmtp attribute when a SIP request shall be interpreted as an implicit Transmission request. If not explicitly stated in procedures in the present document or in procedures in TS 24.281 [2] that the "mc_implicit_request" fmtp attribute shall be included, the decision to include the "mc_implicit_request" fmtp attribute or not, is an implementation option.	TS 24.581 [88] clause 12, clause 14	
media attribute		a= line attribute = key-mgmt		PRIVATE-CALL

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
key-mgmt		Key Management attribute field in the media and session level.	TS 24.281 [86] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 6.1.1.1.3.3-3	MIKEY carries the security parameters needed for setting up the security protocol. It is a protocol designed for government and relevant enterprises to enable secure, cross-platform multimedia communications.	RFC 4567 [44]	
media description		m= line media = application		
media	"application"			
port	"49153"	Set to a port number for media-floor control entity of the MCVideo group		
proto	"udp"			
fmt	"MCVideo"			
media attribute		a= line attribute = fmtp		
fmtp				
format	"MCVideo"			
format specific parameters				
mc_queueing	present	Parameter has no value		
mc_priority	"5"	Any integer value in the range of 1..255		
mc_granted	present	Parameter has no value		
mc_implicit_request	present	Parameter has no value		
media attribute		a= line attribute = key-mgmt		
key-mgmt				
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2			

- MCData

Table 5.5.3.1.4-3: SDP Message from the SS - Off-network for MCData

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5.5.3.2 MCS Info Lists

5.5.3.2.1 MCS Info Lists from the UE

- MCPTT

Table 5.5.3.2.1-1: MCPTT-Info from the UE

Derivation Path: TS 24.379 [9] clause F.1.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-access-token	not present			
	Encrypted (NOTE 2) <mcptt-access-token> with mcpttString set to access token as assigned to the UE in the Token Response	The access token is opaque to the MCPTT client	TS 33.180 [94], clause B.4 RFC 6749 [77]	CONFIG, GROUPC ONFIG
session-type	not present			
	"prearranged"			GROUP-CALL AND INVITE_R EFER
	"private"			PRIVATE-CALL AND INVITE_R EFER
	"chat"			CHAT-GROUP-CALL AND INVITE_R EFER
	"first-to-answer"			FIRST-TO-ANSWER AND INVITE_R EFER
mcptt-request-uri	not present			
	Encrypted (NOTE 2) <mcptt-request-uri> with mcpttURI set to px_MCPTT_Group_A_I D	The URI of the group		(GROUP-CALL OR CHAT-GROUP-CALL) AND INVITE_R EFER
	not present or encrypted (NOTE 2) <mcptt-request-uri> with mcpttURI set to px_MCPTT_ID_User_B	The URI of the invited MCPTT Client		PRIVATE-CALL AND INVITE_R EFER
	encrypted (NOTE 2) <mcptt-request-uri> with mcpttURI set to px_MCPTT_ID_User_A			POC-SETTINGS -EVENT
mcptt-calling-user-id	not present or encrypted (NOTE 2) <mcptt-calling-user-id> with mcpttURI set to px_MCPTT_ID_User_A			
	not present			CONFIG, GROUPC ONFIG, POC-SETTINGS -EVENT
mcptt-called-party-id	not present			
	not present or encrypted (NOTE 2) <mcptt-called-party-id> with mcpttURI set to px_MCPTT_ID_User_A			INVITE-RSP
mcptt-calling-group-id	not present			
required	not present			

Derivation Path: TS 24.379 [9] clause F.1.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
emergency-ind	not present or encrypted (NOTE 2) <emergency-ind> with mcpttBoolean set to "false"			
	Encrypted (NOTE 2) <emergency-ind> with mcpttBoolean set to "true"			EMERGEN CY-CALL AND INVITE_R EFER
alert-ind	not present or encrypted (NOTE 2) <alert-ind> with mcpttBoolean set to "false"			
	Encrypted (NOTE 2) <alert-ind> with mcpttBoolean set to pc_MCX_EmergencyIn dWithAlertInd			EMERGEN CY-CALL AND INVITE_R EFER
imminentperil-ind	not present or encrypted (NOTE 2) <imminentperil-ind> with mcpttBoolean set to "false"			
	Encrypted (NOTE 2) < imminentperil -ind> with mcpttBoolean set to "true"			IMMPERIL -CALL AND INVITE_R EFER
broadcast-ind	not present or "false"			
	"true"			BROADCA ST-CALL
mc-org	not present			
floor-state	not present			
associated-group-id	not present			
	px_MCPTT_Group_A_I D if mcptt-request-uri contains a temporary group identity; otherwise, not present	if the <mcptt-request-uri> element contains a group identity then this element can include an MCPTT group ID associated with the group identity in the <mcptt-request-uri> element. E.g. if the <mcptt-request-uri> element contains a temporary group identity (TGI), then the <associated-group-id> element can contain the constituent MCPTT group ID	TS 24.379 [9] clause F.1.3	GROUP-CALL
originated-by	not present			
MKFC-GKTPs	not present			
mcptt-client-id	not present			

Derivation Path: TS 24.379 [9] clause F.1.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	encrypted (NOTE 2) <mcptt-client-id> with mcpttString set to valid UUID URN (NOTE 1)	The UUID URN of the MCPTT Client	RFC 4122 [106] TS 24.379 [9] clause 4.10	(GROUP-CALL OR CHAT-GROUP-CALL OR EMERGENCY-CALL OR IMMPERIL-CALL) AND INVITE_REFER
	not present or encrypted (NOTE 2) <mcptt-client-id> with mcpttString set to valid UUID URN (NOTE 1)			(PRIVATE-CALL OR FIRST-TO-ANSWER) AND INVITE_REFER
	not present or encrypted (NOTE 2) <mcptt-client-id> with mcpttString set to valid UUID URN (NOTE 1)	in general mcptt-client-id is not mandatory (e.g. for SIP SUBSCRIBE)	RFC 4122 [106] TS 24.379 [9] clause 4.10	CONFIG, GROUPCONFIG
	encrypted (NOTE 2) <mcptt-client-id> with mcpttString set to valid UUID URN (NOTE 1)	mcptt-client-id is mandatory in the SIP REGISTER or SIP PUBLISH for service authorisation according to TS 24.379 [9] clauses 7.2.1 and 7.2.2	RFC 4122 [106] TS 24.379 [9] clause 4.10	CONFIG AND REGISTER_PUBLISH
	encrypted (NOTE 2) <mcptt-client-id> with mcpttString set to valid UUID URN (NOTE 1)	mcptt-client-id is mandatory in SIP PUBLISH for MCPTT service settings only, according to TS 24.379 [9] clause 7.2.3	RFC 4122 [106] TS 24.379 [9] clause 4.10	POC-SETTINGS-EVENT
alert-ind-rcvd	not present			
anyExt	not present		TS 24.379 [9], clause F.1.3	
anyExt		anyExt shall not contain any further elements than listed below unless specified otherwise in the specific message content of a test case	TS 24.379 [9], clause F.1.3	FUNCTIONAL_ALIAS
functional-alias-URI	encrypted (NOTE 2) <functional-alias-URI> with mcpttURI set to px_MCPTT_ID_FA_A	set to the value of the functional alias that is used together with the "mcptt-calling-user-id"		

NOTE 1: The SS shall check the mcptt-client-id
    - at the first time being sent by the UE to be a valid UUID URN with a format like "urn:uuid:XXXXXXXX-YYYY-ZZZZ-yyyy-zzzzzzzzzzzz" according to RFC 4122 [106]
    - to be all the same UUID URN in subsequent messages.
NOTE 2: Encrypted element as described in Table 5.5.3.2.1-1A				

Condition	Explanation
REGISTER_PUBLISH	MCPTT-Info in SIP REGISTER or SIP PUBLISH request for service authorisation
INVITE_REFER	MCPTT-Info in SIP INVITE or SIP REFER request for call establishment
INVITE-RSP	MCPTT-Info in SIP response to a SIP INVITE NOTE: INVITE-RSP is inherited from the SIP response, i.e. it shall be considered as true whenever set for the SIP response
FUNCTIONAL_ALIAS	An active Functional Alias is used
For further conditions see table 5.5.1-1	

Table 5.5.3.2.1-1A: Encrypted MCPTT info parameter sent by the UE

Derivation Path: TS 24.379 [9] clauses F.1.2, F.1.3				
Information Element	Value/remark	Comment	Reference	Condition
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the mcptt parameter			

-                    MCVideo

Table 5.5.3.2.1-2: MCVideo-Info from the UE

Derivation Path: TS 24.281 [86] Clause F.1.2				
Information Element	Value/remark	Comment	Reference	Condition
mcvideoinfo				
mcvideo-Params				
mcvideo-access-token	not present			
	Encrypted (NOTE 2) <mcvideo-access-token> with mcvideoString set to access token as assigned to the UE in the Token Response	The access token is opaque to the MCVideo client	TS 33.180 [94], clause B.4 RFC 6749 [77]	CONFIG GROUPCONFIG
session-type	not present			
	"prearranged"			GROUP-CALL AND INVITE_REFER
	"private"			PRIVATE-CALL AND INVITE_REFER
	"chat"			CHAT-GROUP-CALL AND INVITE_REFER
mcvideo-request-uri	not present			
	Encrypted (NOTE 2) <mcvideo-request-uri> with mcvideoURI set to px_MCVideo_Group_A_ID	The URI of the group		(GROUP-CALL OR CHAT-GROUP-CALL) AND INVITE_REFER

	not present or Encrypted (NOTE 2) <mcvideo-request-uri> with mcvideoURI set to px_MCVideo_User_B_ID	The URI of the invited MCVideo Client		PRIVATE-CALL AND INVITE_REFER
	Encrypted (NOTE 2) <mcvideo-request-uri> with mcvideoURI set to px_MCVideo_User_A_ID			POC-SETTINGS-EVENT
mcvideo-calling-user-id	not present or Encrypted (NOTE 2) <mcvideo-request-uri> with mcvideoURI set to px_MCVideo_ID_User_A			
	not present			CONFIG, GROUPCONFIG, POC-SETTINGS-EVENT
mcvideo-called-party-id	not present			
	not present or Encrypted (NOTE 2) <mcvideo-request-uri> with mcvideoURI set to px_MCVideo_ID_User_A			INVITE-RSP
mcvideo-calling-group-id	not present			
required	not present			
emergency-ind	not present or encrypted (NOTE 2) <emergency-ind> with mcvideoBoolean set to "false"			
	encrypted (NOTE 2) <emergency-ind> with mcvideoBoolean set to true			EMERGENCY-CALL AND INVITE-REFER
alert-ind	not present or encrypted (NOTE 2) <alert-ind> with mcvideoBoolean set to "false"			
	encrypted (NOTE 2) <alert-ind> with mcvideoBoolean set to pc_MCX_EmergencyIndWithAlertInd			EMERGENCY-CALL AND INVITE_REFER
imminentperil-ind	not present or encrypted (NOTE 2) <imminentperil-ind> with mcvideoBoolean set to "false"			
	encrypted (NOTE 2) <imminentperil-ind> with mcvideoBoolean set to true			IMMPERIL-CALL AND INVITE-REFER
broadcast-ind	not present or "false"			
	"true"			BROADCAST-CALL
mc-org	not present			
associated-group-id	not present			

	px_MCVideo_Group_A _ID if mcvideo-request-uri contains a temporary group identity; otherwise, not present	if the <mcvideo-request-uri> element contains a group identity then this element can include an MCVideo group ID associated with the group identity in the <mcvideo-request-uri> element. E.g. if the <mcvideo-request-uri> element contains a temporary group identity (TGI), then the <associated-group-id> element can contain the constituent MCVideo group ID	TS 24.281 [86] clause F.1.3	GROUP-CALL
originated-by	not present			
MKFC-GKTPs	not present			
mcvideo-client-id	not present			
	encrypted (NOTE 2) < mcvideo-client-id> with mcvideoString set to valid UUID URN (NOTE 1)	The UUID URN of the MCVIDEO Client	RFC 4122 [106] TS 24.281 [86] clause 4.9	(GROUP-CALL OR CHAT-GROUP-CALL OR EMERGENCY-CALL OR IMMPERIL-CALL) AND INVITE_REFER
	not present or encrypted (NOTE 2) < mcvideo-client-id> with mcvideoString set to valid UUID URN (NOTE 1)			PRIVATE-CALL AND INVITE_REFER
	not present or encrypted (NOTE 2) < mcvideo-client-id> with mcvideoString set to valid UUID URN (NOTE 1)	in general mcvideo-client-id is not mandatory (e.g. for SIP SUBSCRIBE)	RFC 4122 [106] TS 24.281 [86] clause 4.9	CONFIG, GROUPCONFIG
	encrypted (NOTE 2) < mcvideo-client-id> with mcvideoString set to valid UUID URN (NOTE 1)	mcvideo-client-id is mandatory in the SIP REGISTER or SIP PUBLISH for service authorisation according to TS 24.281 [86] clauses 7.2.1 and 7.2.2	RFC 4122 [106] TS 24.281 [86] clause 4.9	CONFIG AND REGISTER _PUBLISH
	encrypted (NOTE 2) < mcvideo-client-id> with mcvideoString set to valid UUID URN (NOTE 1)	mcvideo-client-id is mandatory in SIP PUBLISH for MCVideo service settings only, according to TS 24.281 [86] clause 7.2.3	RFC 4122 [106] TS 24.281 [86] clause 4.9	POC-SETTINGS-EVENT
alert-ind-rcvd	not present			
anyExt	not present		TS 24.281 [86] clause F.1.3	

NOTE 1:	The SS shall check the mcvideo-client-id
	- at the first time being sent by the UE to be a valid UUID URN with a format like "urn:uuid:XXXXXXXX-YYYY-ZZZZ-yyyy-zzzzzzzzzzzz" according to RFC 4122 [106]
	- to be all the same UUID URN in subsequent messages.
NOTE 2:	Encrypted element as described in Table 5.5.3.2.1-2A

Condition	Explanation
REGISTER_PUBLISH	MCVideo-Info in SIP REGISTER or SIP PUBLISH request for service authorisation
INVITE_REFER	MCVideo-Info in SIP INVITE or SIP REFER request for call establishment
INVITE-RSP	MCVideo-Info in SIP response to a SIP INVITE
For further conditions see table 5.5.1-1	

Table 5.5.3.2.1-2A: Encrypted MCVideo info parameter sent by the UE

Derivation Path: TS 24.281 [86] clauses F.1.2, F.1.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the mcvideo parameter			

-              MCData

Table 5.5.3.2.1-3: MCData-Info from the UE

Derivation Path: TS 24.282 [87], Clause D.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcdata-info				
mcdata-Params				
mcdata-access-token	not present			
	Encrypted (NOTE 2) <mcdata-access-token> with mcdataString set to access token as assigned to the UE in the Token Response	The access token is opaque to the MCData client	TS 33.180 [94], clause B.4 RFC 6749 [77]	CONFIG GROUPCONFIG
request-type	not present			
	"one-to-one-sds"			MCD_1to1
	"group-sds"			MCD_grp
mcdata-request-uri	not present			
	Encrypted (NOTE 2) <mcdata-request-uri> with mcdataURI set to px_MCData_Group_A_ID			MCD_grp
	Encrypted (NOTE 2) <mcdata-request-uri> with mcdataURI set to px_MCData_Group_A_ID			POC-SETTINGS-EVENT
mcdata-calling-user-id	not present			
mcdata-called-party-id	not present			
mcdata-calling-group-id	not present			
alert-ind	not present			
originated-by	not present			
mcdata-client-id	not present			
	Encrypted (NOTE 2) <mcdata-client-id> with mcdataString set to valid UUID URN (NOTE 1)			MCD_grp
	Encrypted (NOTE 2) <mcdata-client-id> with mcdataString set to valid UUID URN (NOTE 1)			CONFIG AND PUBLISH
	not present or encrypted (NOTE 2) <mcdata-client-id> with mcdataString set to valid UUID URN (NOTE 1)	in general mcdata-client-id is not mandatory (e.g. for SIP SUBSCRIBE)		(CONFIG OR GROUPCONFIG) AND NOT REGISTER (NOTE 3)
	Encrypted (NOTE 2) <mcdata-client-id> with mcdataString set to valid UUID URN (NOTE 1)	mcdata-client-id is mandatory in SIP PUBLISH for MCData service settings only, according to TS 24.282 [87] clause 7.2.3	RFC 4122 [106]	POC-SETTINGS-EVENT
mcdata-controller-psi	not present			
anyExt	not present			
anyExt		anyExt shall not contain any further elements than listed below unless specified otherwise in the specific message content of a test case		PRE_ESTABLISHED_SESSION OR FUNCTIONAL_ALIAS

pre-established-session-ind	"true"	TS 24.282 [87], Clause 18.3.2.1		PRE_EST ABLISHED _SESSION
functional-alias-URI	encrypted (NOTE 2) <functional-alias-URI> with mcdataURI set to px_MCData_ID_FA_A	set to the value of the functional alias that is used together with the "mcdata-calling-user-id"		FUNCTIO NAL_ALIA S
NOTE 1: The SS shall check the mcdata-client-id - at the first time being sent by the UE to be a valid UUID URN with a format like "urn:uuid:XXXXXXXX-YYYY-ZZZZ-yyyy-zzzzzzzzzzzz" according to RFC 4122 [106] - to be all the same UUID URN in subsequent messages. NOTE 2: Encrypted element as described in Table 5.5.3.2.1-3A NOTE 3: In contrast to MCPTT and MCVideo for MCData TS 24.282 [87] clause 7.2.1 does not specify the client-id to be included in the REGISTER request.				

Condition	Explanation
MCD_1to1	A one-to-one MCData call
MCD_grp	A goup MCData call
REGISTER	MCData-Info in SIP REGISTER request for service authorisation
PUBLISH	MCData-Info in SIP PUBLISH request for service authorisation
PRE_ESTABLISHED_SESSION	A pre-established sessions is being established
FUNCTIONAL_ALIAS	An active Functional Alias is used
For further conditions see table 5.5.1-1	

Table 5.5.3.2.1-3A: Encrypted MCData info parameter sent by the UE

Derivation Path: TS 24.282 [87] clauses D.1.2, D.1.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the mcdata parameter			

5.5.3.2.2 MCS Info Lists from the SS

- MCPTT

Table 5.5.3.2.2-1: MCPTT-Info from the SS

Derivation Path: TS 24.379 [9] clause F.1.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-access-token	not present			
session-type	not present			
	"prearranged"			GROUP-CALL
	"private"			PRIVATE-CALL
	"chat"			CHAT-GROUP-CALL
	"first-to-answer"			FIRST-TO-ANSWER
mcptt-request-uri	Encrypted (NOTE 1) <mcptt-request-uri> with mcpttURI set to px_MCPTT_ID_User_A	The URI of the called user		
mcptt-calling-user-id	Encrypted (NOTE 1) <mcptt-calling-user-id> with mcpttURI set to px_MCPTT_ID_User_B	The URI of the calling user		
mcptt-called-party-id	not present			
mcptt-calling-group-id	not present			
	Encrypted (NOTE 1) <mcptt-calling-group-id> with mcpttURI set to px_MCPTT_Group_A_ID	The URI of the group		GROUP-CALL OR CHAT-GROUP-CALL
required	not present			
emergency-ind	not present			
	Encrypted (NOTE 1) <emergency-ind> with mcpttBoolean set to "true"			EMERGENCY-CALL
alert-ind	not present			
	Encrypted (NOTE 1) <alert-ind> with mcpttBoolean set to "false"			EMERGENCY-CALL
imminentperil-ind	not present			
	Encrypted (NOTE 1) <imminentperil-ind> with mcpttBoolean set to "true"			IMMPERIL-CALL
broadcast-ind	not present			
	"true"			BROADCAST-CALL
mc-org	not present			
floor-state	not present			
associated-group-id	not present			
originated-by	not present			
MKFC-GKTPs	not present			
mcptt-client-id	not present			
alert-ind-rcvd	not present			
anyExt	not present		TS 24.379 [9], clause F.1.3	
NOTE 1: Encrypted element as described in Table 5.5.3.2.2-1A				

Table 5.5.3.2.2-1A: Encrypted MCPTT info parameter sent by the SS

Derivation Path: TS 24.379 [9] clauses F.1.2, F.1.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.2-2 containing encrypted element content of the mcptt parameter			

- MCVideo

Table 5.5.3.2.2-2: MCVideo-Info from the SS

Derivation Path: TS 24.281 [86] Clause F.1.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcvideoinfo				
mcvideo-Params				
mcvideo-access-token	not present			
session-type	not present			
	"prearranged"			GROUP-CALL
	"private"			PRIVATE-CALL
	"chat"			CHAT-GROUP-CALL
mcvideo-request-uri	Encrypted (NOTE 1) <mcvideo-request-uri> with mcvideoURI set to px_MCVideo_ID_User_A	The URI of the called user		
mcvideo-calling-user-id	Encrypted (NOTE 1) <mcvideo-calling-user-id> with mcvideoURI set to px_MCVideo_ID_User_B	The URI of the calling user		
mcvideo-called-party-id	not present			
mcvideo-calling-group-id	not present			
	Encrypted (NOTE 1) <mcvideo-calling-group-id> with mcvideoURI set to px_MCVideo_Group_A_ID	The URI of the group		GROUP-CALL OR CHAT-GROUP-CALL
required	not present			
emergency-ind	Encrypted (NOTE 1) <emergency-ind> with mcvideoBoolean set to "false"			
	Encrypted (NOTE 1) <emergency-ind> with mcvideoBoolean set to "true"			EMERGENCY-CALL
alert-ind	not present			
	Encrypted (NOTE 1) <alert-ind> with mcvideoBoolean set to "false"			EMERGENCY-CALL
imminentperil-ind	not present			

Derivation Path: TS 24.281 [86] Clause F.1.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	Encrypted (NOTE 1) \<imminentperil-ind> with mcvideoBoolean set to "true"			IMMPERIL -CALL
broadcast-ind	not present			
	"true"			BROADCA ST-CALL
mc-org"	not present			
associated-group-id	not present			
originated-by	not present			
MKFC-GKTPs	not present			
mcvideo-client-id	not present			
alert-ind-rcvd	not present			
anyExt	not present		TS 24.281 [86] clause F.1.3	
NOTE 1: Encrypted element as described in Table 5.5.3.2.2-2A				

Table 5.5.3.2.2-2A: Encrypted MCVideo info parameter sent by the SS

Derivation Path: TS 24.281 [86] clauses F.1.2, F.1.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.2-2 containing encrypted element content of the mcvideo parameter			

-                         MCData

Table 5.5.3.2.2-3: MCData-Info from the SS

Derivation Path: TS 24.282 [87], Clause D.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcdata-info				
mcdata-Params				
mcdata-access-token	not present			
request-type	not present			
	"one-to-one-sds"			MCD_1to1
	"group-sds"			MCD_grp
mcdata-request-uri	Encrypted (NOTE 1) <mcdata-request-uri> with mcdataURI set to px_MCData_ID_User_A			
mcdata-calling-user-id	Encrypted (NOTE 1) <mcdata-calling-user-id> with mcdataURI set to px_MCData_ID_User_B			
mcdata-called-party-id	not present			
mcdata-calling-group-id	not present			
	Encrypted (NOTE 1) <mcdata-calling-group-id> with mcdataURI set to px_MCData_Group_A_ID			MCD_grp
alert-ind	not present			
originated-by	not present			
mcdata-client-id	not present			
	Encrypted (NOTE 1) <mcdata-client-id> with mcdataString set to px_MCX_Client_B_ID			MCD_grp
mcdata-controller-psi	not present			
anyExt	not present			
NOTE 1: Encrypted element as described in Table 5.5.3.2.2-3A				

Condition	Explanation
MCD_1to1	A one-to-one MCData call
MCD_grp	A group MCData call
For further conditions see table 5.5.1-1	

Table 5.5.3.2.2-3A: Encrypted MCData info parameter sent by the SS

Derivation Path: TS 24.282 [87] clauses D.1.2, D.1.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.232 containing encrypted element content of the mcdata parameter			

5.5.3.3 Resource-lists

5.5.3.3.1 Resource-lists from the UE for call control

- MCPTT

Table 5.5.3.3.1-1: Resource-lists from the UE for call control in MCPTT

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: RFC 5366 [35] / RFC 4826 [83]				
resource-lists	encrypted (NOTE 1)			
list[1]	encrypted (NOTE 1)			
name attribute	Not present			
display-name	Not present			
entry[1]	NOTE 1, 2			
uri attribute	px_MCPTT_ID_User_B	The MCPTT ID of the invited user		
	SIP-URI with px_MCPTT_Group_A_ID (NOTE 3) extended with SIP URI header fields as specified for the SIP REFER message	SIP-URI: prearranged MCPTT group identity or chat group identity extended with header fields		PRE-ESTABLISH AND (GROUP-CALL OR CHAT-GROUP-CALL)
	SIP-URI with px_MCPTT_ID_User_B (NOTE 3) extended with SIP URI header fields as specified for the SIP REFER message	SIP-URI: MCPTT ID of the called user extended with header fields		PRE-ESTABLISH AND (PRIVATE-CALL OR FIRST-TO-ANSWER)
display-name	not present			
entry[2]	NOTE 1, 2			FIRST-TO-ANSWER
uri attribute	px_MCPTT_ID_User_C			
display-name	not present			
entry[2]	NOTE 1, 2			PRE-ESTABLISH AND FIRST-TO-ANSWER
uri attribute	SIP-URI with px_MCPTT_ID_User_C (NOTE 3) extended with SIP URI header fields as specified for the SIP REFER message	SIP-URI: MCPTT ID of the called user extended with header fields		
display-name	not present			
NOTE 1: XML encryption may be done by				
- element content encryption of the root element <resource-lists> as described in Table 5.5.13.2-1				
- element content encryption of (each) <list> element as described in Table 5.5.13.2-1				
- attribute URI encryption of the entry's uri attribute as described in Table 5.5.13.3-1				
NOTE 2: When a resource-lists document contains more than one entry, the entries may be in any order				
NOTE 3: TS 23.179 [8] specifies MCPTT ID and MCPTT group ID (clause 8.1.3.1) to be a URIs but does not mandate them to be a SIP URIs; nevertheless according to TS 24.379 [9] (clauses 10.1.1.2.2.1, 10.1.2.2.2.1) the URI in the uri attribute of the resource-lists' <entry> element needs to be a SIP URI.				

Condition	Explanation
PRE-ESTABLISH	Call establishment using a pre-established session
For further conditions see table 5.5.1-1	

- MCVideo

Table 5.5.3.3.1-2: Resource-lists from the UE for call control in MCVideo

Derivation Path: RFC 5366 [35] / RFC 4826 [83]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
resource-lists	encrypted (NOTE 1)			
list[1]	encrypted (NOTE 1)			
name attribute	Not present			
display-name	Not present			
entry[1]	NOTE 1, 2			
uri attribute	px_MCVideo_ID_User_B	The MCVideo ID of the invited user		
display-name	Not present			
NOTE 1: XML encryption may be done by - element content encryption of the root element <resource-lists> as described in Table 5.5.13.2-1 - element content encryption of (each) <list> element as described in Table 5.5.13.2-1 - attribute URI encryption of the entry's uri attribute as described in Table 5.5.13.3-1 NOTE 2: When a resource-lists document contains more than one entry, the entries may be in any order.				

- MCData

Table 5.5.3.3.1-3: Resource-lists from the UE for call control in MCData

Derivation Path: RFC 5366 [35] / RFC 4826 [83]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
resource-lists	encrypted (NOTE 1)			
list	encrypted (NOTE 1)			
name attribute	Not present			
display-name	Not present			
entry[1]	NOTE 1, 2			
uri attribute	px_MCData_ID_User_B	The MCData ID of the target MCData user		
	SIP-URI with px_MCData_Group_A_ID (NOTE 3) extended with SIP URI header fields as specified for the SIP REFER message	SIP-URI: prearranged MCData group identity with header fields		PRE-ESTABLISH AND MCD_grp
	SIP-URI with px_MCData_ID_User_B (NOTE 3) extended with SIP URI header fields as specified for the SIP REFER message	SIP-URI: MCData ID of the called user extended with header fields		PRE-ESTABLISH AND MCD_1to1
display-name	not present			
NOTE 1: XML encryption may be done by - element content encryption of the root element <resource-lists> as described in Table 5.5.13.2-1 - element content encryption of (each) <list> element as described in Table 5.5.13.2-1 - attribute URI encryption of the entry's uri attribute as described in Table 5.5.13.3-1 NOTE 2: When a resource-lists document contains more than one entry, the entries may be in any order. NOTE 3: According to TS 24.282 [87] (clauses 9.2.5.2.1.1, 9.2.5.3.1.1) the URI in the uri attribute of the resource-lists' <entry> element needs to be a SIP URI.				

Condition	Explanation
PRE-ESTABLISH	Call establishment using a pre-established session
MCD_1to1	A one-to-one MCData call
MCD_grp	A group MCData call
For further conditions see table 5.5.1-1	

5.5.3.3.1A   Resource-lists from the UE for initial configuration

Table 5.5.3.3.1A-1: Resource-lists from the UE for initial configuration

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: RFC 5366 [35] / RFC 4826 [83]				
resource-lists	encrypted (NOTE 1)		TS 24.481 [11] TS 24.484 [14]	
list[1]	encrypted (NOTE 1)			
name attribute	not present			
display-name	Not present			
entry[1]	NOTE 1, 2		TS 24.484 [14]	CONFIG
uri attribute	AUID-ue-config & "/users/" & XUID & "/" & MCSUEID & "/"	UE Configuration document (NOTE 3)		
	AUID-ue-config & "/users/" & XUID & "/"	Editor's note: It is not clear in the core specs whether both options are allowed or only one of both; if the UE is allowed not to include the MCSUEID, it is not clear where the MC server gets it from		
display-name	Not present			
entry[2]	NOTE 1, 2		TS 24.484 [14]	CONFIG
uri attribute	AUID-user-profile & "/users/" & XUID & "/"	UE User Profile document (NOTE 3)		
display-name	Not present			
entry[3]	NOTE 1, 2		TS 24.484 [14]	CONFIG
uri attribute	AUID-service-config & "/global/service-config.xml"	UE Service Configuration document (NOTE 3)		
display-name	Not present			
entry[1]	NOTE 1, 2		TS 24.484 [14]	GROUPCONFIG
uri attribute	"org.openmobilealliance.groups/global/byGroupID/" & Group-ID	UE Group Configuration document		
display-name	Not present			
entry[2]	NOTE 1, 2		TS 24.481 [11]	GROUPCONFIG AND GROUPKEY
uri attribute	Doc-Sel_T & "~~" & Node-Sel	MCPTT-GKTP document (NOTE 3)		
display-name	Not present			
entry[1]	NOTE 1, 2		TS 24.481 [11]	GROUPKEY AND NOT GROUPCONFIG
uri attribute	Doc-Sel & "~~" & Node-Sel	MCPTT-GKTP document (NOTE 3)		
display-name	Not present			
NOTE 1: XML encryption may be done by				
- element content encryption of the root element <resource-lists> as described in Table 5.5.13.2-1				
- element content encryption of (each) <list> element as described in Table 5.5.13.2-1				
- attribute URI encryption of the entry's uri attribute as described in Table 5.5.13.3-1				
NOTE 2: When a resource-lists document contains more than one entry, the entries may be in any order.				
NOTE 3: The terms AUID-ue-config, AUID-user-profile, AUID-service-config, XUID, Group-ID, Doc-Sel, Node-Sel and MCSUEID are defined in table 5.5.3.3.1A-2.				

Table 5.5.3.3.1A-2: Terms used in Resource-lists' URIs

Term	Value	Condition
AUID-ue-config	"org.3gpp.mcptt.ue-config"	MCPTT
	"org.3gpp.mcvideo.ue-config"	MCVideo
	"org.3gpp.mcdata.ue-config"	MCData
AUID-user-profile	"org.3gpp.mcptt.user-profile"	MCPTT
	"org.3gpp.mcvideo.user-profile"	MCVideo
	"org.3gpp.mcdata.user-profile"	MCData
AUID-service-config	"org.3gpp.mcptt.service-config"	MCPTT
	"org.3gpp.mcvideo.service-config"	MCVideo
	"org.3gpp.mcdata.service-config"	MCData
XUID	"sip:" & px_MCPTT_ID_User_A	MCPTT
	"sip:" & px_MCVideo_ID_User_A	MCVideo
	"sip:" & px_MCData_ID_User_A	MCData
Group-ID	px_MCPTT_Group_A_ID	MCPTT
	px_MCVideo_Group_A_ID	MCVideo
	px_MCData_Group_A_ID	MCData
Doc-Sel	"org.3gpp.MCPTT-GKTP/global/byGroupID/" & Group-ID & "/"	
Node-Sel	"/group/list-service/mgktp:GKTPs?xmlns(mgktp=urn:3gpp:ns:mcpttGKTP:1.0)"	
MCSUEID	Instance id of the UE (derived from the IMEI according to 23.003 [69] clause 13.8)	

5.5.3.3.2 Resource-lists from the SS

- MCPTT

Table 5.5.3.3.2-1: Resource-lists from the SS for MCPTT

Derivation Path: RFC 5366 [35] / RFC 4826 [83]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
resource-lists	Editor's note: XML element content encryption to be added			
name attribute	Not present			
display-name	Not present			
list				
entry[1]				
uri attribute	px_MCPTT_ID_User_A	The MCPTT ID of the invited user		
display-name	Not present			

- MCVideo

Table 5.5.3.3.2-2: Resource-lists from the SS for MCVideo

Derivation Path: RFC 5366 [35] / RFC 4826 [83]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
resource-lists	Editor's note: XML element content encryption to be added			
list				
entry[1]				
uri attribute	px_MCVideo_ID_User_A	The MCVideo ID of the invited user		
display name	not present			

-                          MCData

Table 5.5.3.3.2-3: Resource-lists from the SS for MCData

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: RFC 5366 [35] / RFC 4826 [83]				
resource-lists	Editor's note: XML element content encryption to be added			
list				
entry[1]				
uri attribute	px_MCData_ID_User_A	The MCData ID of the invited user		
display name	not present			

5.5.3.4 Location-info

5.5.3.4.1 Location-info (Report from the UE)

- MCPTT

Table 5.5.3.4.1-1: Location-info (Report from the UE) for MCPTT

Derivation Path: TS 24.379 [9] clause F.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Report				
ReportID attribute	not present	Attribute is used to return the value in the <RequestId> attribute in the <Request> element. Only present in response to a Location-Info Request.		
ReportType attribute	"Emergency"	Required The <ReportType> attribute has two values "Emergency" and "NonEmergency" used to inform whether the client is sending the report in an emergency situation or not.		
TriggerID	not present	An element which can occur multiple times. Contains the value of the <TriggerId> attribute associated with a trigger that has fired. Only present if a trigger is the cause of the Location-info Report.		
CurrentLocation		A mandatory element that contains the location information		
CurrentServingEcgi	Encrypted (NOTE 2) <CurrentServingEcgi> with any content if present	This is optional depending on the configuration sent by the SS		
NeighbouringEcgi	Encrypted (NOTE 2) <NeighbouringEcgi> with any content if present	This is optional depending on the configuration sent by the SS		
MbmsSaId	Encrypted (NOTE 2) <MbmsSaId> with any content if present	This is optional depending on the configuration sent by the SS		
MbsfnArea	Encrypted (NOTE 2) <MbsfnArea> with any content if present	This is optional depending on the configuration sent by the SS		
CurrentCoordinate	if present	This is optional depending on the configuration sent by the SS		
longitude	Encrypted (NOTE 1) <longitude> with any content			
latitude	Encrypted (NOTE 1) <latitude> with any content			
NOTE 1: Encrypted sub-element of <CurrentCoordinate> as described in Table 5.5.3.4.1-1A NOTE 2: Encrypted sub-element of <CurrentLocation> as described in Table 5.5.3.4.1-1B				

Table 5.5.3.4.1-1A: Encrypted sub-element of <CurrentCoordinate> sent by the UE

Derivation Path: TS 24.379 [9] clause F.3.2 (tCoordinateType)				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the sub-element of <CurrentCoordinate>			

Table 5.5.3.4.1-1B: Encrypted sub-element of <CurrentLocation> sent by the UE

Derivation Path: TS 24.379 [9] clause F.3.2 (tCurrentLocationType)				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the sub-element of <CurrentLocation>			

- MCVideo

Table 5.5.3.4.1-2: Location-info (Report from the UE) for MCVideo

Derivation Path: TS 24.281 [86] clause F.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Report				
ReportID attribute	not present	Attribute is used to return the value in the <RequestId> attribute in the <Request> element. Only present in response to a Location-Info Request.		
ReportType attribute	"Emergency"	Required The <ReportType> attribute has two values "Emergency" and "NonEmergency" used to inform whether the client is sending the report in an emergency situation or not.		
TriggerID	not present	An element which can occur multiple times. Contains the value of the <TriggerId> attribute associated with a trigger that has fired. Only present if a trigger is the cause of the Location-info Report.		
CurrentLocation		A mandatory element that contains the location information		
CurrentServingEcgi	Encrypted (NOTE 2) <CurrentServingEcgi> with any content if present	This is optional depending on the configuration sent by the SS		
NeighbouringEcgi	Encrypted (NOTE 2) <NeighbouringEcgi> with any content if present	This is optional depending on the configuration sent by the SS		
MbmsSaId	Encrypted (NOTE 2) <MbmsSaId> with any content if present	This is optional depending on the configuration sent by the SS		
MbsfnArea	Encrypted (NOTE 2) <MbsfnArea> with any content if present	This is optional depending on the configuration sent by the SS		
CurrentCoordinate	if present	This is optional depending on the configuration sent by the SS		
longitude	Encrypted (NOTE 1) <longitude> with any content			
latitude	Encrypted (NOTE 1) <latitude> with any content			
NOTE 1: Encrypted sub-element of <CurrentCoordinate> as described in Table 5.5.3.4.1-2A				
NOTE 2: Encrypted sub-element of <CurrentLocation> as described in Table 5.5.3.4.1-2B				

Table 5.5.3.4.1-2A: Encrypted sub-element of <CurrentCoordinate> sent by the UE

Derivation Path: TS 24.281 [86] clause F.3.2 (tCoordinateType)				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the sub-element of <CurrentCoordinate>			

Table 5.5.3.4.1-2B: Encrypted sub-element of <CurrentLocation> sent by the UE

Derivation Path: TS 24.281 [86] clause F.3.2 (tCurrentLocationType)				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the sub-element of <CurrentLocation>			

-                    MCData

Table 5.5.3.4.1-3: Location-info (Report from the UE) for MCData

Derivation Path: TS 24.282 [87] clause D.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Report				
ReportID attribute	not present	Attribute is used to return the value in the <RequestId> attribute in the <Request> element. Only present in response to a Location-Info Request.		
ReportType attribute	"Emergency"	Required The <ReportType> attribute has two values "Emergency" and "NonEmergency" used to inform whether the client is sending the report in an emergency situation or not.		
TriggerID	not present	An element which can occur multiple times. Contains the value of the <TriggerId> attribute associated with a trigger that has fired. Only present if a trigger is the cause of the Location-info Report.		
CurrentLocation		A mandatory element that contains the location information		
CurrentServingEcgi	Encrypted (NOTE 2) <CurrentServingEcgi> with any content if present	This is optional depending on the configuration sent by the SS		
NeighbouringEcgi	Encrypted (NOTE 2) <NeighbouringEcgi> with any content if present	This is optional depending on the configuration sent by the SS		
MbmsSaId	Encrypted (NOTE 2) <MbmsSaId> with any content if present	This is optional depending on the configuration sent by the SS		
MbsfnArea	Encrypted (NOTE 2) <MbsfnArea> with any content if present	This is optional depending on the configuration sent by the SS		
CurrentCoordinate	if present	This is optional depending on the configuration sent by the SS		
longitude	Encrypted (NOTE 1) <longitude> with any content			
latitude	Encrypted (NOTE 1) <latitude> with any content			
NOTE 1: Encrypted sub-element of <CurrentCoordinate> as described in Table 5.5.3.4.1-2A				
NOTE 2: Encrypted sub-element of <CurrentLocation> as described in Table 5.5.3.4.1-2B				

Table 5.5.3.4.1-3A: Encrypted sub-element of <CurrentCoordinate> sent by the UE

Derivation Path: TS 24.282 [87] clause d.4.2 (tCoordinateType)				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the sub-element of <CurrentCoordinate>			

Table 5.5.3.4.1-3B: Encrypted sub-element of <CurrentLocation> sent by the UE

Derivation Path: TS 24.282 [87] clause D.4.2 (tCurrentLocationType)				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the sub-element of <CurrentLocation>			

5.5.3.4.2   Location-info (Configuration sent by the SS)

-                   MCPTT

Table 5.5.3.4.2-1: Location-info (Configuration sent by the SS) for MCPTT

Derivation Path: TS 24.379 [9] clause F.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Configuration				
ConfigScope	"Full"	The MCPTT Client shall replace any previous configuration.		
NonEmergencyLocationInformation				
ServingEcgi	present	An optional element specifying that the serving E-UTRAN Cell Global Identity (ECGI) needs to be reported		
NeighbouringEcgi	present	An optional element that can occur multiple times, specifying that neighbouring ECGIs need to be reported		
MbmsSaId	present	An optional element specifying that the serving MBMS Service Area Id needs to be reported;		
MbsfnArea	present	An optional element specifying that the MBSFN area Id needs to be reported;		
GeographicalCoordinate	present	An optional element specifying that the geographical coordinate specified in clause 6.1 in 3GPP TS 23.032 [65] needs to be reported		
minimumIntervalLength	"10"	A mandatory element specifying the minimum time the MCPTT client needs to wait between sending location reports. The value is given in seconds		
EmergencyLocationInformation"				
ServingEcgi	present	An optional element specifying that the serving E-UTRAN Cell Global Identity (ECGI) needs to be reported		
NeighbouringEcgi	present	An optional element that can occur multiple times, specifying that neighbouring ECGIs need to be reported		
MbmsSaId	present	An optional element specifying that the serving MBMS Service Area Id needs to be reported;		
MbsfnArea	present	An optional element specifying that the MBSFN area Id needs to be reported;		

Derivation Path: TS 24.379 [9] clause F.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
GeographicalCoordinate	present	An optional element specifying that the geographical coordinate specified in clause 6.1 in 3GPP TS 23.032 [65] needs to be reported		
minimumIntervalLength	"5"	A mandatory element specifying the minimum time the MCPTT client needs to wait between sending location reports. The value is given in seconds		
TriggeringCriteria				
CellChange	not present			
TrackingAreaChange	not present			
PlmnChange	not present			
MbmsSaChange	not present			
MbsfnAreaChange	not present			
PeriodicReport	not present			
TravelledDistance	not present			
McpttSignallingEvent	not present			
GeographicalAreaChange				
AnyAreaChange	not present			
EnterSpecificAreaType	not present			
ExitSpecificAreaType	not present			
anyExt		mandatory for Rel-15 and above		
EmergencyTriggeringCriteria				
CellChange	not present			
TrackingAreaChange	not present			
PlmnChange	not present			
MbmsSaChange	not present			
MbsfnAreaChange	not present			
PeriodicReport	not present			
TravelledDistance	not present			
McpttSignallingEvent	not present			
GeographicalAreaChange				
AnyAreaChange	not present			
EnterSpecificAreaType	not present			
ExitSpecificAreaType	not present			

-        MCVideo

Table 5.5.3.4.2-2: Location-info (Configuration sent by the SS) for MCVideo

Derivation Path: TS 24.281 [86] clause F.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Configuration				
ConfigScope	"Full"	The MCVideo Client shall replace any previous configuration.		
NonEmergencyLocationInformation				
ServingEcgi	present	An optional element specifying that the serving E-UTRAN Cell Global Identity (ECGI) needs to be reported		
NeighbouringEcgi	present	An optional element that can occur multiple times, specifying that neighbouring ECGIs need to be reported		
MbmsSaId	present	An optional element specifying that the serving MBMS Service Area Id needs to be reported;		
MbsfnArea	present	An optional element specifying that the MBSFN area Id needs to be reported;		
GeographicalCoordinate	present	An optional element specifying that the geographical coordinate specified in clause 6.1 in 3GPP TS 23.032 [65] needs to be reported		
minimumIntervalLength	"10"	A mandatory element specifying the minimum time the MCVIdeo client needs to wait between sending location reports. The value is given in seconds		
EmergencyLocationInformation"				
ServingEcgi	present	An optional element specifying that the serving E-UTRAN Cell Global Identity (ECGI) needs to be reported		
NeighbouringEcgi	present	An optional element that can occur multiple times, specifying that neighbouring ECGIs need to be reported		
MbmsSaId	present	An optional element specifying that the serving MBMS Service Area Id needs to be reported;		
MbsfnArea	present	An optional element specifying that the MBSFN area Id needs to be reported;		

Derivation Path: TS 24.281 [86] clause F.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
GeographicalCoordinate	present	An optional element specifying that the geographical coordinate specified in clause 6.1 in 3GPP TS 23.032 [65] needs to be reported		
minimumIntervalLength	"5"	A mandatory element specifying the minimum time the MCVideo client needs to wait between sending location reports. The value is given in seconds		
TriggeringCriteria				
CellChange	not present			
TrackingAreaChange	not present			
PlmnChange	not present			
MbmsSaChange	not present			
MbsfnAreaChange	not present			
PeriodicReport	not present			
TravelledDistance	not present			
McvideoSignallingEvent	not present			
GeographicalAreaChange				
AnyAreaChange	not present			
EnterSpecificAreaType	not present			
ExitSpecificAreaType	not present			

-         MCData

Table 5.5.3.4.2-3: Location-info (Configuration sent by the SS) for MCData

Derivation Path: TS 24.281 [86] clause F.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Configuration				
ConfigScope	"Full"	The MCData Client shall replace any previous configuration.		
NonEmergencyLocationInformation				
ServingEcgi	present	An optional element specifying that the serving E-UTRAN Cell Global Identity (ECGI) needs to be reported		
NeighbouringEcgi	present	An optional element that can occur multiple times, specifying that neighbouring ECGIs need to be reported		
MbmsSaId	present	An optional element specifying that the serving MBMS Service Area Id needs to be reported;		
MbsfnArea	present	An optional element specifying that the MBSFN area Id needs to be reported;		
GeographicalCoordinate	present	An optional element specifying that the geographical coordinate specified in clause 6.1 in 3GPP TS 23.032 [65] needs to be reported		
minimumIntervalLength	"10"	A mandatory element specifying the minimum time the MCData client needs to wait between sending location reports. The value is given in seconds		
EmergencyLocationInformation"				
ServingEcgi	present	An optional element specifying that the serving E-UTRAN Cell Global Identity (ECGI) needs to be reported		
NeighbouringEcgi	present	An optional element that can occur multiple times, specifying that neighbouring ECGIs need to be reported		
MbmsSaId	present	An optional element specifying that the serving MBMS Service Area Id needs to be reported;		
MbsfnArea	present	An optional element specifying that the MBSFN area Id needs to be reported;		

Derivation Path: TS 24.281 [86] clause F.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
GeographicalCoordinate	present	An optional element specifying that the geographical coordinate specified in clause 6.1 in 3GPP TS 23.032 [65] needs to be reported		
minimumIntervalLength	"5"	A mandatory element specifying the minimum time the MCData client needs to wait between sending location reports. The value is given in seconds		
TriggeringCriteria				
CellChange	not present			
TrackingAreaChange	not present			
PlmnChange	not present			
MbmsSaChange	not present			
MbsfnAreaChange	not present			
PeriodicReport	not present			
TravelledDistance	not present			
McdataSignallingEvent	not present			
GeographicalAreaChange				
AnyAreaChange	not present			
EnterSpecificAreaType	not present			
ExitSpecificAreaType	not present			

5.5.3.4.3   Location-info (Request sent by the SS)

-        MCPTT

Table 5.5.3.4.3-1: Location-info (Request sent by the SS) for MCPTT

Derivation Path: TS 24.379 [9] clause F.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Request				
RequestID	"1"	The RequestID that the MCPTT Client will reference in the Report		

-        MCVideo

Table 5.5.3.4.3-2: Location-info (Request sent by the SS) for MCVideo

Derivation Path: TS 24.281 [96] clause F.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Request				
RequestID	"1"	The RequestID that the MCVideo Client will reference in the Report		

- MCData

Table 5.5.3.4.3-3: Location-info (Request sent by the SS) for MCData

Derivation Path: TS 24.282 [87] clause D.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Request				
RequestID	"1"	The RequestID that the MCData Client will reference in the Report		

5.5.3.4.4   Location-info (Report from the SS)

- MCPTT

Table 5.5.3.4.4-1: Location-info (Report from the SS) for MCPTT

Derivation Path: TS 24.379 [9] clause F.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Report				
ReportID attribute	not present			
ReportType attribute	"Emergency"			
TriggerID	not present			
CurrentLocation				
CurrentServingEcgi	not present			
NeighbouringEcgi	not present			
MbmsSaId	not present			
MbsfnArea	not present			
CurrentCoordinate				
longitude	Encrypted (NOTE 1) <longitude> with content as specified by the test case			
latitude	Encrypted (NOTE 1) <latitude> with content as specified by the test case			
NOTE 1: Encrypted tCoordinateType element as described in Table 5.5.3.4.4-1A				

Table 5.5.3.4.4-1A: Encrypted sub-element of <CurrentCoordinate> sent by the SS

Derivation Path: TS 24.379 [9] clause F.3.2 (tCoordinateType)				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.2-2 containing encrypted element content of the sub-element of <CurrentCoordinate>			

-                    MCVideo

Table 5.5.3.4.4-2: Location-info (Report from the SS) for MCVideo

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.281 [86] clause F.3				
location-info				
Report				
ReportID attribute	not present			
ReportType attribute	"Emergency"			
TriggerID	not present			
CurrentLocation				
CurrentServingEcgi	not present			
NeighbouringEcgi	not present			
MbmsSaId	not present			
MbsfnArea	not present			
CurrentCoordinate				
longitude	Encrypted (NOTE 1) <longitude> with content as specified by the test case			
latitude	Encrypted (NOTE 1) <latitude> with content as specified by the test case			
NOTE 1: Encrypted sub-element of <CurrentCoordinate> as described in Table 5.5.3.4.1-2A				

Table 5.5.3.4.4-2A: Encrypted sub-element of <CurrentCoordinate> sent by the SS

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.281 [86] clause F.3.2 (tCoordinateType)				
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.2-2 containing encrypted element content of the sub-element of <CurrentCoordinate>			

-       MCData

Table 5.5.3.4.4-3: Location-info (Report from the SS) for MCData

Derivation Path: TS 24.282 [87] clause D.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Report				
ReportID attribute	not present			
ReportType attribute	"Emergency"			
TriggerID	not present			
CurrentLocation				
CurrentServingEcgi	not present			
NeighbouringEcgi	not present			
MbmsSaId	not present			
MbsfnArea	not present			
CurrentCoordinate				
longitude	Encrypted (NOTE 1) <longitude> with content as specified by the test case			
latitude	Encrypted (NOTE 1) <latitude> with content as specified by the test case			
NOTE 1: Encrypted sub-element of <CurrentCoordinate> as described in Table 5.5.3.4.1-2A				

Table 5.5.3.4.4-3A: Encrypted sub-element of <CurrentCoordinate> sent by the SS

Derivation Path: 24.282 [87] clause D.4.2 (tCoordinateType)				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
type attribute	"Encrypted"			
EncryptedData	EncryptedData as described in Table 5.5.13.2-2 containing encrypted element content of the sub-element of <CurrentCoordinate>			

5.5.3.5 PIDF

5.5.3.5.1 PIDF from the UE

- MCPTT

Table 5.5.3.5.1-1: PIDF for MCPTT from the UE

Derivation Path: RFC 3863 [114]				
Information Element	Value/remark	Comment	Reference	Condition
presence			RFC 3863 [114]	
entity attribute	Encrypted URI (NOTE 1) with value set to px_MCPTT_ID_User_A			
tuple				
id attribute	Encrypted URI (NOTE 1) with value set to the mcptt-client-id as provided by the UE at registration			
status				
affiliation		MCPTT extension	TS 24.379 [9] clause 9.3.1	AFFILIATION
group	Encrypted URI (NOTE 1) with value set to px_MCPTT_Group_A_ID			
client	not present			
status	not present			
expires	not present			
functionalAlias		MCPTT extension	TS 24.379 [9] Table 9A.3.1.2-1	FUNCTIONAL_ALIAS_STATUS_CHANGE
functionalAliasID attribute	Encrypted URI (NOTE 1) with value set to px_MCPTT_ID_FA_A			
user attribute	not present			
status attribute	not present			
expires attribute	not present			
contact	not present			
note	not present			
timestamp	not present			
note	not present			
p-id	any allowed value if present		TS 24.379 [9] clause 9.3.1	AFFILIATION
p-id-fa	Any allowed value	a globally unique value set to an identifier of a SIP PUBLISH request	TS 24.379 [9] clause 9A.2.1.2	FUNCTIONAL_ALIAS_STATUS_CHANGE
NOTE 1: Encrypted attribute as described in Table 5.5.13.3-1				

Condition	Explanation
FUNCTIONAL_ALIAS_STATUS_CHANGE	PIDF sent by the UE in request for functional alias status change
For further conditions see table 5.5.1-1	

- MCVideo

Table 5.5.3.5.1-2: PIDF for MCVideo from the UE

Derivation Path: RFC 3863 [114]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence			RFC 3863 [114]	
entity attribute	Encrypted URI (NOTE 1) with value set to px_MCVideo_ID_User_A			
tuple				
id attribute	Encrypted URI (NOTE 1) with value set to the mcptt-client-id as provided by the UE at registration			
status				
affiliation			TS 24.281 [86] clause 8.3.1	AFFILIATION
group	Encrypted URI (NOTE 1) with value set to px_MCVideo_Group_A_ID			
client	not present			
status	not present			
expires	not present			
p-id	any allowed value if present			AFFILIATION
NOTE 1: Encrypted attribute as described in Table 5.5.13.3-1				

- MCData

Table 5.5.3.5.1-3: PIDF for MCData from the UE

Derivation Path: RFC 3863 [114]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence			RFC 3863 [114]	
entity attribute	Encrypted URI (NOTE 1) with value set to px_MCData_ID_User_A			
tuple				
id attribute	Encrypted URI (NOTE 1) with value set to the mcptt-client-id as provided by the UE at registration			
status				
affiliation			TS 24.282 [87] clause 8.4.1	AFFILIATION
group	Encrypted URI (NOTE 1) with value set to px_MCDATA_Group_A_ID			
client	not present			
status	not present			
expires	not present			
functionalAlias		MCData extension	TS 24.282 [87] Table 22.3.1.2-1	FUNCTIONAL_ALIAS_STATUS_CHANGE
functionalAliasID attribute	Encrypted URI (NOTE 1) with value set to px_MCData_ID_FA_A			
user attribute	not present			
status attribute	not present			
expires attribute	not present			
p-id	any allowed value or same value as sent in SIP PUBLISH	set to an identifier of a SIP PUBLISH request		AFFILIATION
p-id-fa	Any allowed value	a globally unique value set to an identifier of a SIP PUBLISH request	TS 24.282 [87] clause 22.2.1.2	FUNCTIONAL_ALIAS_STATUS_CHANGE
NOTE 1: Encrypted attribute as described in Table 5.5.13.3-1				

5.5.3.5.2 PIDF from the SS

- MCPTT

Table 5.5.3.5.2-1: PIDF for MCPTT from the SS

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: RFC 3863 [114]				
presence			RFC 3863 [114]	
entity attribute	Encrypted URI (NOTE 1) with value set to px_MCPTT_ID_User_A			
tuple				
id attribute	Encrypted URI (NOTE 1) with value set to the mcptt-client-id as provided by the UE at registration			
status				
affiliation		MCPTT extension	TS 24.379 [9] clause 9.3.1	AFFILIATION
group	Encrypted URI (NOTE 1) with value set to px_MCPTT_Group_A_ID			
client	not present			
status	"affiliating"			
expires	not present			
functionalAlias		MCPTT extension	TS 24.379 [9] Table 9A.3.1.2-1	FUNCTIONAL_ALIAS_ACTIVATED
functionalAliasID attribute	Encrypted URI (NOTE 1) with value set to px_MCPTT_ID_FA_A			
user attribute	not present			
status attribute	"activated"			
expires attribute	not present			
contact	not present			
note	not present			
timestamp	not present			
note	not present			
p-id	not present			AFFILIATION
p-id-fa	same value as received in the SIP PUBLISH message		TS 24.379 [9] clause 9A.2.2.2.5	NOTIFY_FOR_PUBLISH
NOTE 1: Encrypted attribute as described in Table 5.5.13.3-1				

Condition	Explanation
FUNCTIONAL_ALIAS_ACTIVATED	PIDF sent by the SS in notification for functional alias getting activated
NOTIFY_FOR_PUBLISH	PIDF sent by the SS in notification associated with a previous SIP PUBLISH message sent by the UE
For further conditions see table 5.5.1-1	

- MCVideo

Table 5.5.3.5.2-2: PIDF for MCVideo from the SS

Derivation Path: RFC 3863 [114]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence			RFC 3863 [114]	
entity attribute	Encrypted URI (NOTE 1) with value set to px_MCVideo_ID_User_A			
tuple				
id attribute	Encrypted URI (NOTE 1) with value set to the mcptt-client-id as provided by the UE at registration			
status				
affiliation			TS 24.281 [86] clause 8.3.1	AFFILIATION
group	Encrypted URI (NOTE 1) with value set to px_MCVideo_Group_A_ID			
client	not present			
status	"affiliating"			
expires	not present			
p-id	not present			AFFILIATION
NOTE 1: Encrypted attribute as described in Table 5.5.13.3-1				

- MCData

Table 5.5.3.5.2-3: PIDF for MCData from the SS

Derivation Path: RFC 3863 [114]				
Information Element	Value/remark	Comment	Reference	Condition
presence			RFC 3863 [114]	
entity attribute	Encrypted URI (NOTE 1) with value set to px_MCDATA_ID_User_A			
tuple				
id attribute	Encrypted URI (NOTE 1) with value set to the mcptt-client-id as provided by the UE at registration			
status				
affiliation			TS 24.282 [87] clause 8.4.1	AFFILIATION
group	px_MCDATA_Group_A_ID			
client	not present			
status	"affiliating"			
expires	not present			
functionalAlias		MCData extension	TS 24.282 [87] Table 22.3.1.2-1	FUNCTIONAL_ALIAS_ACTIVATED
functionalAliasID attribute	Encrypted URI (NOTE 1) with value set to px_MCData_ID_FA_A			
user attribute	not present			
status attribute	"activated"			
expires attribute	not present			
p-id	not present			AFFILIATION
p-id-fa	same value as received in the SIP PUBLISH message		TS 24.282 [87] clause 22.2.2.2.5	NOTIFY_FOR_PUBLISH
NOTE 1: Encrypted attribute as described in Table 5.5.13.3-1				

Condition	Explanation
FUNCTIONAL_ALIAS_ACTIVATED	PIDF sent by the SS in notification for functional alias getting activated
NOTIFY_FOR_PUBLISH	PIDF sent by the SS in notification associated with a previous SIP PUBLISH message sent by the UE
For further conditions see table 5.5.1-1	

5.5.3.6 SIMPLE-FILTER

Table 5.5.3.6-1: SIMPLE-FILTER

Derivation Path: RFC 4661 [48] clause 7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
filter-set				
ns-bindings		TS 24.379 [9] clause 9.3.2.2 requires two separate ns-binding elements		
ns-binding urn [1]				
prefix	"pidf"			
urn	"urn:ietf:params:xml:ns:pidf"			
ns-binding urn [2]				MCPTT
prefix	"mcpttPI10"			
urn	"urn:3gpp:ns:mcpttPresInfo:1.0"			
ns-binding urn [2]				MCVIDEO
prefix	"mcvideoPI10"			
urn	"urn:3gpp:ns:mcvideoPresInfo:1.0"			
ns-binding urn [2]				MCDATA
prefix	"mcdataPI10"			
urn	"urn:3gpp:ns:mcdataPresInfo:1.0"			
filter[1]				
id attribute	Any value	The value of the 'id' attribute has to be unique within the <filter-set> element		
uri attribute	Not present	According to TS 24.379 [9] clause 9.3.2.2		
domain attribute	Not present	According to TS 24.379 [9] clause 9.3.2.2		
remove attribute	false if present	'false' per default		
enabled attribute	true if present	'true' per default		
what			RFC 4661 [48]	PER-CLIENT
include[1]				
type	xpath if present	"xpath" per default		
base	"//presence/tuple[@id=" & client id (NOTE 1) & "]" Editor's Note: FFS whether and how this element should be encrypted	contains the value, according to IETF RFC 4661 [48], set to concatenation of the '//presence/tuple[@id="' string, the MCX client ID, and the '"]' string		
what			RFC 4661 [48]	PER-GROUP
include[1]				
type	xpath if present	"xpath" per default		
base	"//pidf:presence/pidf:additionalData/@pidf:groupCallOngoing"		TS 24.379 [9] clause 9.3.2.2	
trigger	Not present			
NOTE 1: UUID URN as provided by the client at initial registration				

Condition	Explanation
PER-CLIENT	Per-client restrictions of presence event package notification information according to TS 24.379 [9] clause 9.3.2.2
PER-GROUP	Per-group restrictions of presence event package notification information according to TS 24.379 [9] clause 9.3.2.2

Table 5.5.3.6-2: Void

Table 5.5.3.6-3: Void

5.5.3.7 AFFILIATION-COMMAND

- MCPTT

Table 5.5.3.7-1: MCPTT-AFFILIATION-COMMAND for MCPTT

Derivation Path: TS 24.379 [9] clause F.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
command-list				
affiliate				
group[1]	px_MCPTT_Group_A_ID	MCPTT group name		
de-affiliate	not present			

- MCVideo

Table 5.5.3.7-2: MCVideo-AFFILIATION-COMMAND for MCVideo

Derivation Path: TS 24.281 [86] clause F.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
command-list				
affiliate				
group[1]	px_MCVideo_Group_A_ID	MCVideo group name		
de-affiliate	not present			

- MCData

Table 5.5.3.7-3: MCData-AFFILIATION-COMMAND for MCData

Derivation Path: TS 24.282 [87] clause D.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
command-list				
affiliate				
group[1]	px_MCData_Group_A_ID	MCData group name		
de-affiliate	not present			

5.5.3.8 MCData Data signalling messages

The MCData Data signalling messages specified in this clause are protected according to TS 33.180 clause 8.5.4, i.e. a MCData Data signalling message is contained in the protected payload of a MCData Protected Payload Message according to clause 5.5.3.10 with condition PROTECTED_MESSAGE and CSK.

The following conditions apply throughout clause 5.5.3.8:

Table 5.5.3.8-1: Conditions

Condition	Explanation
DELIVERED	Disposition request/notification type DELIVERED
READ	Disposition request/notification type READ
DELIVERED_READ	Disposition request/notification type DELIVERED AND READ
FD_ACCEPTED	Disposition notification type FILE DOWNLOAD REQUEST ACCEPTED
FD_REJECTED	Disposition notification type FILE DOWNLOAD REQUEST REJECTED
FD_COMPLETED	Disposition notification type FILE DOWNLOAD COMPLETED
FD_DEFERRED	Disposition notification type FILE DOWNLOAD DEFERRED
FD_HTTP	FD Message for FD using using HTTP
FD_MSRP	FD Message for FD using media plane

5.5.3.8.1 SDS SIGNALLING PAYLOAD message from the UE

Table 5.5.3.8.1-1: SDS SIGNALLING PAYLOAD message from the UE

Derivation Path: TS 24.282 [87] clause 15.1.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
SDS signalling payload message identity	'00000001'B	SDS SIGNALLING PAYLOAD	TS 24.282 [87] clause 15.2.2	
Date and time	Any allowed value	The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).	TS 24.282 [87] clause 15.2.8	
Conversation ID	Any allowed value	The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier.	TS 24.282 [87] clause 15.2.9	
Message ID	Any allowed value	The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier	TS 24.282 [87] clause 15.2.10	
InReplyTo message ID	Not present		TS 24.282 [87] clause 15.2.11	
Application ID	Not present		TS 24.282 [87] clause 15.2.7	
SDS disposition request type	'0001'B		TS 24.282 [87] clause 15.2.3	DELIVERED
	'0010'B			READ
	'0011'B			DELIVERED_READ
Extended application ID	Not present		TS 24.282 [87] clause 15.2.24	
User location	Any allowed value if present		TS 24.282 [87] clause 15.2.25	
Sender MCData user ID	Not present		TS 24.282 [87] clause 15.2.15	
Application metadata container	Any allowed value if present	Rel-17	TS 24.282 [87] clause 15.2.28	

5.5.3.8.2 SDS SIGNALLING PAYLOAD message from the SS

Table 5.5.3.8.2-1: SDS SIGNALLING PAYLOAD message from the SS

Derivation Path: TS 24.282 [87] clause 15.1.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
SDS signalling payload message identity	'00000001'B	SDS SIGNALLING PAYLOAD	TS 24.282 [87] clause 15.2.2	
Date and time	The current date and time	The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).	TS 24.282 [87] clause 15.2.8	
Conversation ID	'010101010101010101 01010101010101'O	The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier.	TS 24.282 [87] clause 15.2.9	
Message ID	'010101010101010101 01010101010101'O	The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier	TS 24.282 [87] clause 15.2.10	
InReplyTo message ID	Not present		TS 24.282 [87] clause 15.2.11	
Application ID	Not present		TS 24.282 [87] clause 15.2.7	
SDS disposition request type	'0001'B		TS 24.282 [87] clause 15.2.3	DELIVERED
	'0010'B			READ
	'0011'B			DELIVERED_READ
Extended application ID	Not present		TS 24.282 [87] clause 15.2.24	
User location	Not present		TS 24.282 [87] clause 15.2.25	
Sender MCData user ID	Not present		TS 24.282 [87] clause 15.2.15	
Application metadata container	Not present	Rel-17	TS 24.282 [87] clause 15.2.28	

5.5.3.8.3 SDS NOTIFICATION message from the UE

Table 5.5.3.8.3-1: SDS NOTIFICATION message from the UE

Derivation Path: TS 24.282 [87] clause 15.1.5				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
SDS notification message identity	'00000101'B	SDS NOTIFICATION	TS 24.282 [87] clause 15.2.2	
SDS disposition notification type	'00000010'B		TS 24.282 [87] clause 15.2.5	DELIVERED
	'00000011'B			READ
	'00000100'B			DELIVERED_READ
Date and time	Any allowed value	The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).	TS 24.282 [87] clause 15.2.8	
Conversation ID	Same value as in the corresponding SDS SIGNALLING PAYLOAD sent to the UE	The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier.	TS 24.282 [87] clause 15.2.9	
Message ID	Same value as in the corresponding SDS SIGNALLING PAYLOAD sent to the UE	The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier	TS 24.282 [87] clause 15.2.10	
Application ID	Not present		TS 24.282 [87] clause 15.2.7	
Extended application ID	Not present		TS 24.282 [87] clause 15.2.24	
Sender MCData user ID	Not present		TS 24.282 [87] clause 15.2.15	

5.5.3.8.4 SDS NOTIFICATION message from the SS

Table 5.5.3.8.4-1: SDS NOTIFICATION message from the SS

Derivation Path: TS 24.282 [87] clause 15.1.5				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
SDS notification message identity	'00000101'B	SDS NOTIFICATION	TS 24.282 [87] clause 15.2.2	
SDS disposition notification type	'00000010'B		TS 24.282 [87] clause 15.2.5	DELIVERED
	'00000011'B			READ
	'00000100'B			DELIVERED_READ
Date and time	The current date and time	The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).	TS 24.282 [87] clause 15.2.8	
Conversation ID	Same value as in the corresponding SDS SIGNALLING PAYLOAD received from the UE	The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier.	TS 24.282 [87] clause 15.2.9	
Message ID	Same value as in the corresponding SDS SIGNALLING PAYLOAD received from the UE	The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier	TS 24.282 [87] clause 15.2.10	
Application ID	Not present		TS 24.282 [87] clause 15.2.7	
Extended application ID	Not present		TS 24.282 [87] clause 15.2.24	
Sender MCData user ID	Not present		TS 24.282 [87] clause 15.2.15	

5.5.3.8.5 FD SIGNALLING PAYLOAD message from the UE

Table 5.5.3.8.5-1: FD SIGNALLING PAYLOAD message from the UE

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.282 [87] clause 15.1.2				
FD signalling payload message identity	'00000010'B	FD SIGNALLING PAYLOAD	TS 24.282 [87] clause 15.2.2	
Date and time	Any allowed value	The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).	TS 24.282 [87] clause 15.2.8	
Conversation ID	Any allowed value	The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier.	TS 24.282 [87] clause 15.2.9	
Message ID	Any allowed value	The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier	TS 24.282 [87] clause 15.2.10	
InReplyTo message ID	Not present		TS 24.282 [87] clause 15.2.11	
Application ID	Not present		TS 24.282 [87] clause 15.2.7	
FD disposition request type	"0001"	FILE DOWNLOAD COMPLETED UPDATE	TS 24.282 [87] clause 15.2.4	
Mandatory download	Not present	Not present indicates a Non-Mandatory download	TS 24.282 [87] clause 15.2.16	
	'0001'B	MANDATORY DOWNLOAD		FD_MSRP
Payload			TS 24.282 [87] clause 15.2.13	FD_HTTP
Length of Payload contents	Length of the payload contents			
Payload content type	"00000100"	FILEURL		
Payload contents	same URL as assigned by the SS in the HTTP 201 (Created) response to the HTTP POST request			
Metadata	if present	Metadata is optional	TS 24.282 [87] clause 15.2.17	FD_HTTP
file-selector	Any allowed value			
file-date	Any allowed value			
file-availability	Any allowed value			
Extended application ID	Not present		TS 24.282 [87] clause 15.2.24	

5.5.3.8.6   FD SIGNALLING PAYLOAD message from the SS

Table 5.5.3.8.6-1: FD SIGNALLING PAYLOAD message from the SS

Derivation Path: TS 24.282 [87] clause 15.1.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
FD signalling payload message identity	'00000010'B	FD SIGNALLING PAYLOAD	TS 24.282 [87] clause 15.2.2	
Date and time	The current date and time	The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).	TS 24.282 [87] clause 15.2.8	
Conversation ID	'010101010101010101 01010101010101'O	The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier.	TS 24.282 [87] clause 15.2.9	
Message ID	'010101010101010101 01010101010101'O	The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier	TS 24.282 [87] clause 15.2.10	
InReplyTo message ID	Not present		TS 24.282 [87] clause 15.2.11	
Application ID	Not present		TS 24.282 [87] clause 15.2.7	
FD disposition request type	'0001'B	FILE DOWNLOAD COMPLETED UPDATE	TS 24.282 [87] clause 15.2.4	
Mandatory download	Not present	Not present indicates a Non-Mandatory download	TS 24.282 [87] clause 15.2.16	
	'0001'B	MANDATORY DOWNLOAD		FD_MSRP
Length of Payload contents	Length of the payload contents			
Payload content type	"00000100"	FILEURL		
Payload contents	tsc_MCData_MSF_URI & "/" & sub-path	URL identifying the location of the stored file; sub-path is arbitrarily selected by the SS and shall be different for every file upload of a test case		
Metadata		NOTE 1	TS 24.282 [87] clause 15.2.17	FD_HTTP
file-selector			RFC 5547 [124]	
filename	name of the file	e.g. "TestFile.txt"		
filesize	size of the file			
type	type of the file	e.g. "text/plain"		
hash				
algorithm	"sha-1"			
value	hash value of the file			
file-date			RFC 5547 [124]	
date-param[1]				
type	"creation"			
date-time	date and time when the file has been created	e.g. "Mon, 20 Dec 2021 15:01:31 +0100"	RFC 5322 [109]	
file-availability	Date and time until which the file is available	e.g. "Fri, 30 Dec 2050 23:59:59 +0100"	TS 24.282 [87] table 15.2.17-1	

file-description	"Test file"		TS 24.282 [87] table 15.2.17-1	
Extended application ID	Not present		TS 24.282 [87] clause 15.2.24	
Sender MCData user ID	Not present		TS 24.282 [87] clause 15.2.15	
NOTE 1: file-selector, file-date, file-availability and file-description are concatenated using CRLF (carriage-return/line-feed) as separator				

5.5.3.8.7   FD NOTIFICATION message from the UE

Table 5.5.3.8.7-1: FD NOTIFICATION message from the UE

Derivation Path: TS 24.282 [87] clause 15.1.6				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
FD notification message identity	'00000110'B	FD NOTIFICATION	TS 24.282 [87] clause 15.2.2	
FD disposition notification type	'00000001'B		TS 24.282 [87] clause 15.2.6	FD_ACCEPTED
	'00000010'B			FD_REJECTED
	'00000011'B			FD_COMPLETED
	'00000100'B			FD_DEFERRED
Date and time	Any allowed value	The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).	TS 24.282 [87] clause 15.2.8	
Conversation ID	Same value as in the corresponding FD SIGNALLING PAYLOAD sent to the UE	The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier.	TS 24.282 [87] clause 15.2.9	
Message ID	Same value as in the corresponding FD SIGNALLING PAYLOAD sent to the UE	The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier	TS 24.282 [87] clause 15.2.10	
Application ID	Not present		TS 24.282 [87] clause 15.2.7	
Extended application ID	Not present		TS 24.282 [87] clause 15.2.24	
Sender MCData user ID	Not present		TS 24.282 [87] clause 15.2.15	

5.5.3.8.8   FD NOTIFICATION message from the SS

Table 5.5.3.8.8-1: FD NOTIFICATION message from the SS

Derivation Path: TS 24.282 [87] clause 15.1.6				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
FD notification message identity	'00000110'B	FD NOTIFICATION	TS 24.282 [87] clause 15.2.2	
FD disposition notification type	'00000001'B		TS 24.282 [87] clause 15.2.6	FD_ACCE PTED
	'00000010'B			FD_REJE CTED
	'00000011'B			FD_COMP LETED
	'00000100'B			FD_DEFE RRED
Date and time	The current date and time	The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).	TS 24.282 [87] clause 15.2.8	
Conversation ID	Same value as in the corresponding FD SIGNALLING PAYLOAD received from the UE	The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier.	TS 24.282 [87] clause 15.2.9	
Message ID	Same value as in the corresponding FD SIGNALLING PAYLOAD received from the UE	The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier	TS 24.282 [87] clause 15.2.10	
Application ID	Not present		TS 24.282 [87] clause 15.2.7	
Extended application ID	Not present		TS 24.282 [87] clause 15.2.24	
Sender MCData user ID	Not present		TS 24.282 [87] clause 15.2.15	

5.5.3.8.9 SDS OFF-NETWORK MESSAGE message from the UE

Table 5.5.3.8.9-1: SDS OFF-NETWORK MESSAGE message from the UE

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.282 [87] table 15.1.7.1-1				
Date and time	Any allowed value	The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).	TS 24.282 [87] clause 15.2.8	
Number of payloads	1	1 payload	TS 24.282 [87] clause 15.2.12	
Conversation ID	Any allowed value	The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier.	TS 24.282 [87] clause 15.2.9	
Message ID	Any allowed value	The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier	TS 24.282 [87] clause 15.2.10	
Sender MCData user ID	px_MCData_ID_User_A			
InReplyTo message ID	Not present		TS 24.282 [87] clause 15.2.11	
Application ID	Not present		TS 24.282 [87] clause 15.2.7	
SDS disposition request type	'0001'B		TS 24.282 [87] clause 15.2.3	DELIVERED
	'0010'B			READ
	'0011'B			DELIVERED_READ
Security parameters	MCData Protected Payload Message as described in Table 5.5.3.10-1 with condition PROTECTED_PAYLOAD containing the Payload as described in Table 5.5.3.8.9-2	MCData Protected Payload Message	TS 33.180 [94]	MCD_1to1
MCData group ID	px_MCData_Group_A_ID		TS 24.282 [87] clause 15.2.14	MCD_grp
Recipient MCData user ID	px_MCData_ID_User_B			MCD_1to1
Payload	Payload as described in Table 5.5.3.8.9-3		TS 24.282 [87] clause 15.2.13	MCD_grp
Extended application ID	Not present		TS 24.282 [87] clause 15.2.24	

Condition	Explanation
MCD_1to1	A one-to-one MCData call
MCD_grp	A group MCData call
For further conditions see table 5.5.3.8-1	

Table 5.5.3.8.9-2: Payload contained in the Security parameters

Derivation Path: TS 24.282 [87] clause 15.2.13				
Field	**Value/remark**	**Comment**	**Reference**	**Condition**
Payload IEI	'78'O		TS 24.282 [87] clause 15.1.4	
Length of Payload	length of the content			
Payload content type	'00000001'B	TEXT		
Payload data	any allowed value	The data payload Example: "abcdEFGH"		

Table 5.5.3.8.9-3: DATA PAYLOAD message for group communication from the UE

Derivation Path: TS 24.282 [87] clause 15.1.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Data payload message identity	'00000011'B	Data payload	TS 24.282 [87] clause 15.2.2	
Number of payloads	1	1 payload	TS 24.282 [87] clause 15.2.12	
Payload			TS 24.282 [87] clause 15.2.13	
Payload IEI	'78'O			
Length of Payload	length of the content			
Payload content type	'00000001'B	TEXT		
Payload data	any allowed value	The data payload Example: "abcdEFGH"		

5.5.3.8.10 SDS OFF-NETWORK MESSAGE message from the SS

Table 5.5.3.8.10-1: SDS OFF-NETWORK MESSAGE message from the SS

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.282 [87] table 15.1.7.1-1				
Date and time	The current date and time	The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).	TS 24.282 [87] clause 15.2.8	
Number of payloads	1	1 payload	TS 24.282 [87] clause 15.2.12	
Conversation ID	'010101010101010101 01010101010101'O	The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier.	TS 24.282 [87] clause 15.2.9	
Message ID	'010101010101010101 01010101010101'O	The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier	TS 24.282 [87] clause 15.2.10	
Sender MCData user ID	px_MCData_ID_User_B			
InReplyTo message ID	Not present		TS 24.282 [87] clause 15.2.11	
Application ID	Not present		TS 24.282 [87] clause 15.2.7	
SDS disposition request type	'0001'B		TS 24.282 [87] clause 15.2.3	DELIVERED
	'0010'B			READ
	'0011'B			DELIVERED_READ
Security parameters	MCData Protected Payload Message as described in Table 5.5.3.10-2 with condition PROTECTED_PAYLOAD containing the Payload as described in Table 5.5.3.8.10-2	MCData Protected Payload Message	TS 33.180 [94]	MCD_1to1
MCData group ID	px_MCData_Group_A_ID		TS 24.282 [87] clause 15.2.14	MCD_grp
Recipient MCData user ID	px_MCData_ID_User_A			MCD_1to1
Payload	Payload as described in Table 5.5.3.8.10-3		TS 24.282 [87] clause 15.2.13	MCD_grp
Extended application ID	Not present		TS 24.282 [87] clause 15.2.24	

Condition	Explanation
MCD_1to1	A one-to-one MCData call
MCD_grp	A group MCData call
For further conditions see table 5.5.3.8-1	

Table 5.5.3.8.10-2: Payload contained in the Security parameters and Payload

Derivation Path: TS 24.282 [87] clause 15.2.13				
Field	Value/remark	Comment	Reference	Condition
Payload IEI	'78'O		TS 24.282 [87] clause 15.1.4	
Length of Payload	length of the content			
Payload content type	'00000001'B	TEXT		
Payload data	"Test"	The data payload		

Table 5.5.3.8.10-3: DATA PAYLOAD message for group communication from the SS

Derivation Path: TS 24.282 [87] clause 15.1.4				
Information Element	Value/remark	Comment	Reference	Condition
Data payload message identity	'00000011'B	Data payload	TS 24.282 [87] clause 15.2.2	
Number of payloads	1	1 payload	TS 24.282 [87] clause 15.2.12	
Payload			TS 24.282 [87] clause 15.2.13	
Payload IEI	'78'O			
Length of Payload	length of the content			
Payload content type	'00000001'B	TEXT		
Payload data	"Test"	The data payload		

5.5.3.8.11 SDS OFF-NETWORK NOTIFICATION message from the UE

Table 5.5.3.8.11-1: SDS OFF-NETWORK message from the UE

Derivation Path: TS 24.282 [87] table 15.1.8.4-1				
Information Element	Value/remark	Comment	Reference	Condition
SDS disposition notification type	'00000010'B		TS 24.282 [87] clause 15.2.5	DELIVERED
	'00000011'B			READ
	'00000100'B			DELIVERED_READ
Date and time	Any allowed value	The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).	TS 24.282 [87] clause 15.2.8	
Conversation ID	Same value as in the corresponding SDS OFF-NETWORK MESSAGE sent to the UE	The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier.	TS 24.282 [87] clause 15.2.9	
Message ID	Same value as in the corresponding SDS OFF-NETWORK MESSAGE sent to the UE	The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier	TS 24.282 [87] clause 15.2.10	
Sender MCData user ID	px_MCData_ID_User_A			
Application ID	Not present			
Extended application ID	Not present			

5.5.3.8.12   SDS OFF-NETWORK NOTIFICATION message from the SS

Table 5.5.3.8.12-1: SDS OFF-NETWORK message from the SS

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.282 [87] table 15.1.8.4-1				
SDS disposition notification type	'00000010'B		TS 24.282 [87] clause 15.2.5	DELIVERED
	'00000011'B			READ
	'00000100'B			DELIVERED_READ
Date and time	The current date and time	The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).	TS 24.282 [87] clause 15.2.8	
Conversation ID	Same value as in the corresponding SDS OFF-NETWORK MESSAGE received from the UE	The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier.	TS 24.282 [87] clause 15.2.9	
Message ID	Same value as in the corresponding SDS OFF-NETWORK MESSAGE received from the UE	The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier	TS 24.282 [87] clause 15.2.10	
Sender MCData user ID	px_MCData_ID_User_B			
Application ID	Not present			
Extended application ID	Not present			

5.5.3.9   MCData Data Payload

5.5.3.9.1   MCData Data Payload for group communication

The MCData Data Payload messages for group communication specified in this clause are protected according to TS 33.180 clause 8.5.4, i.e. a MCData Data Payload message is contained in the protected payload of a MCData Protected Payload Message according to clause 5.5.3.10 with condition PROTECTED_MESSAGE and GMK.

Table 5.5.3.9.1-1: DATA PAYLOAD message for group communication from the UE

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.282 [87] clause 15.1.4				
Data payload message identity	'00000011'B	Data payload	TS 24.282 [87] clause 15.2.2	
Number of payloads	1	1 payload	TS 24.282 [87] clause 15.2.12	
Payload			TS 24.282 [87] clause 15.2.13	
Payload IEI	'78'O			
Length of Payload	length of the content			
Payload content type	'00000001'B	TEXT		
Payload data	any allowed value	The data payload Example: "abcdEFGH"		

Table 5.5.3.9.1-2: DATA PAYLOAD message for group communication from the SS

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.282 [87] clause 15.1.4				
Data payload message identity	'00000011'B	Data payload	TS 24.282 [87] clause 15.2.2	
Number of payloads	1	1 payload	TS 24.282 [87] clause 15.2.12	
Payload			TS 24.282 [87] clause 15.2.13	MCD_grp
Payload IEI	'78'O			
Length of Payload	length of the content			
Payload content type	'00000001'B	TEXT		
Payload data	"Test"	The data payload		

5.5.3.9.2 MCData Data Payload for one-to-one communication

Table 5.5.3.9.2-1: DATA PAYLOAD message for one-to-one communication from the UE

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.282 [87] clause 15.1.4				
Data payload message identity	'00000011'B	Data payload	TS 24.282 [87] clause 15.2.2	
Number of payloads	1	1 payload	TS 24.282 [87] clause 15.2.12	
Security parameters and Payload	MCData Protected Payload Message as described in Table 5.5.3.10-1 with condition PROTECTED_PAYLOAD containing the Payload as described in Table 5.5.3.9.2-1A	MCData Protected Payload Message	TS 33.180 [94]	

Table 5.5.3.9.2-1A: Payload contained in the Security parameters and Payload

Field	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.282 [87] clause 15.2.13				
Payload IEI	'78'O		TS 24.282 [87] clause 15.1.4	
Length of Payload	length of the content			
Payload content type	'00000001'B	TEXT		
Payload data	any allowed value	The data payload Example: "abcdEFGH"		

Table 5.5.3.9.2-2: DATA PAYLOAD message for one-to-one communication from the SS

Derivation Path: TS 24.282 [87] clause 15.1.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Data payload message identity	'00000011'B	Data payload	TS 24.282 [87] clause 15.2.2	
Number of payloads	1	1 payload	TS 24.282 [87] clause 15.2.12	
Security parameters and Payload	MCData Protected Payload Message as described in Table 5.5.3.10-2 with condition PROTECTED_PAYLOAD containing the Payload as described in Table 5.5.3.9.2-2A	MCData Protected Payload Message	TS 33.180 [94]	

Table 5.5.3.9.2-2A: Payload contained in the Security parameters and Payload

Derivation Path: TS 24.282 [87] clause 15.2.13				
Field	**Value/remark**	**Comment**	**Reference**	**Condition**
Payload IEI	'78'O		TS 24.282 [87] clause 15.1.4	
Length of Payload	length of the content			
Payload content type	'00000001'B	TEXT		
Payload data	"Test"	The data payload		

5.5.3.10 MCData Protected Payload Message

Table 5.5.3.10-1: MCData Protected Payload Message from the UE

Derivation Path: TS 33.180 [94] clause 8.5.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message Type	Same message type as in the MCData message contained as Payload but with bit 7 set to '1'B			PROTECTED_MESSAGE
	'01??????'B	NOTE: TS 33.180 [94] does not specify any message type		PROTECTED_FILE
	'01111010B	'7A'O; IEI	TS 24.282 [87] clause 15.1.4	PROTECTED_PAYLOAD
Date and Time	Any allowed value	Date and Time of creation of protected payload message		
Payload ID	Any allowed value	The identifier for the payload.		
Payload sequence number	Any allowed value	The sequence number of the protected payload.		
Payload Algorithm	'01'O	DP_AES_128_GCM		
Signalling algorithm	not present			
IV	Any allowed value	Initialisation vector (or nonce) for message. Length depends on the algorithm and key used. 128 bits or 256 bits depending on the algorithm.		
DPPK-ID	PCK-ID			PROTECTED_PAYLOAD, PCK
	GMK-ID			GMK
	CSK-ID			CSK
Payload		Protected Payload (Ciphertext)	TS 24.282 [87] clause 15.2.13	
Payload IEI	'78'O	Value as used in MCData messages in TS 24.282 [87]		
Length of Payload contents	length of the content			
Payload content type	'02'O	BINARY		
Payload contents	Encrypted MCData message (NOTE 1)			PROTECTED_MESSAGE
	Encrypted file or portion of file			PROTECTED_FILE
	Encrypted Payload(s) of the unprotected DATA PAYLOAD message (NOTE 2)			PROTECTED_PAYLOAD
NOTE 1: The whole message is encrypted (including its message type)				
NOTE 2: The whole payload(s) are encrypted (including their IEI and length); in general there is only one payload				

Condition	Explanation
PROTECTED_MESSAGE	The MCData Protected Payload message contains a whole encrypted MCData message
PROTECTED_FILE	The MCData Protected Payload message contains encrypted binary data representing a file or portion of a file
PROTECTED_PAYLOAD	The MCData Protected Payload message contains the Payload IE(S) of the MCData DATA PAYLOAD message
PCK	Encryption uses PCK
GMK	Encryption uses GMK
CSK	Encryption uses CSK

Table 5.5.3.10-2: MCData Protected Payload Message from the SS

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 33.180 [94] clause 8.5.4				
Message Type	Same message type as in the MCData message contained as Payload but with bit 7 set to '1'B			PROTECTED_MESSAGE
	'01000011'B	'43'O; same as for protected DATA PAYLOAD		PROTECTED_FILE
	'01111010B	'7A'O; IEI	TS 24.282 [87] clause 15.1.4	PROTECTED_PAYLOAD
Date and Time	The current date and time	Date and Time of creation of protected payload message		
Payload ID	"1"	The identifier for the payload.		
Payload sequence number	"1"	The sequence number of the protected payload.		
Payload Algorithm	'01'O	DP_AES_128_GCM		
Signalling algorithm	not present			
IV	'DCB9085150B3CF21E2F7DF5B542C25C2'O	Initialisation vector (or nonce) for message. Length depends on the algorithm and key used. 128 bits or 256 bits depending on the algorithm.		
DPPK-ID	PCK-ID			PROTECTED_PAYLOAD, PCK
	GMK-ID			GMK
	CSK-ID			CSK
Payload		Protected Payload (Ciphertext)	TS 24.282 [87] clause 15.2.13	
Payload IEI	'78'O	Value as used in MCData messages in TS 24.282 [87]		
Length of Payload contents	length of the content			
Payload content type	'02'O	BINARY		
Payload contents	Encrypted MCData message (NOTE 1)			PROTECTED_MESSAGE
	Encrypted field or portion of file			PROTECTED_FILE
	Encrypted Payload(s) of the unprotected DATA PAYLOAD message (NOTE 2)			PROTECTED_PAYLOAD
NOTE 1: The whole message is encrypted (including its message type)				
NOTE 2: The whole payload(s) are encrypted (including their IEI and length); in general there is only one payload				

Condition	Explanation
PROTECTED_MESSAGE	The MCData Protected Payload message contains a whole encrypted MCData message
PROTECTED_FILE	The MCData Protected Payload message contains encrypted binary data representing a file or portion of a file
PROTECTED_PAYLOAD	The MCData Protected Payload message contains the Payload IE(S) of the MCData DATA PAYLOAD message
PCK	Encryption uses PCK
GMK	Encryption uses GMK
CSK	Encryption uses CSK

5.5.3.11   PoC Settings

5.5.3.11.1   PoC Settings from the UE

Table 5.5.3.11.1-1: PoC Settings from the UE

Derivation Path: RFC 4354 [103]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
poc-settings				
entity [1]				
id attribute	any value	unique identifier of the EPA (Event Publication Agent) Editor's note: to be clarified whether there are requirements for the id	RFC 4354 [103]	
am-settings			RFC 4354 [103]	
answer-mode	"automatic" or "manual"			
	"manual"			MANUAL
	"automatic"			AUTOMATIC
selected-user-profile-index			TS 24.379 [9] clause 7.4.1	
user-profile-index	same value the user-profile-index in the user profile in Table 5.5.8.3-1			

Condition	Explanation
MANUAL	Manual answer mode
AUTOMATIC	Automatic answer mode

5.5.3.11.2 PoC Settings from the SS

Table 5.5.3.11.2-1: PoC Settings from the SS

Derivation Path: RFC 4354 [103]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
poc-settings				
entity [1]				
id-attribute	"PoC-Settings-1"	unique identifier of the EPA (Event Publication Agent) Editor's note: to be clarified whether there are requirements for the id	RFC 4354 [103]	
isb-settings				
incoming-session-barring	"false"			
am-settings			RFC 4354 [103]	
answer-mode				
	"manual"			MANUAL
	"automatic"			AUTOMAT IC
ipab-settings				
incoming-personal-alert-barring	"false"			
sss-settings				
simultaneous-sessions-support	"true"			
selected-user-profile-index			TS 24.379 [9] clause 7.4.1	
user-profile-index	same value the user-profile-index in the user profile in Table 5.5.8.3-1			

Condition	**Explanation**
MANUAL	Manual answer mode
AUTOMATIC	Automatic answer mode

5.5.3.12 Xcap-diff documents

Table 5.5.3.12-1: xcap-diff document for MCX configuration

Derivation Path: RFC 5874 [107] clause 4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
xcap-diff	encrypted (NOTE 5)			
xcap-root attribute	tsc_MCX_CMSXCAPRootURI	same URI as <CMS-XCAP-root-URI> element of the initial UE configuration		
document[1]				
sel attribute	AUID1 & "/users/" & XUID & "/" & MCSUEID & "/" & UE-Config "	NOTE 1a, 2, 2A, 3		
new-etag	arbitrary value			
previous-etag	same as new-etag			
document[2]				
sel attribute	AUID2 & "/users/" & XUID & "/" & User-Profile	NOTE 1b, 2, 2B		
new-etag	arbitrary value (different than for document[1])			
previous-etag	same as new-etag			
document[3]				
sel attribute	AUID3 & "/global/service-config.xml"	NOTE 1c		
new-etag	arbitrary value (different than for document[1] and [2])			
previous-etag	same as new-etag			

NOTE 1a: AUID1 = "org.3gpp.mcptt.ue-config" for Condition MCPTT
    AUID1 = "org.3gpp.mcvideo.ue-config" for Condition MCVideo
    AUID1 = "org.3gpp.mcdata.ue-config" for Condition MCData
NOTE 1b: AUID2 = "org.3gpp.mcptt.user-profile" for Condition MCPTT
    AUID2 = "org.3gpp.mcvideo.user-profile" for Condition MCVideo
    AUID2 = "org.3gpp.mcdata.user-profile" for Condition MCData
NOTE 1c: AUID3 = "org.3gpp.mcptt.service-config" for Condition MCPTT
    AUID3 = "org.3gpp.mcvideo.service-config" for Condition MCVideo
    AUID3 = "org.3gpp.mcdata.service-config" for Condition MCData
NOTE 2: XUID = "sip:" & px_MCPTT_ID_User_A for Condition MCPTT
    XUID = "sip:" & px_MCVideo_ID_User_A for Condition MCVideo
    XUID = "sip:" & px_MCData_ID_User_A for Condition MCData
NOTE 2A: UE-Config = "mcptt-ue-configuration.xml" for Condition MCPTT
    UE-Config = "mcvideo-ue-configuration.xml" for Condition MCVideo
    UE-Config = "mcdata-ue-configuration.xml" for Condition MCData
NOTE 2B: User-Profile = "mcptt-user-profile-" & profile-index & ".xml" for Condition MCPTT (NOTE 4)
    User-Profile = "mcvideo-user-profile-" & profile-index & ".xml" for Condition MCVideo (NOTE 4)
    User-Profile = "mcdata-user-profile-" & profile-index & ".xml" for Condition MCData (NOTE 4)
NOTE 3: MCSUEID = Instance id of the UE (derived from the IMEI according to 23.003 [69] clause 13.8)
NOTE 4: profile-index is the same as in the user-profile-index attribute of the corresponding document
NOTE 5: The content of the root element <xcap-diff> (not including the xcap-root attribute) is encrypted as described in Table 5.5.13.2-2				

Table 5.5.3.12-2: xcap-diff document for MCX group configuration

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: RFC 5854 [107] clause 4				
xcap-diff	encrypted (NOTE 1)			
xcap-root	tsc_MCX_GMSXCAPRootURI	same URI as <GMS-XCAP-root-URI> element of the initial UE configuration		
document[1]				GROUPCONFIG
sel attribute	"org.openmobilealliance.groups/global/byGroupID/" & Group-ID	NOTE 2		
new-etag	arbitrary value for first notification, 'incremented' value otherwise (NOTE 4)	NOTE 5		
previous-etag	same as new-etag for first notification, same as <new-etag> of previous notification otherwise	NOTE 5		
element[1]				GROUPKEY
sel attribute	"org.3gpp.MCPTT-GKTP/global/byGroupID/" & Group-ID & "/~~" & Node-Sel	NOTE 2, 3		
GKTPs	group key transport payloads (GKTP) document as described in Table 5.5.3.14-1			
NOTE 1: The content of the root element <xcap-diff> (not including the xcap-root attribute) is encrypted as described in Table 5.5.13.2-2				
NOTE 2: Group-ID = px_MCPTT_Group_A_ID for Condition MCPTT Group-ID = px_MCVideo_Group_A_ID for Condition MCVideo Group-ID = px_MCData_Group_A_ID for Condition MCData				
NOTE 3: Node-Sel = "/group/list-service/mgktp:GKTPs?xmlns(mgktp=urn:3gpp:ns:mcpttGKTP:1.0)"				
NOTE 4: It is TTCN implementation dependent how the etag is incremented				
NOTE 5: Values for <new-etag> and <previous-etag> shall be different for different groups				

5.5.3.13   Void

5.5.3.14   MCS group key transport payloads (GKTP) document

Table 5.5.3.14-1: group key transport payloads (GKTP) document

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.481 [11] clause 7.7				
GKTPs				
GMK-GKTPs				
GKTP[1]	MIKEY message as described in Table 5.5.9.1-3	MIKEY message, containing the GMK	TS 33.180 [94]	
id attribute	arbitrary value	unique charstring assigned by the SS		

5.5.3.15 Conference-info

Table 5.5.3.15-1: Conference-info from the SS

Derivation Path: RFC 4575 [127] clause 6				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
conference-info				
entity attribute	Encrypted URI (NOTE 1) with value set to px_MCPTT_Group_A_ID	The URI of the group		MCPTT
	Encrypted URI (NOTE 1) with value set to px_MCVideo_Group_A_ID			MCVIDEO
state attribute	not present			
version attribute	not present			
conference-description	not present			
host-info	not present			
conference-state	not present			
users				
user [1]				
entity attribute	Encrypted URI (NOTE 1) with value set to px_MCPTT_ID_User_A			MCPTT
	Encrypted URI (NOTE 1) with value set to px_MCVideo_ID_User_A			MCVIDEO
state attribute	not present			
display-text	not present			
associated-aors	not present			
roles	not present			
languages	not present			
cascaded-focus	not present			
endpoint				
entity attribute	px_MCX_SIP_PublicUserId_A_1	Contact URI of the participant	RFC 4575 [127] clause 5.7	
status attribute	not present			
display-text	not present			
referred	not present			
status	connected			
joining-method	not present			
joining-info	not present			
disconnection-method	not present			
disconnection-info	not present			
media	not present			
call-info	not present			
user [2]				
entity attribute	Encrypted URI (NOTE 1) with value set to px_MCPTT_ID_User_B			MCPTT
	Encrypted URI (NOTE 1) with value set to px_MCVideo_ID_User_B			MCVIDEO
state attribute	not present			
display-text	not present			
associated-aors	not present			
roles	not present			
languages	not present			
cascaded-focus	not present			
endpoint				
entity attribute	px_MCX_SIP_PublicUserId_B	Contact URI of the participant	RFC 4575 [127] clause 5.7	
status attribute	not present			
display-text	not present			
referred	not present			

status	connected			
joining-method	not present			
joining-info	not present			
disconnection-method	not present			
disconnection-info	not present			
media	not present			
call-info	not present			
user [3]				
entity attribute	Encrypted URI (NOTE 1) with value set to px_MCPTT_ID_User_C			MCPTT
	Encrypted URI (NOTE 1) with value set to px_MCVideo_ID_User_C			MCVIDEO
state attribute	not present			
display-text	not present			
associated-aors	not present			
roles	not present			
languages	not present			
cascaded-focus	not present			
endpoint				
entity attribute	px_MCX_SIP_PublicUserId_C	Contact URI of the participant	RFC 4575 [127] clause 5.7	
status attribute	not present			
display-text	not present			
referred	not present			
status	connected			
joining-method	not present			
joining-info	not present			
disconnection-method	not present			
disconnection-info	not present			
media	not present			
call-info	not present			
sidebars-by-ref	not present			
sidebars-by-val	not present			
NOTE 1: Encrypted attribute as described in Table 5.5.13.3-1				

5.5.3.16   MCS-Regroup

5.5.3.16.1   Common conditions for MCS-Regroup

The following conditions apply throughout clause 5.5.3.16:

Table 5.5.3.16.1-1: Conditions

Condition	Explanation
GROUP_REGROUP	Creating a group regroup using preconfigured group
USER_REGROUP	Creating a user regroup using preconfigured group
REMOVE	Remove a user or group regroup using a preconfigured group

5.5.3.16.2 MCS-Regroup from the UE

- MCPTT

Table 5.5.3.16.2-1: MCPTT-Regroup from the UE

Derivation Path: TS 24.379 [9] clause F.7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttregroup				
mcpttregroup-Params				
preconfig-group-id	Encrypted (NOTE 1)			
preconfigured-group	not present			
	px_MCPTT_Group_A_ID	The URI of a group to be used as the configuration of the group regroup		GROUP_REGROUP, USER_REGROUP
mcptt-regroup-uri	Encrypted (NOTE 2)			
mcptt-regroup-uri	px_MCPTT_Group_T_ID	The URI of the group regroup		
groups-for-regroup	not present			
groups-for-regroup	Encrypted (NOTE 3)			GROUP_REGROUP
group [1]	px_MCPTT_Group_A_ID	The URI of a group to regroup		
group [2]	px_MCPTT_Group_B_ID	The URI of a group to regroup		
users-for-regroup	not present			
users-for-regroup	Encrypted (NOTE 4)			USER_REGROUP
user [1]	px_MCPTT_ID_User_A			
user [2]	px_MCPTT_ID_User_B			
user [3]	px_MCPTT_ID_User_D			
regroup-action	"create"			
	"remove"			REMOVE
NOTE 1: Element content encryption either of element <preconfig-group-id> or of its sub-element <preconfigured-group> (if present) as described in Table 5.5.13.2-1				
NOTE 2: Element content encryption either of element <mcptt-regroup-uri> or of its sub-element <mcptt-regroup-uri> as described in Table 5.5.13.2-1				
NOTE 3: Element content encryption either of element <groups-for-regroup> or of each of its sub-elements <group> as described in Table 5.5.13.2-1				
NOTE 4: Element content encryption either of element <users-for-regroup> or of each of its sub-elements <user> as described in Table 5.5.13.2-1				

5.5.3.16.3 MCS-Regroup from the SS

- MCPTT

Table 5.5.3.16.3-1: MCPTT-Regroup from the SS

Derivation Path: TS 24.379 [9] clause F.7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttregroup				
mcpttregroup-Params				
preconfig-group-id				
preconfig-group-id	Encrypted (NOTE 1)			
preconfigured-group	not present			
	px_MCPTT_Group_A_ID	The URI of a group to be used as the configuration of the group regroup		GROUP_REGROUP, USER_REGROUP
mcptt-regroup-uri	Encrypted (NOTE 2)			
mcptt-regroup-uri	px_MCPTT_Group_T_ID	The URI of the group regroup		
groups-for-regroup	not present			
groups-for-regroup	Encrypted (NOTE 3)			GROUP_REGROUP
group [1]	px_MCPTT_Group_A_ID	The URI of a group to regroup		
group [2]	px_MCPTT_Group_B_ID	The URI of a group to regroup		
users-for-regroup	not present			
users-for-regroup	Encrypted (NOTE 4)			USER_REGROUP
user [1]	px_MCPTT_ID_User_A			
user [2]	px_MCPTT_ID_User_B			
user [3]	px_MCPTT_ID_User_D			
regroup-action	"create"			
	"remove"			REMOVE
NOTE 1: Element content encryption of element <preconfig-group-id>'s sub-element <preconfigured-group> (if present) as described in Table 5.5.13.2-2				
NOTE 2: Element content encryption of element <mcptt-regroup-uri>'s sub-element <mcptt-regroup-uri> as described in Table 5.5.13.2-2				
NOTE 3: Element content encryption of each of element <groups-for-regroup>'s sub-elements <group> as described in Table 5.5.13.2-2				
NOTE 4: Element content encryption of each of element <users-for-regroup>'s sub-elements <user> as described in Table 5.5.13.2-2				

5.5.4 Default HTTP message and other information elements

5.5.4.1 General

The HTTP Messages are specified in RFC 2616 [26]. Wherever another reference applies to their content it is explicitly indicated.

The following conditions apply throughout clause 5.5:

Table 5.5.4.1-1: Conditions

Condition	Explanation

AUTH	Message/IE sent only as part of an MCX UE authentication
UEINITIALCONFIG	Message/IE sent only as part of an MCX UE initial configuration
USERAUTH	Message/IE sent only as part of an MCX UE user authentication
UECONFIG	Message/IE sent only as part of an MCX UE configuration
UEUSERPROF	Message/IE sent only as part of an MCX UE User profile configuration
UESERVCONFIG	Message/IE sent only as part of an MCX UE service configuration
GROUPCONFIG	Message/IE sent only as part of an MCX group configuration
TEMPGROUP	Message/IE sent only in temporary group creation scenario
TOKEN	Message/IE sent only as part of an MCX token exchange
KMSINIT	Message/IE sent only as part of an MCX KMS initialisation
KMSKEY	Message/IE sent only as part of an MCX KMS key exchange
FD_HTTP	Message/IE sent only as part of MCData signalling for FD using HTTP

5.5.4.2 GET

Table 5.5.4.2-1: HTTP GET

Derivation Path: RFC 2616 [26]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
Method	"GET"			
Request-URI				
uri	tsc_MCX_IdMS_auth_UriPath	points to the Authorisation endpoint of the IdM Server	TS 33.180 [94]	AUTH
	px_MCX_InitialConfigServer_UriPath	points to initial UE Configuration document	TS 24.484 [14]	UEINITIALCONFIG
	tsc_MCX_CMSXCAPRootURI & "/" & AUID1 & "/users/" & XUI & ue-config-docname	points to UE Configuration document (NOTE 1a, 2, 3, 5)	TS 24.484 [14]	UECONFIG
	tsc_MCX_CMSXCAPRootURI & "/" & AUID2 & "/users/" & XUID & ""/" & user-profile-docname	points to UE User Profile document (NOTE 1b, 2, 4)	TS 24.484 [14]	UEUSERPROF
	tsc_MCX_CMSXCAPRootURI & "/" & AUID3 & "/global/service-config.xml"	points to UE Service Configuration document (NOTE 1c, 2)	TS 24.484 [14]	UESERVCONFIG
	tsc_MCX_GMSXCAPRootURI & "/" & "org.openmobilealliance.groups/global/byGroupID/" & group-id	points to group configuration document (NOTE 6)	TS 24.481 [11]	GROUPCONFIG
	URI as contained in the payload of the FD SIGNALLING PAYLOAD indication the file upload			FD_HTTP
query	As described in Table 5.5.4.10.1-1		TS 33.180 [94]	AUTH
HTTP-Version	"HTTP/1.1"			
Cache-Control			RFC 2616 [26]	
cache-directive	"no-cache"			
Authorization			RFC 2617 [72]	UECONFIG UEUSERPROF UESERVCONFIG GROUPCONFIG FD_HTTP
authentication-scheme	"Bearer"		RFC 6750 [104]	
b64token	Access token as assigned to the UE by Token Response		RFC 6750 [104]	
Authorization	not present			
Content-Type				AUTH
media-type	"application/x-www-form-urlencoded"			
Content-Type	Not present			
Message-body	Not present			

NOTE 1a:	AUID1	= "org.3gpp.mcptt.ue-config" for Condition MCPTT
	AUID1	= "org.3gpp.mcvideo.ue-config" for Condition MCVIDEO
	AUID1	= "org.3gpp.mcdata.ue-config" for Condition MCDATA
NOTE 1b:	AUID2	= "org.3gpp.mcptt.user-profile" for Condition MCPTT
	AUID2	= "org.3gpp.mcvideo.user-profile" for Condition MCVIDEO
	AUID2	= "org.3gpp.mcdata.user-profile" for Condition MCDATA
NOTE 1c:	AUID3	= "org.3gpp.mcptt.service-config" for Condition MCPTT
	AUID3	= "org.3gpp.mcvideo.service-config" for Condition MCVIDEO
	AUID3	= "org.3gpp.mcdata.service-config" for Condition MCDATA
NOTE 2:	XUID	= "sip:" & px_MCPTT_ID_User_A for Condition MCPTT
	XUID	= "sip:" & px_MCVideo_ID_User_A for Condition MCVIDEO
	XUID	= "sip:" & px_MCData_ID_User_A for Condition MCDATA
NOTE 3:	MCSUEID = Instance id of the UE (derived from the IMEI according to 23.003 [69] clause 13.8)	
NOTE 4:	user-profile-docname= "mcptt-user-profile-" & profile-index & ".xml" for Condition MCPTT	
	user-profile-docname= "mcvideo-user-profile-" & profile-index & ".xml" for Condition MCVIDEO	
	user-profile-docname= "mcdata-user-profile-" & profile-index & ".xml" for Condition MCDATA	
	with profile-index being the same as in the <user-profile-index> attribute of the corresponding document	
NOTE 5:	ue-config-docname = "mcptt-ue-configuration.xml" for Condition MCPTT	
	ue-config-docname = "mcvideo-ue-configuration.xml" for Condition MCVIDEO	
	ue-config-docname = "mcdata-ue-configuration.xml" for Condition MCDATA	
NOTE 6:	group-id = px_MCPTT_Group_A_ID for Condition MCPTT	
	group-id = px_MCVideo_Group_A_ID for Condition MCVIDEO	
	group-id = px_MCData_Group_A_ID for Condition MCDATA	

5.5.4.3 POST

Table 5.5.4.3-1: HTTP POST

Derivation Path: RFC 2616 [26]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line				
Method	"POST"			
Request-URI				
uri	tsc_MCX_IdMS_auth_ UriPath	points to the Authorisation endpoint of the IdM Server	TS 33.180 [94]	AUTH
	tsc_MCX_IdMS_userau th_UriPath	points to the endpoint verifying the user authentication; same URI as provided to the UE in the action attribute of the HTML login form	TS 33.180 [94] HTML 4.01 Specification [105]	USERAUT H
	tsc_MCX_IdMS_token_ UriPath	points to the Token endpoint of the IdM Server	TS 33.180 [94]	TOKEN
	tsc_MCX_KMS_Client ReqUrl_init	"KMS Initialize" request according to TS 33.180 [94] D.2.3	TS 33.180 [94]	KMSINIT
	tsc_MCX_KMS_Client ReqUrl	"KMS KeyProvision" request according to TS 33.180 [94] D.2.4	TS 33.180 [94]	KMSKEY
	tsc_MCX_GMSXCAPR ootURI & "/" & "org.openmobilealliance.groups/users/" & px_MCX_GroupCreatio nXUI & "/" & temporary-group-id	Points to the temporary group configuration document to be created (NOTE 1)	TS 24.481[11] clause 6.3.14.2	TEMPGRO UP
	tsc_MCData_MSF_URI	The absolute URI identifying the resource on a media storage function	TS 24.282 [87], clause 10.2.2.1	FD_HTTP
HTTP-Version	"HTTP/1.1"			
Cache-Control			RFC 2616 [26]	
cache-directive	"no-cache"			
Authorization			RFC 2617 [72]	KMSINIT, KMSKEY, TEMPGRO UP, FD_HTTP
authentication-scheme	"Bearer"		RFC 6750 [104]	
b64token	Access token as assigned to the UE by Token Response		RFC 6750 [104]	
Host				FD_HTTP
host	tsc_MCData_MSF_Hos tname	hostname identifying the media storage function	TS 24.282 [87], clause 10.2.2.1	
port	not present			
Content-Type				AUTH, USERAUT H, TOKEN
media-type	"application/x-www-form-urlencoded"			
Content-Type		present in case of KMS request security		(KMSINIT OR KMSKEY) AND pc_MCX_K MS_Reque stSecurity
media-type	"application/xml"		RFC 7303 [112]	

ETSI

Content-Type				TEMPGRO UP
media-type	"application/vnd.3gpp.G MOP+xml"			
Content-Type				FD_HTTP
media-type	"multipart/mixed"		TS 24.282 [87], clause 10.2.2.1	
Message-body				AUTH
Authentication Request	As described in Table 5.5.4.10.1-1			
Message-body			HTML 4.01 Specification [105]	USERAUT H
user	px_MCX_User_A_user name			
password	px_MCX_User_A_pass word			
Message-body				TOKEN
Token request	As described in Table 5.5.4.10.3-1			
Message-body		present in case of KMS request security		(KMSINIT OR KMSKEY) AND pc_MCX_K MS_Reque stSecurity
Signed KMS Request	As described in Table 5.5.4.10.9-1			
Message-body				TEMPGRO UP
Temporary Group Creation Document"	As described in Table 5.5.7.4-2			
Message-body				FD_HTTP
MIME body part		**MCData-Info**		
MIME-part-headers				
MIME-Content-Type	"application/vnd.3gpp. mcdata-info+xml"			
MIME-part-body	MCData-Info described in Table 5.5.3.2.1-3			
MIME body part		**File content**	TS 24.282 [87] clause 10.2.2.1	
MIME-part-headers				
MIME-Content-Type	"application/octet-stream"			
MIME-part-body	binary data representing the file			

NOTE 1: temporary-group-id = px_MCPTT_Group_T_ID for Condition MCPTT
            temporary-group-id = px_MCVideo_Group_T_ID for Condition MCVIDEO
            temporary-group-id = px_MCData_Group_T_ID for Condition MCDATA				

5.5.4.4 PUT

Table 5.5.4.4-1: HTTP PUT

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: RFC 2616 [26]				
Request-line				
Method	"PUT"			
Request-URI	tsc_MCX_GMSXCAPRootURI & "/" & "org.openmobilealliance.groups/users/" & px_MCX_GroupCreationXUI & "/" & document name (NOTE 1)	XCAP URI in users tree where the XUI is set to a group creation XUI configuration parameter	TS 24.481 [11] clause 6.3.2.2.1	GROUPCREATE
Cache-Control			RFC 2616 [26]	
cache-directive	"no-cache"			
Authorization		TS 24.482 [12] A.2.3: Expected by the server to validate and identify the client	RFC 2617 [72]	
authentication-scheme	"Bearer"		RFC 6750 [104]	
b64token	Access token as assigned to the UE by Token Response		RFC 6750 [104]	
Content-Type				GROUPCREATE
media-type	application/vnd.oma.poc.groups+xml			
Message-body				GROUPCREATE
Group Creation Document	As described in Table 5.5.7.4-1			
NOTE 1: document name is the name of the group document contained in the message body				

Condition	Explanation
GROUPCREATE	Message/IE sent only in group creation scenario
NOTE: For further conditions see table 5.5.1-1	

5.5.4.5 DELETE

Table 5.5.4.5-1: HTTP DELETE

Derivation Path: RFC 2616 [26]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-line				
Method	"DELETE"			
Request-URI	tsc_MCX_GMSXCAPRootURI & "/" & "org.openmobilealliance.groups/users/" & px_MCX_GroupCreationXUI & "/" & temporary-group-id	Points to the group configuration document (NOTE 1)	TS 24.481 [11]	TEMPGROUP
Cache-Control			RFC 2616 [26]	
cache-directive	"no-cache"			
Authorization		TS 24.482 [12] A.2.3: Expected by the server to validate and identify the client	RFC 2617 [72]	
authentication-scheme	"Bearer"		RFC 6750 [104]	
b64token	Access token as assigned to the UE by Token Response		RFC 6750 [104]	

NOTE 1: temporary-group-id = px_MCPTT_Group_T_ID for Condition MCPTT
          temporary-group-id = px_MCVideo_Group_T_ID for Condition MCVIDEO
          temporary-group-id = px_MCData_Group_T_ID for Condition MCDATA				

5.5.4.6 HTTP 200 (OK)

Table 5.5.4.6-1: HTTP 200 (OK)

Derivation Path: RFC 2616 [26]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line				
HTTP-Version	"HTTP/1.1"			
Status-Code	"200"			
Reason-Phrase	"OK"			
Cache-Control			RFC 2616 [26]	
cache-directive	"no-store"			
ETag			RFC 2616 [26]	
entity-tag	Any value as selected by the SS			UEINITIAL CONFIG, UECONFIG, UEUSERPROF, UESERVCONFIG, GROUPCONFIG; TEMPGROUP
Pragma			RFC 2616 [26]	
pragma-directive	"no-cache"			
Content-Length				
value	length of message-body			
Content-Type				TOKEN
media-type	"application/json;charset=UTF-8"		TS 33.180 [94]	
Content-Type				KMSINIT
media-type	"application/xml"		TS 33.180 [94]	
Content-Type				KMSKEY
media-type	"application/xml"		TS 33.180 [94]	
Content-Type				UEINITIAL CONFIG
media-type	"application/vnd.3gpp.mcptt-ue-init-config+xml"		TS 24.484 [14]	
Content-Type				UECONFIG
media-type	"application/vnd.3gpp.mcptt-ue-config+xml"		TS 24.484 [14]	MCPTT
	"application/vnd.3gpp.mcvideo-ue-config+xml"			MCVIDEO
	"application/vnd.3gpp.mcdata-ue-config+xml"			MCDATA
Content-Type				UEUSERPROF
media-type	"application/vnd.3gpp.mcptt-user-profile+xml"		TS 24.484 [14]	MCPTT
	"application/vnd.3gpp.mcvideo-user-profile+xml"			MCVIDEO
	"application/vnd.3gpp.mcdata-user-profile+xml"			MCDATA
Content-Type				UESERVCONFIG
media-type	"application/vnd.3gpp.mcptt-service-config+xml"		TS 24.484 [14]	MCPTT
	"application/vnd.3gpp.mcvideo-service-config+xml"			MCVIDEO

	"application/vnd.3gpp. mcdata-service-config+xml"			MCDATA
Content-Type				GROUPC ONFIG
media-type	"application/vnd.oma.p oc.groups+xml"		TS 24.481 [11]	
Content-Type				TEMPGRO UP
media-type	"application/vnd.3gpp.G MOP+xml"		TS 24.481 [11]	
Content-Type				FD_HTTP
media-type	"application/octet-stream"			
Message-body				TOKEN
Token response	As described in Table 5.5.4.10.4-1			
Message-body				KMSINIT
KMS Certificate	As described in Table 5.5.4.10.6-1			
Message-body				KMSKEY
KMS Key Set	As described in Table 5.5.4.10.8-1			
Message-body				UEINITIAL CONFIG
mcptt-initial-UE-configuration	As described in Table 5.5.8.1-1	Initial UE Configuration document returned		
Message-body				UECONFI G
mcptt-UE-configuration	As described in Table 5.5.8.2-1	UE Configuration document returned		MCPTT
mcvideo-UE-configuration	As described in Table 5.5.8.5-1	UE Configuration document returned		MCVIDEO
mcdata-UE-configuration	As described in Table 5.5.8.10-1	UE Configuration document returned		MCDATA
Message-body				UEUSERP ROF
mcptt-user-profile	As described in Table 5.5.8.3-1	UE User Profile document returned		MCPTT
mcvideo-user-profile	As described in Table 5.5.8.7-1	UE User Profile document returned		MCVIDEO
mcdata-user-profile	As described in Table 5.5.8.11-1	UE User Profile document returned		MCDATA
Message-body				UESERVC ONFIG
service-configuration-info	As described in Table 5.5.8.4-1	UE Service Configuration document returned		MCPTT
service-configuration-info	As described in Table 5.5.8.8-1	UE Service Configuration document returned		MCVIDEO
service-configuration-info	As described in Table 5.5.8.12-1	UE Service Configuration document returned		MCDATA
Message-body				GROUPC ONFIG
group-configuration	As described in Table 5.5.7.1-1	Group Configuration document returned		
Message-body				TEMPGRO UP
gmop:document				
gmop:response				
gmop:group-regroup-creation-response				
temporary-group-document-ETag	unique value arbitrarily selected by the SS			
Message-body				FD_HTTP

file content	binary data representing the file			

5.5.4.7 HTTP 201 (Created)

Table 5.5.4.7-1: HTTP 201 (Created)

Derivation Path: RFC 2616 [26]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line				
HTTP-Version	"HTTP/1.1"			
Status-Code	"201"			
Reason-Phrase	"Created"			
Cache-Control			RFC 2616 [26]	
cache-directive	"no-store"			
Pragma			RFC 2616 [26]	
pragma-directive	"no-cache"			
ETag			RFC 2616 [26]	
entity-tag	unique value arbitrarily selected by the SS			
Location			RFC 7231 [118] clauses 4.3.3, 6.3.2, 7.1.2	
uri	tsc_MCX_GMSXCAPRootURI & "/" & "org.openmobilealliance.groups/global/byGroupID/" & group-id	URI referring to the created group document		
	tsc_MCData_MSF_URI & "/file-location-1"	URL identifying the location of the stored file		FD_HTTP
NOTE 1: group-id = px_MCPTT_Group_B_ID for Condition MCPTT group-id = px_MCVideo_Group_B_ID for Condition MCVIDEO group-id = px_MCData_Group_B_ID for Condition MCDATA				

5.5.4.8 HTTP 302 (Found)

Table 5.5.4.8-1: HTTP 302 (Found)

Derivation Path: RFC 2616 [26]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line				
HTTP-Version	"HTTP/1.1"			
Status-Code	"302"			
Reason-Phrase	"Found"			
Location				AUTH
Location-URI				
uri	px_MCX_OAuth_RedirectURI_A	Identifier of the MCPTT client making the API request	TS 33.180 [94]	
query	As described in Table 5.5.4.10.2-1			

5.5.4.9 HTTP 409 (Conflict)

Table 5.5.4.9-1: HTTP 409 (Conflict)

Derivation Path: RFC 2616 [26]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Status-Line				
HTTP-Version	"HTTP/1.1"			
Status-Code	"409"			
Reason-Phrase	"URI constraint violated"	Conflict reason	TS 24.484 [14]	

5.5.4.10 HTTP Message Bodies

5.5.4.10.1 Authentication Request

Table 5.5.4.10.1-1: Authentication Request

Derivation Path: TS 33.180 [94], clause B.4.2.2				
Information Element (NOTE 1)	**Value/remark**	**Comment**	**Reference**	**Condition**
response-type	"code"	For native MCX clients the value shall be set to "code"	OpenID Connect 1.0 [95]	
client_id	px_MCX_OAuth_ClientId_A	Identifier of the MCX client making the API request	OpenID Connect 1.0 [95]	
Scope	"openid"	Scope values are expressed as a list of space-delimited, case-sensitive strings which indicate which MCS resource servers the client is requesting access to. "openid" is defined by the OpenID Connect standard and is mandatory	TS 33.180 [94] OpenID Connect 1.0 [95]	
	"3gpp:mc:ptt_service" "3gpp:mc:ptt_key_management_service" "3gpp:mc:ptt_config_management_service" "3gpp:mc:ptt_group_management_service" NOTE: The list may contain further scope values which are not checked	Additional authorization scopes when the UE supports MCPTT		MCPTT
	"3gpp:mc:video_service" "3gpp:mc:video_key_management_service" "3gpp:mc:video_config_management_service" "3gpp:mc:video_group_management_service" NOTE: The list may contain further scope values which are not checked	Additional authorization scopes when the UE supports MCVideo		MCVIDEO
	"3gpp:mc:data_service" "3gpp:mc:data_key_management_service" "3gpp:mc:data_config_management_service" "3gpp:mc:data_group_management_service" NOTE: The list may contain further scope values which are not checked	Additional authorization scopes when the UE supports MCData		MCDATA
redirect_uri	px_MCX_OAuth_RedirectURI_A	The URI of the MCX client to which the IdM server will redirect the MCX client's user agent in order to return the authorization code	OpenID Connect 1.0 [95]	
state	any value as selected by the UE	An opaque value used by the MCX client to maintain state between the authentication request and authentication response	OpenID Connect 1.0 [95]	

acr-values	"3gpp:acr:password"	Space-separated string that specifies the acr values that the IdM server is being requested to use for processing this authentication request	TS 33.180 [94]	
code-challenge	any value	base64url-encoded SHA-256 challenge: hash of the code_verifier selected by the UE	TS 33.180 [94] RFC 7636 [100]	
codechallenge-method	"S256"	The hash method used to transform the code verifier to produce the code challenge	TS 33.180 [94] RFC 7636 [100]	
NOTE 1: The Authentication Request may contain other parameters in addition to the parameters specified in this column.				

5.5.4.10.2   Authentication Response

Table 5.5.4.10.2-1: Authentication Response

Derivation Path: TS 33.180 [94], clause B.4.2.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
code	"SplxlOBeZQQYbYS6 WxSbIA"	The authorization code generated by the authorization endpoint and returned to the MCX client via the authentication response	TS 33.180 [94]	
state	same value as in the Authentication Request	The value shall match the exact value used in the authorization request	TS 33.180 [94]	

5.5.4.10.3 Token Request

Table 5.5.4.10.3-1: Token Request

Derivation Path: TS 33.180 [94], clause B.4.2.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
grant-type	"authorization_code"		RFC 2616 [26]	
code	same value as assigned by the SS in the Authentication Response	The authorization code generated by the authorization endpoint and returned to the MCX client via the authentication response	TS 33.180 [94]	
client_id	px_MCX_OAuth_Client Id_A	Identifier of the MCX client making the API request	TS 33.180 [94]	
redirect_uri	px_MCX_OAuth_Redir ectURI_A	The URI of the MCX client to which the IdM server will redirect the MCX client's user agent	TS 33.180 [94]	
code_verifier	Value selected by the UE: The SS shall check that the code-challenge in the Authentication Request is the base64url-encoded SHA-256 hash of the code-verifier	A cryptographically random string that is used to correlate the authorization request to the token request; the minimum length is 43 characters, the maximum length of 128 characters	TS 33.180 [94] RFC 7636 [100]	

5.5.4.10.4 Token Response

Table 5.5.4.10.4-1: Token Response

Derivation Path: TS 33.180 [94], clause B.4.2.5				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
access_token		The access token. The access token is opaque to the MCX client	RFC 6749 [77] TS 33.180 [94]	
{				
{		Header Algorithm		
"kid"	"jws-rsa"	hint indicating which key was used to secure the JWS: name of the RSA public key in case of RS256 Editor's note: value to be confirmed	RFC 7515 [102]	
"alg"	"RS256"	identifies the cryptographic algorithm used to secure the JWS: RSASSA-PKCS1-v1_5 SHA-256 digital signature Editor's note: value to be confirmed	RFC 7515 [102]	
}				
{		Payload Data	RFC 7519 [101]	
"mcptt_id"	px_MCPTT_ID_User_A		TS 24.380 TS 24.483 TS 24.380 B.2.2.3	MCPTT
"mcvideo_id"	px_MCVideo_ID_User_A		TS 33.180 B.2.2.3	MCVIDEO
"mcdata_id"	px_MCData_ID_User_A		TS 24.380 B.2.2.3	MCDATA
"scope"	"openid"	list of space-delimited, case-sensitive strings to inform the client of the scope of the access token issued and is OPTIONAL, if identical to the scope requested by the client otherwise REQUIRED "openid" is defined by the OpenID Connect standard and is mandatory regardless from the MCS context in which the message is used	RFC 6749 [77] TS 33.180 [94] B.2.2.2 OpenID Connect 1.0 [95]	
	"3gpp:mc:ptt_service" "3gpp:mc:ptt_key_management_service" "3gpp:mc:ptt_config_management_service" "3gpp:mc:ptt_group_management_service"			MCPTT
	"3gpp:mc:video_service" "3gpp:mc:video_key_management_service" "3gpp:mc:video_config_management_service" "3gpp:mc:video_group_management_service"			MCVIDEO

				MCDATA
	"3gpp:mc:data_service" "3gpp:mc:data_key_man agement_service" "3gpp:mc:data_config_m anagement_service" "3gpp:mc:data_group_m anagement_service"			MCDATA
"exp"	Current system time + 7199 seconds; the system time is the number of seconds since 00:00:00 UTC on 1 January 1970	Number containing a NumericData value identifies the expiration time on or after which the JWT MUST NOT be accepted for processing Editor's note: value to be confirmed	RFC 7519 [101] TS 33.180 [94]	
"client_id"	Same value as received in the token request	Identifier of the MCX client making the API request	TS 33.180 [94]	
}				
Signature	HASH [base64UrlEncode(heade r) + "." + base64UrlEncode(payloa d))	Created by the hash algorithm corresponding to the algorithm provided in the header	RFC 7515 [102]	
}				
refresh_token	"Y7NSzUJuS0Jp7G4SKp BKSOJVHIZxFbxqsqCIZ hOEk9"	Arbitrarily selected string: The refresh token that can be used to refresh the access token and avoid having to prompt the user for authentication again	RFC 6749 [77]	
id_token		The MCX client may validate the user with the ID token and configure itself for the user	RFC 6749 [77] TS 33.180 [94]	
{				
{		Header Algorithm	RFC 7515 [102]	
"kid"	"jws-rsa"	hint indicating which key was used to secure the JWS Editor's note: value to be confirmed		
"alg"	"RS256"	identifies the cryptographic algorithm used to secure the JWS Editor's note: value to be confirmed		
}				
{		Payload Data	RFC 7519 [101]	
"mcptt_id"	px_MCPTT_ID_User_A		TS 24.380 TS 24.483 TS 33.180 B.2.1.3	MCPTT
"mcvideo_id"	px_MCVideo_ID_User_A		TS 33.180 B.2.1.3	MCVIDEO
"mcdata_id"	px_MCData_ID_User_A		TS 24.380 B.2.1.3	MCDATA

"sub"	"1234567890"	Arbitrarily selected string: case-sensitive string containing a StringOrURI value which identifies the principal that is the subject of the JWT and is optional	RFC 7519 [101]	
"aud"	client_id as received in token request	Audience: identifies the recipients that the JWT is intended for and is optional	RFC 7519 [101]	
"iss"	tsc_MCX_IdMS_token_UriPath	Issuer: case-sensitive string containing a StringOrURI value which identifies the principal that issued the JWT and is optional	RFC 7519 [101]	
"exp"	Current system time + 7199 seconds; the system time is the number of seconds since 00:00:00 UTC on 1 January 1970	Number containing a NumericData value identifies the expiration time on or after which the JWT MUST NOT be accepted for processing	RFC 7519 [101] TS 33.180 [94]	
"iat"	Current system time Epoch time: number of seconds since 00:00:00 UTC on 1 January 1970	Numeric value which identifies the time at which the JWT was issued and is optional	RFC 7519 [101] TS 33.180 [94]	
}				
Signature	HASH (base64UrlEncode(header) + "." + base64UrlEncode(payload))	Created by the hash algorithm corresponding to the algorithm provided in the header	RFC 7515 [102]	
}				
token-type	"Bearer"	The token type for access	RFC 6749 [77]	
expires-in	"7199"	Token expiry time	RFC 6749 [77]	

5.5.4.10.5   Void

5.5.4.10.6   KMS Certificate

Table 5.5.4.10.6-1: KMS Certificate

Derivation Path: TS 33.180 [94], clause D.3.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
SignedKmsResponse				
Id	"kmsResponse"	arbitrarily selected id which the Signature's Reference URI refers to		
KmsUri	tsc_MCX_KMS_Hostname	The URI of the KMS which issued the key set		
UserUri	tsc_MCX_MC_ID_User_A Editor's note: to be clarified whether the MC ID can be used in this context or whether there are restrictions how to set the UserUri	The MC ID with which the user has used for authentication		
Time	Current system time of the SS	Time stamp of KMS message		
ClientReqUrl	tsc_MCX_KMS_ClientReqUrl_init	URL of the client making the key request		
KmsMessage				
KmsInit				
Version	"1.0.0"			
KmsCertificate				
Version	"1.1.0"	The version number of the certificate type		
Role	"Root"	This shall indicate whether the certificate is a "Root" or "External" certificate		
CertUri	tsc_MCX_KMS_CertUri	The URI of the Certificate (this object)		
KmsUri	tsc_MCX_KMS_Hostname	The URI of the KMS which issued the Certificate		
Issuer	Not present	(Optional) String describing the issuing entity		
ValidFrom	Not present	(Optional) Date from which the Certificate may be used		
ValidTo	Not present	(Optional) Date at which the Certificate expires		
Revoked	false	(Optional) A Boolean value defining whether a Certificate has been revoked		
UserIDFormat	"2"	Shall contain the value '2'		
UserKeyPeriod	"2592000"	The number of seconds that each user key issued by this KMS should be used (2592000 seconds are 30 days)		
UserKeyOffset	CurrentTimestamp MODULO UserKeyPeriod	UserKeyOffset so that KeyPeriod starts at current system time; CurrentTimestamp is the current system time in seconds since 0h on 1st Jan 1900		

PubEncKey	SAKKE Public Key Z_T derived from master secret z_T according to RFC 6508	The SAKKE Public Key, "Z_T". This is an OCTET STRING encoding of an elliptic curve point	RFC 6508 [99]	
PubAuthKey	ECCSI Public Key KPAK derived from private key KSAK according to RFC 6507	The ECCSI Public Key, "KPAK". This is an OCTET STRING encoding of an elliptic curve point	RFC 6507 [98]	
ParameterSet	Not present	(Optional) The choice of parameter set used for SAKKE and ECCSI		
KmsDomainList	Not present	(Optional) List of domains associated with the certificate		
SignedInfo				
CanonicalizationAlgorithm	"xml-c14n"	XML Signature processing		
SignatureAlgorithm	"HMAC-SHA-256"	Hashing algorithm to be applied to sign the SignedInfo with the key given in the KeyInfo		
Reference				
URI	"#kmsResponse"	referring to the data object for which the hash is generatet (KMS response element in this case)		
DigestAlgorithm	"SHA-256"	Hashing algorithm to be applied to sign the data object		
DigestValue	Hash signing the data object (referred to by the URI)			
SignatureValue	Hash signing the SignedInfo	The signing key is derived from the InK (px_MCX_InK) according to TS 33.180 [94] Annex F.1.4 with FC = 0x52 XPK-ID = InK-ID (px_MCX_InK_ID)		
KeyInfo				
KeyName	base64 encoded InK-ID (px_MCX_InK_ID)			

5.5.4.10.7   Void

5.5.4.10.8   KMS Key Set

Table 5.5.4.10.8-1: KMS Key Set

Derivation Path: TS 33.180 [94], clause D.3.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Signed KmsResponse				
Id	"kmsResponse"	arbitrarily selected id which the Signature's Reference URI refers to		
KmsUri	tsc_MCX_KMS_Hostname	The URI of the KMS which issued the key set		
UserUri	tsc_MCX_MC_ID_User _A Editor's note: to be clarified whether the MC ID can be used in this context or whether there are restrictions how to set the UserUri	The MC ID with which the user has used for authentication		
Time	Current system time of the SS	Time stamp of KMS message		
ClientReqUrl	tsc_MCX_KMS_Client ReqUrl_keyprov	URL of the client making the key request		
KmsMessage				
KmsKeyProv				
Version	"1.0.0"	The version number of the key provision XML		
KmsKeySet[1]				
Version	"1.1.0"	The version number of the key set XML		
KmsUri	tsc_MCX_KMS_Hostname	The URI of the KMS which issued the key set		
CertUri	Not present	(Optional) The URI of the Certificate which may be used to validate the key set		
Issuer	Not present	(Optional) String describing the issuing entity		
UserUri	px_MCPTT_ID_User_A	The user's MCPTT ID		MCPTT
	px_MCVideo_ID_User_ A	The user's MCVideo ID		MCVIDEO
	px_MCData_ID_User_ A	The user's MCData ID		MCDATA
UserID	UID generated according to annex F.2.1 of TS 33.180 [94] with MCX-Id as identifier Editor's note: to be clarified how to convert the UID into charstring (e.g. hexstring representation or base64 encoding)	UID corresponding to the key set	TS 33.180 [94]	
ValidFrom	Not present	(Optional) Date and time from which the key set may be used		
ValidTo	Not present	(Optional) Date and time at which the key set expires		

Derivation Path: TS 33.180 [94], clause D.3.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Signed KmsResponse				
KeyPeriodNo	FLOOR((CurrentTimestamp - UserKeyOffset) / UserKeyPeriod)	Current Key Period: CurrentTimestamp is the current system time in seconds since 0h on 1st Jan 1900; UserKeyOffset and UserKeyPeriod are given in the KMS Certificate (Table 5.5.4.10.6-1) in seconds	TS 33.180 [94]	
Revoked	"false"	(Optional) A Boolean value defining whether the key set has been revoked		
UserDecryptKey		The SAKKE "Receiver Secret Key" (RSK). This is an OCTET STRING encoding of an elliptic curve point	RFC 6508 [99]	
EncryptionAlgorithm	"AES256"	Encryption algorithm to use		
KeyInfo				
KeyName	base64 encoded TrK-ID (px_MCX_TrK_ID)			
CipherData				
CipherValue	encrypted RSK	The encryption key is derived from the TrK (px_MCX_TrK) according to TS 33.180 [94] Annex F.1.4 with FC = 0x51 XPK-ID = TrK-ID (px_MCX_TrK_ID)		
UserSigningKeySSK		The ECCSI private Key, "SSK". This is an OCTET STRING encoding of an integer; the PVT is generated using the UID as contained in the UserID of the KSM message	RFC 6507 [98]	
EncryptionAlgorithm	"AES256"	Encryption algorithm to use		
KeyInfo				
KeyName	base64 encoded TrK-ID (px_MCX_TrK_ID)			
CipherData				
CipherValue	encrypted SSK	The encryption key is derived from the TrK (px_MCX_TrK) according to TS 33.180 [94] Annex F.1.4 with FC = 0x51 XPK-ID = TrK-ID (px_MCX_TrK_ID)		

ETSI

Derivation Path: TS 33.180 [94], clause D.3.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Signed KmsResponse				
UserPubTokenPVT		The ECCSI public validation token, "PVT". This is an OCTET STRING encoding of an elliptic curve point; the PVT is generated using the UID as contained in the UserID of the KSM message	RFC 6507 [98]	
EncryptionAlgorithm	"AES256"	Encryption algorithm to use		
KeyInfo				
KeyName	base64 encoded TrK-ID (px_MCX_TrK_ID)			
CipherData				
CipherValue	Encrypted PVT	The encryption key is derived from the TrK (px_MCX_TrK) according to TS 33.180 [94] Annex F.1.4 with FC = 0x51 XPK-ID = TrK-ID (px_MCX_TrK_ID)		
Signature				
SignedInfo				
CanonicalizationAlgorithm	"xml-c14n"	XML Signature processing		
SignatureAlgorithm	"HMAC-SHA-256"	Hashing algorithm to be applied to sign the SignedInfo with the key given in the KeyInfo		
Reference				
URI	"#kmsResponse"	referring to the data object for which the hash is generatet (KMS response element in this case)		
DigestAlgorithm	"SHA-256"	Hashing algorithm to be applied to sign the data object		
DigestValue	Hash signing the data object (referred to by the URI)			
SignatureValue	Hash signing the SignedInfo	The signing key is derived from the InK (px_MCX_InK) according to TS 33.180 [94] Annex F.1.4 with FC = 0x52 XPK-ID = InK-ID (px_MCX_InK_ID)		
KeyInfo				
KeyName	base64 encoded InK-ID (px_MCX_InK_ID)			

5.5.4.10.9 Signed KMS Request

Table 5.5.4.10.9-1: Signed KMS Request

Derivation Path: TS 33.180 [94], clause D.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
SignedKmsRequest				
KmsRequest				
Id attribute	any value	value as used as reference in the signature		
Version attribute	"1.1.0"			
UserUri	px_MCPTT_ID_User_A	The user's MCPTT ID		MCPTT
	px_MCVideo_ID_User_A	The user's MCVideo ID		MCVIDEO
	px_MCData_ID_User_A	The user's MCData ID		MCDATA
KmsUri	tsc_MCX_KMS_Hostname	The URI of the KMS to which the request is sent		
Time	any value	Date/time that the request is made by the client		
ClientId	any value if present	A string representing the client		
DeviceId	any value if present	A string representing the device		
ClientReqUrl	URI with same path as in the request URI of the HTTP request	The resource URI to which the HTTP POST request is sent		
KrrList	not present			
ClientError	not present			
Signature				
SignedInfo				
CanonicalizationAlgorithm	"http://www.w3.org/TR/2001/REC-xml-c14n-20010315"	XML Signature processing		
SignatureAlgorithm	"http://www.w3.org/2001/04/xmldsig-more#hmac-sha256"	Hashing algorithm to be applied to sign the SignedInfo with the key given in the KeyInfo		
Reference				
URI	URI referring to the Id of the request	same value as the Id attribute of the request with leading "#"		
DigestAlgorithm	"http://www.w3.org/2001/04/xmlenc#sha256"	Hashing algorithm applied to sign the data object		
DigestValue	Hash signing the data object (referred to by the URI)			
SignatureValue	Hash signing the SignedInfo; shall be validated by the SS	The signing key is derived from the InK (px_MCX_InK) according to TS 33.180 [94] Annex F.1.4 with FC = 0x52 XPK-ID = InK-ID (px_MCX_InK_ID)		
KeyInfo				
KeyName	base64 encoded InK-ID (px_MCX_InK_ID)			

5.5.5 Default MCPTT call control Off-network messages and other information elements

5.5.5.1 GROUP CALL PROBE

Table 5.5.5.1-1: GROUP CALL PROBE

Derivation Path: TS 24.379 [9] Table 15.1.2.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
MCPTT group ID	px_MCPTT_Group_A_ID		

5.5.5.2 GROUP CALL ANNOUNCEMENT

5.5.5.2.1 GROUP CALL ANNOUNCEMENT from the UE

Table 5.5.5.2.1-1: GROUP CALL ANNOUNCEMENT from the UE

Information Element	Value/remark	Comment	Condition
Derivation Path: TS 24.379 [9] Table 15.1.3.1-1			
Call identifier	a random number uniformly distributed between (0, 65535) generated at the beginning of a call establishment		
Call type	"00000001"	Basic Group Call	
Refresh interval	10000	The Refresh interval contains a number denoting the minimum time interval (milliseconds) between two successive periodic announcements. NOTE: In release 13.7 of TS 24.379 [9], the refresh interval of the call is fixed to 10 seconds.	
Call start time	The Call start time value is an unsigned integer containing UTC time of the time when a call was started, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).		
Last call type change time	The Last call type change time value is an unsigned integer containing UTC time of the time when a call priority was changed, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).		
MCPTT group ID	px_MCPTT_Group_A_ID		
SDP	As described in Table 5.5.3.1.3-1		
Originating MCPTT user ID	px_MCPTT_ID_User_A	pre-set MCPTT user ID	
Last user to change call type	The ID of the last user to change contents		
Confirm mode indication	Present		
Probe response	Not Present		

5.5.5.2.2 GROUP CALL ANNOUNCEMENT from the SS

Table 5.5.5.2.2-1: GROUP CALL ANNOUNCEMENT from the SS

Derivation Path: TS 24.379 [9] Table 15.1.3.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65535) generated at the beginning of a call establishment		
Call type	"00000001"	Basic Group Call	
Refresh interval	10000	The Refresh interval contains a number denoting the minimum time interval (milliseconds) between two successive periodic announcements. NOTE: In release 13.7 of TS 24.379 [9], the refresh interval of the call is fixed to 10 seconds.	
Call start time	The Call start time value is an unsigned integer containing UTC time of the time when a call was started, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).		
Last call type change time	The Last call type change time value is an unsigned integer containing UTC time of the time when a call priority was changed, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).		
MCPTT group ID	px_MCPTT_Group_A_ID		
SDP	As described in Table 5.5.3.1.4-1		
Originating MCPTT user ID	px_MCPTT_ID_User_B	pre-set MCPTT user ID	
Last user to change call type	The ID of the last user to change contents		
Confirm mode indication	Present		
Probe response	Not Present		

5.5.5.3 GROUP CALL ACCEPT

5.5.5.3.1 GROUP CALL ACCEPT from the UE

Table 5.5.5.3.1-1: GROUP CALL ACCEPT from the UE

Derivation Path: TS 24.379 [9] Table 15.1.4.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Call type	"00000001"	Basic Group Call	
MCPTT group ID	px_MCPTT_Group_A_ID		
Sending MCPTT user ID	px_MCPTT_ID_User_A		

5.5.5.3.2 GROUP CALL ACCEPT from the SS

Table 5.5.5.3.2-1: GROUP CALL ACCEPT from the SS

Derivation Path: TS 24.379 [9] Table 15.1.4.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Call type	"00000001"	Basic Group Call	
MCPTT group ID	px_MCPTT_Group_A_ID		
Sending MCPTT user ID	px_MCPTT_ID_User_B		

5.5.5.4 GROUP CALL EMERGENCY END

5.5.5.4.1 GROUP CALL EMERGENCY END from the UE

Table 5.5.5.4.1-1: GROUP CALL EMERGENCY END from the UE

Derivation Path: TS 24.379 [9] Table 15.1.15.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Last call type change time	The Last call type change time value is an unsigned integer containing UTC time of the time when a call priority was changed, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).		
Last user to change call type	The ID of the last user to change contents		
MCPTT group ID	px_MCPTT_Group_A_ID		
Originating MCPTT user ID	px_MCPTT_ID_User_A		

5.5.5.4.2 GROUP CALL EMERGENCY END from the SS

Table 5.5.5.4.2-1: GROUP CALL EMERGENCY END from the SS

Derivation Path: TS 24.379 [9] Table 15.1.15.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Last call type change time	The Last call type change time value is an unsigned integer containing UTC time of the time when a call priority was changed, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).		
Last user to change call type	The ID of the last user to change contents		
MCPTT group ID	px_MCPTT_Group_A_ID		
Originating MCPTT user ID	px_MCPTT_ID_User_B		

5.5.5.5 GROUP CALL IMMINENT PERIL END

5.5.5.5.1 GROUP CALL IMMINENT PERIL END from the UE

Table 5.5.5.5.1-1: GROUP CALL IMMINENT PERIL END from the UE

Derivation Path: TS 24.379 [9] Table 15.1.14.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Last call type change time	The Last call type change time value is an unsigned integer containing UTC time of the time when a call priority was changed, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).		
Last user to change call type	The ID of the last user to change contents		
MCPTT group ID	px_MCPTT_Group_A_ID		
Originating MCPTT user ID	px_MCPTT_ID_User_A		

5.5.5.5.2 GROUP CALL IMMINENT PERIL END from the SS

Table 5.5.5.5.2-1: GROUP CALL IMMINENT PERIL END from the SS

Derivation Path: TS 24.379 [9] Table 15.1.14.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Last call type change time	The Last call type change time value is an unsigned integer containing UTC time of the time when a call priority was changed, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).		
Last user to change call type	The ID of the last user to change contents		
MCPTT group ID	px_MCPTT_Group_A_ID		
Originating MCPTT user ID	px_MCPTT_ID_User_B		

5.5.5.6   GROUP CALL BROADCAST

5.5.5.6.1   GROUP CALL BROADCAST from the UE

Table 5.5.5.6.1-1: GROUP CALL BROADCAST from the UE

Derivation Path: TS 24.379 [9] Table 15.1.20.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Call type	"00000010"	Broadcast Group Call	
Originating MCPTT user ID	px_MCPTT_ID_User_A		
MCPTT group ID	px_MCPTT_Group_A_ID		
SDP	As described in Table 5.5.3.1.3-1		

5.5.5.6.2   GROUP CALL BROADCAST from the SS

Table 5.5.5.6.2-1: GROUP CALL BROADCAST from the SS

Derivation Path: TS 24.379 [9] Table 15.1.20.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Call type	"00000010"	Broadcast Group Call	
Originating MCPTT user ID	px_MCPTT_ID_User_B		
MCPTT group ID	px_MCPTT_Group_A_ID		
SDP	As described in Table 5.5.3.1.4-1		

5.5.5.7   GROUP CALL BROADCAST END

5.5.5.7.1   GROUP CALL BROADCAST END from the UE

Table 5.5.5.7.1-1: GROUP CALL BROADCAST END from the UE

Derivation Path: TS 24.379 [9] Table 15.1.21.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
MCPTT group ID	px_MCPTT_Group_A_ID		
SDP	As described in Table 5.5.3.1.3-1		

5.5.5.7.2 GROUP CALL BROADCAST END from the SS

Table 5.5.5.7.2-1: GROUP CALL BROADCAST END from the SS

Derivation Path: TS 24.379 [9] Table 15.1.21.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
MCPTT group ID	px_MCPTT_Group_A_ID		
SDP	As described in Table 5.5.3.1.4-1		

5.5.5.8 PRIVATE CALL SETUP REQUEST

5.5.5.8.1 PRIVATE CALL SETUP REQUEST from the UE

Table 5.5.5.8.1-1: PRIVATE CALL SETUP REQUEST from the UE

Derivation Path: 24.379 [9], Table 15.1.5.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Commencement mode	"00000000"	Automatic Commencement Mode	
Call type	"00000101"	Private Call	
MCPTT user ID of the caller	px_MCPTT_ID_User_A		
MCPTT user ID of the callee	px_MCPTT_ID_User_B		
SDP offer	As described in Table 5.5.3.1.3-1		
User location	Not Present		

5.5.5.8.2 PRIVATE CALL SETUP REQUEST from the SS

Table 5.5.5.8.2-1: PRIVATE CALL SETUP REQUEST from the SS

Derivation Path: 24.379 [9], Table 15.1.5.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Commencement mode	"00000000"	Automatic Commencement Mode	
Call type	"00000101"	Private Call	
MCPTT user ID of the caller	px_MCPTT_ID_User_B		
MCPTT user ID of the callee	px_MCPTT_ID_User_A		
SDP offer	As described in Table 5.5.3.1.4-1		
User location	Not Present		

5.5.5.9 PRIVATE CALL RINGING

Table 5.5.5.9-1: PRIVATE CALL RINGING

Derivation Path: 24.379 [9], Table 15.1.6.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	Same as the one in PRIVATE CALL SETUP REQUEST		
MCPTT user ID of the caller	Same as the one in PRIVATE CALL SETUP REQUEST		
MCPTT user ID of the callee	Same as the one in PRIVATE CALL SETUP REQUEST		

5.5.5.10 PRIVATE CALL ACCEPT

Table 5.5.5.10-1: PRIVATE CALL ACCEPT

Derivation Path: 24.379 [9], Table 15.1.7.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	Same as the one in PRIVATE CALL SETUP REQUEST		
MCPTT user ID of the caller	Same as the one in PRIVATE CALL SETUP REQUEST		
MCPTT user ID of the callee	Same as the one in PRIVATE CALL SETUP REQUEST		
SDP answer	Same as the one in PRIVATE CALL SETUP REQUEST		

5.5.5.11 PRIVATE CALL REJECT

5.5.5.11.1 PRIVATE CALL REJECT from the UE

Table 5.5.5.11.1-1: PRIVATE CALL REJECT from the UE

Derivation Path: 24.379 [9], Table 15.1.8.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	Same as the one in PRIVATE CALL SETUP REQUEST		
Reason	Any allowed value		
MCPTT user ID of the caller	Same as the one in PRIVATE CALL SETUP REQUEST		
MCPTT user ID of the callee	Same as the one in PRIVATE CALL SETUP REQUEST		
SDP answer	As described in Table 5.5.3.1.3-1		

5.5.5.11.2 PRIVATE CALL REJECT from the SS

Table 5.5.5.11.2-1: PRIVATE CALL REJECT from the SS

Derivation Path: 24.379 [9], Table 15.1.8.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	Same as the one in PRIVATE CALL SETUP REQUEST		
Reason	"00000000"	Reason = REJECT	
MCPTT user ID of the caller	Same as the one in PRIVATE CALL SETUP REQUEST		
MCPTT user ID of the callee	Same as the one in PRIVATE CALL SETUP REQUEST		
SDP answer	As described in Table 5.5.3.1.4-1		

5.5.5.12 PRIVATE CALL RELEASE

Table 5.5.5.12-1: PRIVATE CALL RELEASE

Derivation Path: 24.379 [9], Table 15.1.9.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	Same as the one in PRIVATE CALL SETUP REQUEST		
MCPTT user ID of the caller	Same as the one in PRIVATE CALL SETUP REQUEST		
MCPTT user ID of the callee	Same as the one in PRIVATE CALL SETUP REQUEST		

5.5.5.13 PRIVATE CALL RELEASE ACK

Table 5.5.5.13-1: PRIVATE CALL RELEASE ACK

Derivation Path: 24.379 [9], Table 15.1.10.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	Same as the one in PRIVATE CALL SETUP REQUEST		
MCPTT user ID of the caller	Same as the one in PRIVATE CALL SETUP REQUEST		
MCPTT user ID of the callee	Same as the one in PRIVATE CALL SETUP REQUEST		

5.5.5.14 PRIVATE CALL ACCEPT ACK

Table 5.5.5.14-1: PRIVATE CALL ACCEPT ACK

Derivation Path: 24.379 [9], Table 15.1.11.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	Same as the one in PRIVATE CALL SETUP REQUEST		
MCPTT user ID of the caller	Same as the one in PRIVATE CALL SETUP REQUEST		
MCPTT user ID of the callee	Same as the one in PRIVATE CALL SETUP REQUEST		

5.5.5.15 PRIVATE CALL EMERGENCY CANCEL

5.5.5.15.1 PRIVATE CALL EMERGENCY CANCEL from the UE

Table 5.5.5.15.1-1: PRIVATE CALL EMERGENCY CANCEL from the UE

Derivation Path: 24.379 [9], Table 15.1.12.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
MCPTT user ID of the caller	px_MCPTT_ID_User_A		
MCPTT user ID of the callee	px_MCPTT_ID_User_B		

5.5.5.15.2 PRIVATE CALL EMERGENCY CANCEL from the SS

Table 5.5.5.15.2-1: PRIVATE CALL EMERGENCY CANCEL from the SS

Derivation Path: 24.379 [9], Table 15.1.12.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
MCPTT user ID of the caller	px_MCPTT_ID_User_B		
MCPTT user ID of the callee	px_MCPTT_ID_User_A		

5.5.5.16 PRIVATE CALL EMERGENCY CANCEL ACK

5.5.5.16.1 PRIVATE CALL EMERGENCY CANCEL ACK from the UE

Table 5.5.5.16.1-1: PRIVATE CALL EMERGENCY CANCEL ACK from the UE

Derivation Path: 24.379 [9], Table 15.1.13.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	Same as the one in PRIVATE CALL EMERGENCY CANCEL		
MCPTT user ID of the caller	px_MCPTT_ID_User_A		
MCPTT user ID of the callee	px_MCPTT_ID_User_B		

5.5.5.16.2 PRIVATE CALL EMERGENCY CANCEL ACK from the SS

Table 5.5.5.16.2-1: PRIVATE CALL EMERGENCY CANCEL ACK from the SS

Derivation Path: 24.379 [9], Table 15.1.13.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	Same as the one in PRIVATE CALL EMERGENCY CANCEL		
MCPTT user ID of the caller	px_MCPTT_ID_User_B		
MCPTT user ID of the callee	px_MCPTT_ID_User_A		

5.5.5.17 GROUP EMERGENCY ALERT

5.5.5.17.1 GROUP EMERGENCY ALERT from the UE

Table 5.5.5.17.1-1: GROUP EMERGENCY ALERT from the UE

Derivation Path: TS 24.379 [9] Table 15.1.16.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
MCPTT group ID	px_MCPTT_Group_A_ID		
Originating MCPTT user ID	px_MCPTT_ID_User_A		
Organization name	Any allowed value		
User location	Not Present		

5.5.5.17.2 GROUP EMERGENCY ALERT from the SS

Table 5.5.5.17.2-1: GROUP EMERGENCY ALERT from the SS

Derivation Path: TS 24.379 [9] Table 15.1.16.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
MCPTT group ID	px_MCPTT_Group_A_ID		
Originating MCPTT user ID	px_MCPTT_ID_User_B		
Organization name	px_MCPTT_Group_A_Owner_Organization		
User location	Not Present		

5.5.5.18 GROUP EMERGENCY ALERT ACK

5.5.5.18.1 GROUP EMERGENC ALERT ACK from the UE

Table 5.5.5.18.1-1: GROUP EMERGENCY ALERT ACK from the UE

Derivation Path: TS 24.379 [9] Table 15.1.17.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
MCPTT group ID	px_MCPTT_Group_A_ID		
Originating MCPTT user ID	px_MCPTT_ID_User_B		
Sending MCPTT user ID	px_MCPTT_ID_User_A		

5.5.5.18.2 GROUP EMERGENC ALERT ACK from the SS

Table 5.5.5.18.2-1: GROUP EMERGENCY ALERT ACK from the SS

Derivation Path: TS 24.379 [9] Table 15.1.17.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
MCPTT group ID	px_MCPTT_Group_A_ID		
Originating MCPTT user ID	px_MCPTT_ID_User_A		
Sending MCPTT user ID	px_MCPTT_ID_User_B		

5.5.5.19 GROUP EMERGENCY ALERT CANCEL

5.5.5.19.1 GROUP EMERGENCY ALERT CANCEL from the UE

Table 5.5.5.19.1-1: GROUP EMERGENCY ALERT CANCEL from the UE

Derivation Path: TS 24.379 [9] Table 15.1.18.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
MCPTT group ID	px_MCPTT_Group_A_ID		
Originating MCPTT user ID	px_MCPTT_ID_User_A		
Sending MCPTT user ID	px_MCPTT_ID_User_A		

5.5.5.19.2 GROUP EMERGENCY ALERT CANCEL from the SS

Table 5.5.5.19.2-1: GROUP EMERGENCY ALERT CANCEL from the SS

Derivation Path: TS 24.379 [9] Table 15.1.18.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
MCPTT group ID	px_MCPTT_Group_A_ID		
Originating MCPTT user ID	px_MCPTT_ID_User_B		
Sending MCPTT user ID	px_MCPTT_ID_User_B		

5.5.5.20 GROUP EMERGENCY ALERT CANCEL ACK

5.5.5.20.1 GROUP EMERGENCY ALERT CANCEL ACK from the UE

Table 5.5.5.20.1-1: GROUP EMERGENCY ALERT CANCEL ACK from the UE

Derivation Path: TS 24.379 [9] Table 15.1.19.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
MCPTT group ID	px_MCPTT_Group_A_ID		
Originating MCPTT user ID	px_MCPTT_ID_User_B		
Sending MCPTT user ID	px_MCPTT_ID_User_A		

5.5.5.20.2 GROUP EMERGENCY ALERT CANCEL ACK from the SS

Table 5.5.5.20.2-1: GROUP EMERGENCY ALERT CANCEL ACK from the SS

Derivation Path: TS 24.379 [9] Table 15.1.19.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
MCPTT group ID	px_MCPTT_Group_A_ID		
Originating MCPTT user ID	px_MCPTT_ID_User_A		
Sending MCPTT user ID	px_MCPTT_ID_User_B		

5.5.6 Default MCPTT media plane control messages and other information elements

5.5.6.1 General

The media plane control protocols messages specified in the present document are based on those specified in TS 24.380 [10] which in term are based on the RTCP Application Packets (RTCP: APP), as defined in IETF RFC 3550 [76].

Depending on the TC scenario, the same MCPTT media plane control message can be sent by the SS or by the UE. Throughout the default content specified in below a particular value has been chosen to satisfy one or the other scenario. It is expected that when a message is used in a TC in a particular context then the relevant for the usage in the TC values will be defined in the TC.

The following conditions apply throughout clause 5.5.6:

Table 5.5.6.1-1: Conditions

Condition	Explanation
FA	IE for when an active Functional Alias is used
Multi-Talker	IE for when a Multi Talker call is active
ACK	Message requests a Floor Ack
NOTE: For further conditions see table 5.5.1-1	

For MCPTT media plane control different SSRCs (Synchronization SouRCes) need to be distinguished. Table 5.5.6.1-2 specifies the SSRCs as used in the default MCPTT media plane control messages for the case that there is no multiplexing of media plane control channels.

NOTE 1: Multiplexing of media plane control channels has been introduced in Rel-18 of TS 24.379 [9] and TS 24.380 [10] and is out of scope for the current release of this document.

**Table 5.5.6.1-2: SSRCs in MCPTT media plane control messages
(No multiplexing of media plane control channels)**

SSRC (NOTE 1)	Description	Value

Audio SSRC of the client	SSRC to be used by the client (Client A) in the audio stream	Arbitrarily selected by the SS and assigned to the client when the floor is granted (NOTE 2, 3)
Audio SSRC of a remote client	SSRC of the audio stream of a remote client (Client B)	Arbitrarily selected by the SS (NOTE 2)
RTCP SSRC of the client	SSRC used by the client (Client A) in the RTCP header of the MCPTT media plane control messages sent to the SS	The client may use any value, value is not checked by the SS (NOTE 4).
RTCP SSRC of the SS	SSRC used by the SS in the RTCP header of the MCPTT media plane control messages sent to the client	Arbitrarily selected by the SS (NOTE 4)
NOTE 1: The terms "Audio SSRC" and "RTCP SSRC" are as introduced in Rel-18 of TS 24.380 [10].		
NOTE 2: Different SSRC values shall be selected by the SS for audio streams from different clients ⇒ There is no need to consider collision detection and resolution according to IETF RFC 3550 [76].		
NOTE 3: Even though the client may use the a=ssrc SDP attribute to indicate which SSRC it would like to use in the audio stream, according to TS 24.380 [10] the client has to use the value provided by the server in the "mc_ssrc" fmtp attribute of the SDP answer or in the "SSRC of queued floor participant" field of the Floor Granted message.		
NOTE 4: As TS 24.380 [10] clarifies in Rel-18 that "the SSRC of the RTCP header is used to enable multiplexing of media plane control channels" it is assumed that RTCP SSRC values have no meaning in case of no multiplexing.		

5.5.6.2 Floor Request

Table 5.5.6.2-1: Floor Request

Derivation Path: 24.380 [10], Table 8.2.4-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	00000	Floor Request	
SSRC	RTCP SSRC of the client		
	The SSRC of the message sender		OFF-NETWORK
name	MCPT		
Floor priority	Not present or Any allowed value	If present, a value between '0' and '255' where '0' is the lowest priority If the Floor Priority field is not included in the message the default priority (='0') is used as the Floor Priority value The max floor priority that can be requested in a Floor Request message is negotiated between the MCPTT client and the controlling MCPTT function using the "mc_priority" fmtp parameter e.g. at call setup	
User ID	Not present		
User ID			OFF-NETWORK
User ID	px_MCPTT_ID_User_A	The MCPTT User ID of the floor participant requesting the floor.	
Track Info	Not present	The MCPTT call does not involve a non-controlling MCPTT function	
Floor Indicator			
Floor Indicator	10000x0000000000	Normal call: x:=1 if pc_MCPTT_FloorRequestQueueing = "true", x:=0 otherwise	
	01000x0000000000	Broadcast group call: x:=1 if pc_MCPTT_FloorRequestQueueing = "true", x:=0 otherwise	BROADCAST-CALL
	00010x0000000000	Emergency call: x:=1 if pc_MCPTT_FloorRequestQueueing = "true", x:=0 otherwise	EMERGENCY-CALL

Derivation Path: 24.380 [10], Table 8.2.4-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
	00001x0000000000	Imminent Peril call: x:=1 if pc_MCPTT_Floor RequestQueueing = "true", x:=0 otherwise	IMMPERIL-CALL
Functional Alias	Not present		
	px_MCPTT_ID_FA_A	Functional Alias = URI	FA
Location	optional		
Location Type	Any allowed value	See TS 24.380 [10] Table 8.2.3.21-3	
Location Value	Not present or Any allowed value	See TS 24.380 [10] Table 8.2.3.21-3. Not present if Location Type is set to "Not provided"	
Location			REL-15
Location Type	Any allowed value	See TS 24.380 [10] Table 8.2.3.21-3	
Location Value	Not present or Any allowed value	See TS 24.380 [10] Table 8.2.3.21-3. Not present if Location Type is set to "Not provided"	

Condition	Explanation
REL-15	In effect when PICS "PICS FFS" is in effect

5.5.6.3   Floor Granted

Table 5.5.6.3-1: Floor Granted

Derivation Path: 24.380 [10], Table 8.2.5-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	00001	Floor Granted with acknowledgment not required	
	10001	Floor Granted with acknowledgment required	ACK
SSRC	RTCP SSRC of the SS	The SSRC of the floor control server	
	The SSRC of the message sender	The SSRC of the floor arbitrator	OFF-NETWORK
name	MCPT		
Duration			
Duration	"00000000 10000000"	128 sec (an arbitrary value)	
SSRC of granted floor participant	Audio SSRC of the client		

Derivation Path: 24.380 [10], Table 8.2.5-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor priority	Not present	If the Floor Priority field is not included in the message the default priority (='0') is used as the Floor Priority value	
User ID	Not present		
User ID			OFF-NETWORK
User ID	px_MCPTT_ID_User_A	The MCPTT User ID of the floor participant granted the floor.	
Queue Size	Not present		
Queue Size	"0"	the number of queued MCPTT clients in the MCPTT call	OFF-NETWORK
SSRC of queued floor participant	Not present		
Queued User ID	Not present		
Queue Info	Not present		
Track Info	Not present	The MCPTT call does not involve a non-controlling MCPTT function	
Floor Indicator			
Floor Indicator	1000010000000000	Normal call, queueing supported	
	0100010000000000	Broadcast group call, queueing supported	BROADCAST-CALL
	0001010000000000	Emergency call, queueing supported	EMERGENCY-CALL
	0000110000000000	Imminent peril call, queueing supported	IMMPERIL-CALL

5.5.6.4 Floor Deny

Table 5.5.6.4-1: Floor Deny

Information Element	Value/remark	Comment	Condition
Derivation Path: 24.380 [10], Table 8.2.6-1.			
RTCP header			
Subtype	00011	Floor Deny with acknowledgment not required	
	10011	Floor Deny with acknowledgment required	ACK
SSRC	RTCP SSRC of the SS	The SSRC of the floor control server	
	The SSRC of the message sender	The SSRC of the floor arbitrator	OFF-NETWORK
name	MCPT		
Reject Cause			
Reject Cause	"1"	Cause #1 - Another MCPTT client has permission	
Reject Phrase	"Another MCPTT client has permission"	An additional text string explaining the reason for rejecting the floor request.	
User ID	Not present		
User ID			OFF-NETWORK
User ID	px_MCPTT_ID_User_A	The MCPTT User ID of the floor participant being denied floor request.	
Track Info	Not present	The MCPTT call does not involve a non-controlling MCPTT function	
Floor Indicator			
Floor Indicator	1000010000000000	Normal call, queueing supported	
	0100010000000000	Broadcast group call, queueing supported	BROADCAST-CALL
	0001010000000000	Emergency call, queueing supported	EMERGENCY-CALL
	000110000000000	Imminent peril call, queueing supported	IMMPERIL-CALL

5.5.6.5 Floor Release

Table 5.5.6.5-1: Floor Release

Information Element	Value/remark	Comment	Condition
Derivation Path: 24.380 [10], Table 8.2.7-1.			
RTCP header			
Subtype	x0100	Floor Release with x=0,1 depending on the UE implementation; x=0: Acknowledgment is not required x=1: Acknowledgment is required	
SSRC	RTCP SSRC of the client		
	The SSRC of the message sender		OFF-NETWORK
name	MCPT		
User ID	Not present		
User ID			OFF-NETWORK
User ID	px_MCPTT_ID_User_A	The MCPTT User ID of the floor participant releasing the floor.	
Track Info	Not present	The MCPTT call does not involve a non-controlling MCPTT function	
Floor Indicator			
Floor Indicator	10000x0000000000	Normal call x:=1 if pc_MCPTT_FloorRequestQueueing = "true", x:=0 otherwise	
	01000x0000000000	Broadcast group call: x:=1 if pc_MCPTT_FloorRequestQueueing = "true", x:=0 otherwise	BROADCAST-CALL
	00010x0000000000	Emergency call: x:=1 if pc_MCPTT_FloorRequestQueueing = "true", x:=0 otherwise	EMERGENCY-CALL
	00001x0000000000	Imminent Peril call: x:=1 if pc_MCPTT_FloorRequestQueueing = "true", x:=0 otherwise	IMMPERIL-CALL

5.5.6.6 Floor Idle

Table 5.5.6.6-1: Floor Idle

Information Element	Value/remark	Comment	Condition
Derivation Path: 24.380 [10], Table 8.2.8-1.			
RTCP header			
Subtype	00101	Floor Idle with acknowledgment not required	
	10101	Floor Idle with acknowledgment required	ACK
SSRC	RTCP SSRC of the SS	The SSRC of the floor control server	
	The SSRC of the message sender	The SSRC of the floor arbitrator	OFF-NETWORK
name	MCPT		
Message Sequence Number			
Message Sequence Number	The value sent in the previous Floor Idle message, if any, increased with 1	Any value between '0' and '65535' When the '65535' value is reached, the <Message Sequence Number> value starts from '0' again	
Track Info	Not present	The MCPTT call does not involve a non-controlling MCPTT function	
Floor Indicator			
Floor Indicator	1000010000000000	Normal call, queueing supported	
	0100010000000000	Broadcast group call, queueing supported	BROADCAST-CALL
	0001010000000000	Emergency call, queueing supported	EMERGENCY-CALL
	000110000000000	Imminent peril call, queueing supported	IMMPERIL-CALL

5.5.6.7 Floor Taken

Table 5.5.6.7-1: Floor Taken

Information Element	Value/remark	Comment	Condition
Derivation Path: 24.380 [10], Table 8.2.9-1.			
RTCP header			
Subtype	00010	Floor Taken with acknowledgment not required	
	10010	Floor Taken with acknowledgment required	ACK
SSRC	RTCP SSRC of the SS	The SSRC of the floor control server	
	The SSRC of the message sender	The SSRC of the floor arbitrator	OFF-NETWORK
name	MCPT		
User ID	Not present		
User ID			OFF-NETWORK
User ID	px_MCPTT_ID_User_A	The MCPTT user ID of the floor participant sending the Floor Taken message	
Granted Party's Identity			
Granted Party's Identity	px_MCPTT_ID_User_B	The MCPTT User ID of the floor participant being granted the floor.	
Granted Party's Identity	Not Present		Multi-Talker
Permission to Request the Floor			
Permission to Request the Floor	"1"	The receiver is permitted to request floor	
Message Sequence Number			
Message Sequence Number	The value sent in the previous Floor Taken message, if any, increased with 1	Any value between '0' and '65535' When the '65535' value is reached, the <Message Sequence Number> value starts from '0' again	
Track Info	Not present	The MCPTT call does not involve a non-controlling MCPTT function	
Floor Indicator			
Floor Indicator	1000010000000000	Normal call, queueing supported	
	0100010000000000	Broadcast group call, queueing supported	BROADCAST-CALL
	0001010000000000	Emergency call, queueing supported	EMERGENCY-CALL
	000110000000000	Imminent peril call, queueing supported	IMMPERIL-CALL
Floor Indicator			Multi-Talker
Floor Indicator	1000010010000000	Normal call, queueing supported, multi-talker	

Derivation Path: 24.380 [10], Table 8.2.9-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
	0100010000000000	Broadcast group call, queueing supported	BROADCAST-CALL
	0001010010000000	Emergency call, queueing supported, multi-talker	EMERGENCY-CALL
	0001100010000000	Imminent peril call, queueing supported, multi-talker	IMMPERIL-CALL
SSRC of granted floor participant	Audio SSRC of a remote client (Client B)	The SSRC of the granted floor participant.	
SSRC of granted floor participant	Not present		Multi-Talker
Functional Alias	Not present		
	px_MCPTT_ID_FA_B	Functional Alias = URI	FA AND NOT Multi-Talker
List of Granted Users	Not present		
List of Granted Users			Multi-Talker
No of users	'10'		
User ID	px_MCPTT_ID_User_A		
User ID	px_MCPTT_ID_User_B		
List of SSRCs of granted floor participants	Not present		
List of SSRCs of granted floor participants			Multi-Talker
Number of SSRCs	'10'		
SSRC	Audio SSRC of the client (Client A)		
SSRC	Audio SSRC of a remote client (Client B)		
List of Functional Aliases	Not present		
List of Functional Aliases			FA AND Multi-Talker
No of FAs	'10'		
Functional Alias	px_MCPTT_ID_FA_A		
Functional Alias	px_MCPTT_ID_FA_B		
Location			NOT Multi-Talker
Location Type	'00000000'	Not provided See TS 24.380 [10] Table 8.2.3.21-3	
Location Value	Not present	See TS 24.380 [10] Table 8.2.3.21-3. Not present if Location Type is set to "Not provided"	
Location	Not present		Multi-Talker
List of Locations	Not present		NOT Multi-Talker
List of Locations		The location information shall be maintained in the same order as the users in the List of Granted Users to allow location information to be matched to the correct user.	Multi-Talker
Number of Locations	'10'		

Derivation Path: 24.380 [10], Table 8.2.9-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Location Type	'00000000'	Not provided See TS 24.380 [10] Table 8.2.3.21-3	
Location Value	Not present	See TS 24.380 [10] Table 8.2.3.21-3. Not present if Location Type is set to "Not provided"	
Location Type	'00000000'	Not provided See TS 24.380 [10] Table 8.2.3.21-3	
Location Value	Not present	See TS 24.380 [10] Table 8.2.3.21-3. Not present if Location Type is set to "Not provided"	

5.5.6.8 Floor Revoke

Table 5.5.6.8-1: Floor Revoke

Information Element	Value/remark	Comment	Condition
Derivation Path: 24.380 [10], Table 8.2.10.1-1.			
RTCP header			
Subtype	00110	Floor Revoke	
SSRC	RTCP SSRC of the SS	The SSRC of the floor control server	
	The SSRC of the message sender	The SSRC of the floor arbitrator	OFF-NETWORK
name	MCPT		
Reject Cause			
Reject Cause	"4"	Cause#4 - Media Burst pre-empted	
Reject Phrase	"Media Burst pre-empted"	a text string encoded the text string in the SDES item CNAME as specified in IETF RFC 3550 [76], clause 6.5.1.	
Track Info	Not present	The MCPTT call does not involve a non-controlling MCPTT function	
Floor Indicator			
Floor Indicator	1000010000000000	Normal call, queueing supported	
	0100010000000000	Broadcast group call, queueing supported	BROADCAST-CALL
	0001010000000000	Emergency call, queueing supported	EMERGENCY-CALL
	000110000000000	Imminent peril call, queueing supported	IMMPERIL-CALL

5.5.6.9 Floor Queue Position Request

Table 5.5.6.9-1: Floor Queue Position Request

Information Element	Value/remark	Comment	Condition
Derivation Path: 24.380 [10], Table 8.2.11-1.			
RTCP header			
Subtype	01000	Floor Queue Position Request	
SSRC	RTCP SSRC of the client		
	The SSRC of the message sender		OFF-NETWORK
name	MCPT		
User ID	Not present		
User ID			OFF-NETWORK
User ID	px_MCPTT_ID_User_A	The MCPTT ID of the floor participant requesting the information.	
Track Info	Not present	The MCPTT call does not involve a non-controlling MCPTT function	

5.5.6.10 Floor Queue Position Info

Table 5.5.6.10-1: Floor Queue Position Info

Information Element	Value/remark	Comment	Condition
Derivation Path: 24.380 [10], Table 8.2.12-1.			
RTCP header			
Subtype	01001	Floor Queue Position Info with acknowledgment not required	
	11001	Floor Queue Position Info with acknowledgment required	ACK
SSRC	RTCP SSRC of the SS	The SSRC of the floor control server	
	The SSRC of the message sender	The SSRC of the floor arbitrator	OFF-NETWORK
name	MCPT		
User ID	Not present		
User ID			OFF-NETWORK
User ID	px_MCPTT_ID_User_B	the MCPTT ID of the floor participant sending the Floor Queue Position Info message	
SSRC of queued floor participant	Not present		
	The SSRC of the message recepient	The SSRC field carries the SSRC of the queued floor participant	OFF-NETWORK
Queued User ID	Not present		
Queued User ID			OFF-NETWORK
Queued User ID	px_MCPTT_ID_User_A	the MCPTT ID of the queued floor participant	
Queue Info			
Queue Position Info	"1"		
Queue Priority Level	"0"		
Track Info	Not present	The MCPTT call does not involve a non-controlling MCPTT function	
Floor Indicator			
Floor Indicator	1000010000000000	Normal call, queueing supported	
	0100010000000000	Broadcast group call, queueing supported	BROADCAST-CALL
	0001010000000000	Emergency call, queueing supported	EMERGENCY-CALL
	000110000000000	Imminent peril call, queueing supported	IMMPERIL-CALL

5.5.6.11 Floor Ack

Table 5.5.6.11-1: Floor Ack

Information Element	Value/remark	Comment	Condition
Derivation Path: 24.380 [10], Table 8.2.13-1.			
RTCP header			
Subtype	01010	Floor Ack	
SSRC	RTCP SSRC of the SS	The SSRC of the floor control server for on-network and floor arbitrator for off-network.	DOWNLINK
	RTCP SSRC of the client		UPLINK
name	MCPT		
Source			
Source	"2"	The controlling MCPTT function is the sender of the message see TS 24.380[10] cl 4.2.1 and cl. 8.2.3.12	DOWNLINK
Source	"0"	The Floor participant is the sender of the message see TS 24.380[10] cl 6.2 and cl. 8.2.3.12	UPLINK
Message Type			
Message Type	'0000xxxx' with 'xxxx' being the lower four bits of the subtype of the message to be acknowledged	Message Type of the Floor Control message which requested the acknowledgment	
Track Info	Not present	The MCPTT call does not involve a non-controlling MCPTT function	
Location	Not present	Rel-16	DOWNLINK
Location	If present	Rel-16	UPLINK
Location Type	'00000000'	Not provided See TS 24.380 [10] Table 8.2.3.21-3	
Location Value	Not present	See TS 24.380 [10] Table 8.2.3.21-3. Not present if Location Type is set to "Not provided"	

Condition	Explanation
UPLINK	The message is sent from the UE
DOWNLINK	The message is sent from the SS
For further conditions see table 5.5.6.1-1	

5.5.6.11A   Floor Release Multi Talker

Table 5.5.6.11A-1: Floor Release Multi Talker

Information Element	Value/remark	Comment	Condition
Derivation Path: 24.380 [10], Table 8.2.14-1.			
RTCP header			
Subtype	01111	Floor Release Multi Talker	
SSRC	RTCP SSRC of the SS	The SSRC of the floor participant sending the message.	
	The SSRC of the message sender		OFF-NETWORK
name	MCPT		
User ID			
User ID	px_MCPTT_ID_User_B	The MCPTT User ID of the floor participant releasing the floor.	
Floor Indicator			
Floor Indicator	1000010010000000	Normal call, queueing, multi-talker	
	0100010000000000	Broadcast group call, queueing supported	BROADCAST-CALL
	0001010010000000	Emergency call, queueing supported, multi-talker	EMERGENCY-CALL
	0001100010000000	Imminent peril call, queueing supported, multi-talker	IMMPERIL-CALL

5.5.6.12 Connect

Table 5.5.6.12-1: Connect

Information Element	Value/remark	Comment	Condition
Derivation Path: 24.380 [10], Table 8.3.4-1.			
RTCP header			
Subtype	00000	Connect with acknowledgment required	
	10000	Connect with acknowledgment required	ACK
SSRC	RTCP SSRC of the SS		
name	MCPC		
MCPTT Session Identity field			
Session Type	"00000000"	No session type	
	"00000001"	private	PRIVATE-CALL
	"00000011"	prearranged	GROUP-CALL
	"00000100"	chat	CHAT-GROUP-CALL
MCPTT Session Identity	tsc_MCX_SessionID_B	SIP URI, which identifies the MCPTT session between the MCPTT client and the controlling MCPTT function	
MCPTT Group Identity field	Not Present		PRIVATE-CALL
MCPTT Group Identity field			GROUP-CALL
MCPTT Group Identity	px_MCPTT_Group_A_ID	a URI, which identifies the MCPTT group	
Media Streams			
Media Stream field	"1"	8 bit parameter giving the number of the" m=audio" m-line negotiated in the pre-established session	
Control Channel	"2"	8 bit parameter giving the number of the "m=application" m-line negotiated in the pre-established session	
	"0"	no floor control	WITHOUT_FLOORCONTROL
Warning Text field	Not Present		
Answer State field			
Answer State	"1"	confirmed	
Inviting MCPTT User Identity field			
Inviting MCPTT User Identity	px_MCPTT_ID_User_B	URI, which identifies the inviting MCPTT user	
PCK I_MESSAGE field	Not Present		

Condition	Explanation
WITHOUT_FLOORCONTROL	There shall be no floor control during the call (e.g. in case of private or first-to-answer call)
For further conditions see table 5.5.1-1	

5.5.6.13   Disconnect

Table 5.5.6.13-1: Disconnect

Derivation Path: 24.380 [10], Table 8.3.5-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	00001	Disconnect with acknowledgment not required	
	10001	Disconnect with acknowledgment required	ACK
SSRC	RTCP SSRC of the SS		
name	MCPC		
MCPTT Session Identity field	Same MCPTT Session Identity as used in the connect message at call establishment	TS 24.380 [10] clause 9.3.2.4.5	
Reason Cause	Not Present	Rel-17	

5.5.6.14   Acknowledge

Table 5.5.6.14-1: Acknowledge

Derivation Path: 24.380 [10], Table 8.3.6-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	00010	Acknowledge	
SSRC	RTCP SSRC of the client		
name	MCPC		
Reason Code			
Reason Code	"0"	Accepted	

5.5.6.15 Map Group To Bearer

Table 5.5.6.15-1: Map Group To Bearer

Derivation Path: 24.380 [10], Table 8.4.4-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	00000	Map Group To Bearer	
SSRC	RTCP SSRC of the SS	The SSRC of the floor control server	
name	MCMC		
MCPTT Group ID	px_MCPTT_Group_A_ID	The group ID of the call	
TMGI			
MBMS Service ID	"0F0F0F"	The selected value is randomly chosen - a 6 digit hexadecimal number between 000000 and FFFFFF (see TS 23.003 [69] clause 15.2. The coding of the MBMS Service ID is the responsibility of each administration	
MCC	The same value as for PLMN1 specified in Table 5.5.8.1-x	Mobile Country Code	
MNC	The same value as for PLMN1 specified in Table 5.5.8.1-x	Mobile Network Code	
MBMS Subchannel			
Audio m-line Number	"1"	The number of the "m=audio" m-line in the SIP MESSAGE request announcing the MBMS bearer	
Floor m-line Number	"2"	The number of the "m=application" m-line in the SIP MESSAGE request announcing the MBMS bearer. The <Floor m-line Number> value is set to "0" when the same subchannel is used for media and for floor control.	
IP version	"0"	'0' = IP version 4 '1' = IP version 6 All other values are reserved for future use	

Derivation Path: 24.380 [10], Table 8.4.4-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor control Port Number	"9"	The port to be used if the<Floor m-line Number> value is greater than '0'. If the <Floor m-line Number> value is equal to '0', the <Floor control Port Number> value is not included in the MBMS Subchannel field	
Media Port Number	"9"		
IP Address	"0.0.0.0"		

5.5.6.16   Unmap Group To Bearer

Table 5.5.6.16-1: Unmap Group To Bearer

Derivation Path: 24.380 [10], Table 8.4.5-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	00001	Unmap Group To Bearer	
SSRC	RTCP SSRC of the SS	The SSRC of the floor control server	
name	MCMC		
MCPTT Group ID	px_MCPTT_Group_A_ID	The group ID of the call	

5.5.6.17   Application Paging

Table 5.5.6.17-1: Application Paging

Derivation Path: 24.380 [10], Table 8.4.6-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	00010	Application Paging	
SSRC	RTCP SSRC of the SS	The SSRC of the participating MCPTT function.	
name	MCMC		
MCPTT Group ID	px_MCPTT_Group_A_ID	The group ID of the call	

5.5.6.18   Bearer Announcement

Table 5.5.6.18-1: Bearer Announcement

Information Element	Value/remark	Comment	Condition
Derivation Path: 24.380 [10], Table 8.4.7-1.			
RTCP header			
Subtype	00011	Bearer Announcement	
name	MCMC		
TMGI			
MBMS Service ID	"0F0F0F"	The selected value is randomly chosen - a 6 digit hexadecimal number between 000000 and FFFFFF (see TS 23.003 [69] clause 15.2. The coding of the MBMS Service ID is the responsibility of each administration	
MCC	The same value as for PLMN1 specified in Table 5.5.8.1-x	Mobile Country Code	
MNC	The same value as for PLMN1 specified in Table 5.5.8.1-x	Mobile Network Code	
Alternative TMGI	Not present		
Monitoring State	'1'	The <Monitoring State> value is a binary value where the following values are defined: '0' Monitoring is inactive '1' Monitoring is active	

5.5.7   Default MCX group management messages and other information elements

5.5.7.1   MCPTT Group Configuration

The structure of a group configuration document is specified in TS 24.481 [11] clause 7, single MCPTT group configuration parameters are defined in TS 24.483 [13] clause 6.3.

The structure of the configuration document is based on several XML schemas. To distinguish the schemas the prefixes of their corresponding name spaces are used in the 'Information Element' column as according to table 7.2.2-2 of TS 24.481 [11].

Table 5.5.7.1-1: MCPTT Group Configuration Defaults

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
list-service[1]		**Group 1**		
uri attribute	px_MCPTT_Group_A_ID	Value is a "uri" attribute specified in OMA OMA-TS-XDM_Group-V1_1	TS 24.483 [13] clause 6.2.7	
display-name	px_MCPTT_Group_A_Name	Value is a <display-name> element specified in OMA OMA-TS-XDM_Group-V1_1	TS 24.483 [13] clause 6.2.8	
list				
entry[1]		group member 1		
uri attribute	px_MCPTT_ID_User_A	Indicates an MCPTT user identity (MCPTT ID) which is a globally unique identifier within the MCPTT service that represents the MCPTT user	TS 24.483 [13] clause 6.2.11	
display-name	Not present			
mcpttgi:user-priority	"3"	Indicates the user priority of the MCPTT group member	TS 24.483 [13] clause 6.2.12	
mcpttgi:participant-type	px_MCX_User_A_ParticipantType	Participant type of the MCPTT group	TS 24.483 [13] clause 6.2.13	
mcpttgi:multi-talker-allowed	Present	Presence of the <multi-talker-allowed> element indicates that the MCPTT group member is authorized for multi-talker floor control in a MCPTT group call of the MCPTT group in on-network MCPTT procedures when the MCPTT group supports multi-talker-control. Absence of the <multi-talker-allowed> element indicates that the MCPTT group member identified by the <entry> element is not authorized for multi-talker floor control		
entry[2]		group member 2		
uri attribute	px_MCPTT_ID_User_B	Indicates an MCPTT user identity (MCPTT ID) which is a globally unique identifier within the MCPTT service that represents the MCPTT user	TS 24.483 [13] clause 6.2.11	
display-name	Not present			
mcpttgi:user-priority	"2"	Indicates the user priority of the MCPTT group member	TS 24.483 [13] clause 6.2.12	
mcpttgi:participant-type	px_MCX_User_B_ParticipantType	Participant type of the MCPTT group	TS 24.483 [13] clause 6.2.13	

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttgi:multi-talker-allowed	Present	Presence of the <multi-talker-allowed> element indicates that the MCPTT group member is authorized for multi-talker floor control in a MCPTT group call of the MCPTT group in on-network MCPTT procedures when the MCPTT group supports multi-talker-control. Absence of the <multi-talker-allowed> element indicates that the MCPTT group member identified by the <entry> element is not authorized for multi-talker floor control		
entry[3]		group member 3		
uri attribute	px_MCPTT_ID_User_C	Indicates an MCPTT user identity (MCPTT ID) which is a globally unique identifier within the MCPTT service that represents the MCPTT user	TS 24.483 [13] clause 6.2.11	
display-name	Not present			
mcpttgi:user-priority	"1"	Indicates the user priority of the MCPTT group member	TS 24.483 [13] clause 6.2.12	
mcpttgi:participant-type	px_MCX_User_C_ParticipantType	Participant type of the MCPTT group	TS 24.483 [13] clause 6.2.13	
mcpttgi:multi-talker-allowed	Present	Presence of the <multi-talker-allowed> element indicates that the MCPTT group member is authorized for multi-talker floor control in a MCPTT group call of the MCPTT group in on-network MCPTT procedures when the MCPTT group supports multi-talker-control. Absence of the <multi-talker-allowed> element indicates that the MCPTT group member identified by the <entry> element is not authorized for multi-talker floor control		
cp:ruleset				
cp:rule				
cp:id attribute	"rule1"			
cp:actions				
cp:on-network-allow-getting-member-list	"true"	Indicates that the identity is allowed to get the MCS group member list of the MCS group in on-network procedures		
cp:allow-initiate-conference	"true"			
cp:join-handling	"true"			

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
cp:allow-MCPTT-emergency-call	"true"	Indicates whether an MCPTT emergency group call is permitted on the MCPTT group	TS 24.483 [13] clause 6.2.19	
cp:allow-imminent-peril-call	"true"	Indicates whether an MCPTT imminent peril group call is permitted on the MCPTT group	TS 24.483 [13] clause 6.2.20	
cp:allow-MCPTT-emergency-alert	"true"	Indicates whether an MCPTT emergency alert is possible on the MCPTT group	TS 24.483 [13] clause 6.2.21	
cp:on-network-allow-getting-affiliation-list	"true"	Indicates that the identity is allowed to get the list of MCPTT users affiliated to the MCPTT group in on-network MCPTT procedures		
cp:on-network-allow-conference-state	"true"	indicates that the identity is allowed to subscribe to the conference event package of an MCPTT group session of the MCPTT group in on-network MCPTT procedures		
oxe:supported-services				
oxe:service			TS 24.481 [11]	
oxe:enabler	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			
oxe:group-media				
mcpttgi:mcptt-speech	Present			
mcpttgi:owner	px_MCX_Group_A_Owner_Organization	Group's owner (Mission Critical Organisation).	TS 24.483 [13] clause 6.2.15	
mcpttgi:preferred-voice-encodings				
mcpttgi:encoding-				
mcpttgi:name[1]	px_MCPTT_Group_A_preferred_VCodec	Preferred voice codec is a RTP payload. MCPTT clients shall support the AMR-WB codec.	RFC 4566 [27] TS 26.171 [66] TS 24.483 [13] clause 6.2.16	
mcpttgi:level-within-group-hierarchy	"0"	Indicates the level within a group hierarchy (only applicable for group-broadcast group).	TS 24.483 [13] clause 6.2.17	
mcpttgi:level-within-user-hierarchy	"0"	Indicates the level within user hierarchy (only applicable for user-broadcast group).	TS 24.483 [13] clause 6.2.18	
mcpttgi:protect-media	"true"	Indicates whether confidentiality and integrity of media is required on the MCPTT group	TS 24.483 [13] clause 6.2.22	
mcpttgi:protect-floor-control-signalling	"true"	Indicates whether confidentiality and integrity of floor control signalling is required on the MCPTT group	TS 24.483 [13] clause 6.2.23	

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Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttgi:off-network-ProSe-layer-2-group-id	tsc_MCX_Group_A_ProSeLayer2GroupID	Indicates the Prose layer-2 group ID	TS 23.303 [68] TS 24.483 [13] clause 6.2.27	
mcpttgi:off-network-IP-multicast-address	"0.0.0.0"	Indicates the ProSe group IP multicast address;the IP version is implicitly given by the notation of the IP address	TS 23.303 [68] TS 24.483 [13] clause 6.2.28	
mcpttgi:off-network-ProSe-relay-service-code	"123456"	Indicates the connectivity service that the ProSe UE-to-network relay provides to public safety applications	TS 23.303 [68] TS 24.483 [13] clause 6.2.29	
mcpttgi:off-network-in-progress-emergency-state-cancellation-timeout	"PT18H12M15S"	Indicates the timeout value for the cancellation of an in progress emergency for an MCPTT group call. "PT18H12M15S" corresponds to 65535 seconds what is maximum allowed value according to TS 24.483 [13]	TS 24.483 [13] clause 6.2.31	
mcpttgi:off-network-in-progress-imminent-peril-state-cancellation-timeout	"PT18H12M15S"	Indicates the timeout value for the cancellation of an in progress imminent peril for an MCPTT group call. "PT18H12M15S" corresponds to 65535 seconds what is maximum allowed value according to TS 24.483 [13]	TS 24.483 [13] clause 6.2.32	
mcpttgi:off-network-hang-timer	"PT5S"	Indicates the group call hang timer. "PT5S" corresponds to 5 seconds	TS 24.483 [13] clause 6.2.33	
mcpttgi:off-network-maximum-duration	"PT1M"	Indicates the max duration of group calls. "PT1M" corresponds to 1 minute	TS 24.483 [13] clause 6.2.34	
mcpttgi:off-network-queue-usage	"true"	Indicates if queuing is enabled or not	TS 24.483 [13] clause 6.2.34A	
mcpttgi:off-network-ProSe-signalling-PPPP	"1"	Indicates the default ProSe Per-Packet Priority (PPPP) value	TS 24.483 [13] clause 6.2.36	
mcpttgi:off-network-ProSe-media-PPPP	"1"	Indicates the default ProSe Per-Packet Priority (PPPP) value	TS 24.483 [13] clause 6.2.37	
mcpttgi:off-network-ProSe-emergency-call-signalling-PPPP	"8"	Indicates the default ProSe Per-Packet Priority (PPPP) value	TS 24.483 [13] clause 6.2.38	
mcpttgi:off-network-ProSe-emergency-call-media-PPPP	"8"	Indicates the default ProSe Per-Packet Priority (PPPP) value	TS 24.483 [13] clause 6.2.39	
mcpttgi:off-network-ProSe-imminent-peril-call-signalling-PPPP	"7"	Indicates the default ProSe Per-Packet Priority (PPPP) value	TS 24.483 [13] clause 6.2.40	
mcpttgi:off-network-ProSe-imminent-peril-call-media-PPPP	"7"	Indicates the default ProSe Per-Packet Priority (PPPP) value	TS 24.483 [13] clause 6.2.41	

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttgi:multi-talker-control	"false"	"true" indicates that multi-talker control is enabled for the group "false" indicates that multi-talker control is disabled for the group		
mcpttgi:max-number-simultaneous-talkers	"1"	Indicates the maximum number of parallel talkers in a MCPTT group session in on-network MCPTT procedures		
mcpttgi:audio-mixing-entity	Not present	Absence of the <audio-mixing-entity> element indicates that audio mixing is performed in the network		

5.5.7.2 MCVideo Group Configuration

The structure of a group configuration document is specified in TS 24.481 [11] clause 7, single MCVideo group configuration parameters are defined in TS 24.483 [13] clause 6.

Table 5.5.7.2-1: MCVideo Group Configuration Defaults

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
list-service[1]		Group 1		
uri attribute	px_MCVideo_Group_A_ID	Value is a "uri" attribute specified in OMA OMA-TS-XDM_Group-V1_1	TS 24.483 [13] clause 6.2.7	
display-name	px_MCVideo_Group_A_Name	Value is a <display-name> element specified in OMA OMA-TS-XDM_Group-V1_1	TS 24.483 [13] clause 6.2.8	
list				
entry[1]		group member 1		
uri attribute	px_MCVideo_ID_User_A	Indicates an MCVideo user identity (MCVideo ID) which is a globally unique identifier within the MCVideo service that represents the MCVideo user	TS 24.483 [13] clause 6.2.11	
display-name	Not present			
mcpttgi:user-priority	"3"	Indicates the user priority of the MCVideo group member	TS 24.483 [13] clause 6.2.12	
mcpttgi:participant-type	px_MCX_User_A_ParticipantType	Participant type of the MCVideo group	TS 24.483 [13] clause 6.2.13	
rl:mcvideo-mcvideo-id				
uri attribute	px_MCVideo_ID_User_A			
entry[2]		Group member 2		
uri attribute	px_MCVideo_ID_User_B	Indicates an MCVideo user identity (MCVideo ID) which is a globally unique identifier within the MCVideo service that represents the MCVideo user	TS 24.483 [13] clause 6.2.11	
display-name	Not present			
mcpttgi:user-priority	"2"	Indicates the user priority of the MCVideo group member	TS 24.483 [13] clause 6.2.12	
mcpttgi:participant-type	px_MCX_User_B_ParticipantType	Participant type of the MCVideo group	TS 24.483 [13] clause 6.2.13	
rl:mcvideo-mcvideo-id				
uri attribute	px_MCVideo_ID_User_B			
entry[3]		Group member 3		
uri attribute	px_MCVideo_ID_User_C	Indicates an MCVideo user identity (MCVideo ID) which is a globally unique identifier within the MCVideo service that represents the MCVideo user	TS 24.483 [13] clause 6.2.11	
display-name	Not present			
mcpttgi:user-priority	"1"	Indicates the user priority of the MCVideo group member	TS 24.483 [13] clause 6.2.12	
mcpttgi:participant-type	px_MCX_User_C_ParticipantType	Participant type of the MCVideo group	TS 24.483 [13] clause 6.2.13	
rl:mcvideo-mcvideo-id				
uri attribute	px_MCVideo_ID_User_C			
cp:ruleset				
cp:rule				
cp:id attribute	"rule1"			
cp:actions				

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttgi:on-network-allow-getting-member-list	"true"	Indicates that the identity is allowed to get the MCS group member list of the MCS group in on-network procedures.		
mcpttgi:mcvideo-allow-emergency-call	"true"	Indicates that the identity is allowed to request an MCVideo-emergency call on the MCVideo group.		
mcpttgi:mcvideo-allow-emergency-alert	"true"	Indicates that the identity is allowed to request an MCVideo-emergency alert on the MCVideo group.		
mcpttgi:mcvideo-allow-imminent-peril-call	"true"	Indicates that the identity is allowed to request an MCVideo imminent peril call on the MCVideo group.		
mcpttgi:mcvideo-on-network-allow-conference-state	"true"	Indicates that the identity is allowed to subscribe to the conference event package of an MCVideo group session of the MCVideo group in on-network MCVideo procedures.		
mcpttgi:mcvideo-on-network-allow-getting-affiliation-list	"true"	Indicates that the identity is allowed to get the list of MCVideo users affiliated to the MCVideo group in on-network MCVideo procedures.		
oxe:supported-services				
oxe:service				
oxe:enabler	"urn:urn-7:3gpp-service.ims.icsi.mcvideo"	String defining an enabler		
oxe:group-media				
oxe:mcvideo-video-media				
mcpttgi:off-network-ProSe-layer-2-group-id	tsc_MCX_Group_A_ProSeLayer2GroupID	Indicates the Prose layer-2 group ID	TS 23.303 [68] TS 24.483 [13] clause 6.2.27	
mcpttgi:off-network-IP-multicast-address	"0.0.0.0"	Indicates the ProSe group IP multicast address;the IP version is implicitly given by the notation of the IP address	TS 23.303 [68] TS 24.483 [13] clause 6.2.28	
mcpttgi:off-network-ProSe-relay-service-code	"123456"	Indicates the connectivity service that the ProSe UE-to-network relay provides to public safety applications	TS 23.303 [68] TS 24.483 [13] clause 6.2.29	
mcpttgi:owner	px_MCX_Group_A_Owner_Organization	Group's owner (Mission Critical Organisation).	TS 24.483 [13] clause 6.2.15	
mcpttgi:level-within-group-hierarchy	"0"	Indicates the level within a group hierarchy (only applicable for group-broadcast group).	TS 24.483 [13] clause 6.2.17	

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	Value/remark	Comment	Reference	Condition
mcpttgi:level-within-user-hierarchy	"0"	Indicates the level within user hierarchy (only applicable for user-broadcast group).	TS 24.483 [13] clause 6.2.18	
mcpttgi:mcvideo-on-network-invite-members	"true"			
mcpttgi:mcvideo-on-network-maximum-duration	"1800"	Indicates the max duration of MCVideo group calls.	TS 24.483 [13] clause 6.2.56	
mcpttgi:mcvideo-urgent-real-time-video-mode	"true"	Indicates that urgent real-time video mode is allowed for the MCVideo group.		
mcpttgi:mcvideo-non-urgent-real-time-video-mode	"true"	indicates that non urgent real-time video mode is allowed for the MCVideo group.		
mcpttgi:mcvideo-non-real-time-video-mode	"true"	indicates that non real-time video mode is allowed for the MCVideo group.		
mcpttgi:mcvideo-active-real-time-video-mode	"non-urgent-real-time"	Indicates the the active real time video mode of the current group session		
mcpttgi:mcvideo-maximum-simultaneous-mcvideo-transmitting-group-members	"1"	Indicates the allowed maximum number of simultaneous transmitting MCVideo Group Members.		
mcpttgi:mcvideo-on-network-minimum-number-to-start	"1"	Indicates the minimum number of affiliated group members acknowledging before start of video transmission specified in 3GPP TS 23.281 [24] in on-network MCVideo procedures.		
mcpttgi: mcvideo-on-network-group-priority	"1"	Indicates the priority level of the group in on-network MCVideo procedures. Higher value indicates higher priority. Absence of the <mcvideo-on-network-group-priority> element of the <list-service> element of the MCVideo group document indicates the lowest possible priority.		
mcpttgi:mcvideo-off-network-arbitration-approach	"self"	This leaf node indicates the arbitration approach used for off-network video tranmissions on the group.	TS 24.483 [13] clause 6.2.47	
mcpttgi:mcvideo-off-network-maximum-simultaneous-transmissions	"1"	indicates maximum number of simultaneous transmissions for off-network MCVideo procedures.	TS 24.483 [13] clause 6.2.48	
mcpttgi:mcvideo-off-network-ProSe-signalling-PPPP	"1"	Indicates the default ProSe Per-Packet Priority (PPPP) value	TS 24.483 [13] clause 6.2.50	

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttgi:mcvideo-off-network-ProSe-emergency-call-signalling-PPPP	"8"	Indicates the default ProSe Per-Packet Priority (PPPP) value (as specified in 3GPP TS 23.303 [6]) for the MCVideo emerency group call signalling.	TS 24.483 [13] clause 6.2.52	
mcpttgi:mcvideo-off-network-ProSe-imminent-peril-call-signalling-PPPP	"7"	Indicates the default ProSe Per-Packet Priority (PPPP) value (as specified in 3GPP TS 23.303 [6]) for the MCVideo imminent peril group call signalling.	TS 24.483 [13] clause 6.2.54	
mcpttgi:mcvideo-off-network-ProSe-media-PPPP	"1"	Indicates the default ProSe Per-Packet Priority (PPPP) value	TS 24.483 [13] clause 6.2.51	
mcpttgi:mcvideo-off-network-ProSe-emergency-call-media-PPPP	"8"		TS 24.483 [13] clause 6.2.53	
mcpttgi:mcvideo-off-network-ProSe-imminent-peril-call-media-PPPP	"7"	Indicates the default ProSe Per-Packet Priority (PPPP) value (as specified in 3GPP TS 23.303 [6]) for the MCVideo imminent peril group call media.	TS 24.483 [13] clause 6.2.55	
mcpttgi:mcvideo-off-network-maximum-duration	"60	Indicates the maximum duration of group calls		
mcpttgi:mcvideo-off-network-in-progress-emergency-state-cancellation-timeout	"65535"	Indicates the timeout value for the cancellation of an in progress emergency in off-network MCVideo procedures		
mcpttgi:mcvideo-off-network-in-progress-imminent-peril-state-cancellation-timeout	"65535"	Indicates the timeout value for the cancellation of an in progress imminent-peril group call in off-network MCVideo procedures		

5.5.7.3   MCData Group Configuration

The structure of a group configuration document is specified in TS 24.481 [11] clause 7.

Single MCData group configuration parameters are defined in TS 24.483 [13] clause 6.3.

Table 5.5.7.3-1: MCData Group Configuration Defaults

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
list-service[1]		Group 1		
uri attribute	px_MCDATA_Group_A _ID	Value is a "uri" attribute specified in OMA OMA-TS-XDM_Group-V1_1	TS 24.483 [13] clause 6.2.7	
display-name	px_MCData _Group_A_Name	Value is a <display-name> element specified in OMA OMA-TS-XDM_Group-V1_1	TS 24.483 [13] clause 6.2.8	
list				
entry[1]		group member 1		
uri attribute	px_MCData_ID_User_ A	Indicates an MCData user identity (MCData ID) which is a globally unique identifier within the MCData service that represents the MCData user	TS 24.483 [13] clause 6.2.11	
display-name	Not present			
mcpttgi:user-priority	"3"	Indicates the user priority of the MCData group member	TS 24.483 [13] clause 6.2.12	
mcpttgi:participant-type	px_MCX _User_A_ParticipantTy pe	Participant type of the MCData group	TS 24.483 [13] clause 6.2.13	
rl:mcdata-mcdata-id				
uri attribute	px_MCData_ID_User_ A			
entry[2]		Group member 2		
uri attribute	px_MCData_ID_User_ B	Indicates an MCData user identity (MCData ID) which is a globally unique identifier within the MCData service that represents the MCData user	TS 24.483 [13] clause 6.2.11	
display-name	Not present			
mcpttgi:user-priority	"2"	Indicates the user priority of the MCData group member	TS 24.483 [13] clause 6.2.12	
mcpttgi:participant-type	px_MCX _User_B_ParticipantTy pe	Participant type of the MCData group	TS 24.483 [13] clause 6.2.13	
rl:mcdata-mcdata-id				
uri attribute	px_MCData_ID_User_ B		TS 24.483 [13] clause 6.2.11	
entry[3]		Group member 3		
uri attribute	px_MCData_ID_User_ C	Indicates an MCData user identity (MCData ID) which is a globally unique identifier within the MCData service that represents the MCData user	TS 24.483 [13] clause 6.2.11	
display-name	Not present			
mcpttgi:user-priority	"1"	Indicates the user priority of the MCData group member	TS 24.483 [13] clause 6.2.12	
mcpttgi:participant-type	px_MCX _User_C_ParticipantTy pe	Participant type of the MCData group	TS 24.483 [13] clause 6.2.13	
rl:mcdata-mcdata-id				
uri attribute	px_MCData_ID_User_ C		TS 24.483 [13] clause 6.2.11	
cp:ruleset				
cp:rule				

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
cp:id attribute	"rule1"			
cp:actions				
mcpttgi:on-network-allow-getting-member-list	"true"	Indicates that the identity is allowed to get the MCS group member list of the MCS group in on-network procedures.		
mcpttgi:mcdata-on-network-allow-getting-affiliation-list	"true"	Indicates that the identity is allowed to get the list of MCData users affiliated to the MCData group in on-network MCData procedures		
mcpttgi:mcdata-allow-transmit-data-in-this-group	"true"	Indicates that the identity is allowed to transmit data in this group		
oxe:supported-services				
oxe:service				
oxe:enabler	"urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"	String defining an enabler		
mcpttgi:off-network-ProSe-layer-2-group-id	tsc_MCX_Group_A_ProSeLayer2GroupID	Indicates the Prose layer-2 group ID	TS 23.303 [68] TS 24.483 [13] clause 6.2.27	
mcpttgi:off-network-IP-multicast-address	"0.0.0.0"	Indicates the ProSe group IP multicast address;the IP version is implicitly given by the notation of the IP address	TS 23.303 [68] TS 24.483 [13] clause 6.2.28	
mcpttgi:off-network-ProSe-relay-service-code	"123456"	Indicates the connectivity service that the ProSe UE-to-network relay provides to public safety applications	TS 23.303 [68] TS 24.483 [13] clause 6.2.29	
mcpttgi:owner	px_MCX_Group_A_Owner_Organization	Group's owner (Mission Critical Organisation).	TS 24.483 [13] clause 6.2.15	
mcpttgi:level-within-group-hierarchy	"0"	Indicates the level within a group hierarchy (only applicable for group-broadcast group).	TS 24.483 [13] clause 6.2.17	
mcpttgi:mcdata-enhanced-status-operational-values		A list of operational values used for the enhanced status service and two text strings used to display a meaningful message to the user.		
mcpttgi:status				
id	"0"			
mcpttgi:shortText				
langType	"English"			
langText	"going"			
mcpttgi:description				
langType	"English"			
langText	"going to the operation site"			
mcpttgi:status				
id	"1"			
mcpttgi:shortText				

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
langType	"English"			
langText	"arrived"			
mcpttgi:description				
langType	"English"			
langText	"just arrived at the operation site"			
mcpttgi:level-within-user-hierarchy	"0"	Indicates the level within user hierarchy (only applicable for user-broadcast group).	TS 24.483 [13] clause 6.2.18	
mcpttgi:mcdata-on-network-group-priority	"1"	Indicates the priority level of the group in on-network MCData procedures. Higher value indicates higher priority		
mcpttgi:mcdata-on-network-max-data-size-for-SDS	"10000"	Indicates the maximum size of data (in bytes) that the originating MCData client is allowed to send to the MCData server for on-network SDS communications		
mcpttgi:mcdata-on-network-max-data-size-for-FD	"10000"	Indicates the maximum size of data (in bytes) that the originating MCData client is allowed to send to the MCData server for on-network FD communications		
mcpttgi:mcdata-on-network-max-data-size-auto-recv	"2000"	Indicates the maximum size of data (in bytes) which the MCData server always requests the terminating MCData client to automatically download for on-network FD communications using HTTP		
mcpttgi:mcdata-off-network-ProSe-signalling-PPPP	"1"	Indicates the ProSe Per-Packet Priority value to be used when transmitting IP packets carrying signalling for a call on the MCData group in off-network MCData procedures		
mcpttgi:mcdata-off-network-ProSe-media-PPPP	"1"	Indicates the ProSe Per-Packet Priority value to be used when transmitting IP packets carrying media for a call on the MCData group in off-network MCData procedures		

5.5.7.4 MCX Group Creation Documents

Table 5.5.7.4-1: MCX Group Creation Document

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
list-service [1]				
uri-attribute	px_MCPTT_Group_B_ID	uri of the MCPTT group	TS 24.481 [11]	MCPTT
	px_MCVideo_Group_B_ID			MCVIDEO
	px_MCData_Group_B_ID			MCDATA
display-name	any value	group display name	TS 24.481 [11]	
list				
entry[1]		**User-C**		
uri-attribute	px_MCPTT_ID_User_C	User ID allowed to participate in this group	TS 24.481 [11]	MCPTT
	px_MCVideo_ID_User_C			MCVIDEO
	px_MCData_ID_User_C			MCDATA
display-name	Not present	User display name	TS 24.481 [11]	
entry[2]		**User-D**		
uri-attribute	px_MCPTT_ID_User_D	User ID allowed to participate in this group	TS 24.481 [11]	MCPTT
	px_MCVideo_ID_User_D			MCVIDEO
	px_MCData_ID_User_D			MCDATA
display-name	Not present	User display name	TS 24.481 [11]	
oxe:supported-services				
oxe:service			TS 24.481 [11]	
oxe:enabler	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
	"urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"			MCDATA
oxe:group-media				
mcpttgi:mcptt-speech	Present			MCPTT
mcpttgi:mcvideo-video-media	Present			MCVIDEO

Table 5.5.7.4-2: MCX Temporary Group Creation Document

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.481 [11] clause 7.3.4				
gmop:document				
gmop:request				
gmop:group-regroup-creation				
group				
list-service[1]				
uri attribute	px_MCPTT_Group_T_ID	MCS temporary group identity		MCPTT
	px_MCVideo_Group_T_ID			MCVIDEO
	px_MCData_Group_T_ID			MCDATA
display-name	Not present			
list	Not present	Temporary group contains constituent groups but no group members		
mcpttgi:on-network-temporary			TS 24.481 [11]	
constituent-MCPTT-group-IDs				
constituent-MCPTT-group-ID[1]	px_MCPTT_Group_A_ID	MCS group ID of a constituent MCS group of the temporary MCS group		MCPTT
	px_MCVideo_Group_A_ID			MCVIDEO
	px_MCData_Group_A_ID			MCDATA
constituent-MCPTT-group-ID[2]	px_MCPTT_Group_B_ID	MCS group ID of a constituent MCS group of the temporary MCS group		MCPTT
	px_MCVideo_Group_B_ID			MCVIDEO
	px_MCData_Group_B_ID			MCDATA
oxe:supported-services				
oxe:service			TS 24.481 [11]	
oxe:enabler	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			MCPTT
	"urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
	"urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"			MCDATA
oxe:group-media				
mcpttgi:mcptt-speech	Present			MCPTT
mcpttgi:mcvideo-video-media	Present			MCVIDEO

5.5.8 Default MCS configuration management messages and other information elements

5.5.8.1 MCX Initial UE Configuration

The structure of a initial UE configuration document is specified in TS 24.484 [14] clause 7.2, single MCX group configuration parameters are defined in TS 24.483 [13] clause 8.2.

Table 5.5.8.1-1: MCX Initial UE Configuration Defaults

Derivation Path: TS 24.484 [14], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcptt-UE-initial-configuration				
domain attribute	px_MCX_DomainName _Organization_A	Mandatory attribute: domain name of the mission critical organization		
Default-user-profile	not present			
on-network				
Timers				
T100	"2"	Values 0-255 sec	TS 24.483 [13] clause 8.2.11	
T101	"2"	Values 0-255 sec	TS 24.483 [13] clause 8.2.12	
T103	"5"	Values 0-255 sec	TS 24.483 [13] clause 8.2.13	
T104	"2"	Values 0-255 sec	TS 24.483 [13] clause 8.2.14	
T132	"3"	Values 0-255 sec	TS 24.483 [13] clause 8.2.15	
HPLMN				
PLMN attribute	PLMN-Id = MCC || MNC with MCC and MNC being the same as stored in EF$_{IMSI}$ on the test SIM card according to clause 4.9.2 in TS 36.508 [6]	PLMN on which the UE is allowed for MCX services. NOTE: Same PLMN as of the Cell on which the UE is camped during testing.	TS 23.003 [69] clause 12.1 TS 24.483 [13] clause 8.2.16	
service		MCX related services on a per HPLMN basis		
MCPTT-to-con-ref	px_MCX_APN	configuration parameter for establishment of the PDN connection for the **MCX service**	TS 24.483 [13] clause 8.2.21	
MC-common-core-to-con-ref	px_MCX_APN	configuration parameter for establishment of the PDN connection for the **MC common core service**	TS 24.483 [13] clause 8.2.24	
MC-ID-to-con-ref	px_MCX_APN	configuration parameter for establishment of the PDN connection for the **MC identity management service**	TS 24.483 [13] clause 8.2.27	
VPLM[1]	empty list			
App-Server-Info				
idms-auth-endpoint	"https://" & px_MCX_IdMS_auth_I PAddress & ":" & px_MCX_IdMS_auth_P ort & tsc_MCX_IdMS_auth_ UriPath	Identity management server authorisation endpoint identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.41	IPv4
	"https://[" & px_MCX_IdMS_auth_I PAddress & "]:" & px_MCX_IdMS_auth_P ort & tsc_MCX_IdMS_auth_ UriPath	Identity management server authorisation endpoint identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.41	IPv6

Derivation Path: TS 24.484 [14], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
idms-token-endpoint	"https://" & px_MCX_IdMS_token_IPAddress & ":" & px_MCX_IdMS_token_Port & tsc_MCX_IdMS_token_UriPath	Identity management server token endpoint identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.41A	IPv4
	"https://[" & px_MCX_IdMS_token_IPAddress & "]:" & px_MCX_IdMS_token_Port & tsc_MCX_IdMS_token_UriPath	Identity management server token endpoint identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.41A	IPv6
http-proxy	"https://" & px_MCX_HTTP_Proxy_IPAddress & ":" & px_MCX_HTTP_Proxy_Port	IP address and port used by the UE for the HTTP TCP connection	TS 23.003 [69] TS 24.483 [13] clause 8.2.41B	IPv4
	"https://[" & px_MCX_HTTP_Proxy_IPAddress & "]:" & px_MCX_HTTP_Proxy_Port	IP address and port used by the UE for the HTTP TCP connection	TS 23.003 [69] TS 24.483 [13] clause 8.2.41B	IPv6
gms	tsc_MCX_GMS_Hostname	Indicates the group management server identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.42	
cms	tsc_MCX_CMS_Hostname	Indicates the configuration management server identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.43	
kms	tsc_MCX_KMS_Hostname	Indicates the key management server identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.44	
tls-tunnel-auth-method				
mutual-authentication	"false"	Indicates whether mutual authentication is used for the TLS tunnel authentication false=one-way authentication based on the server certificate is used	TS 24.483 [13] clause 8.2.44B	
x509	Not present	the X.509 certificate for mutual authentication for the TLS tunnel authentication	TS 24.483 [13] clause 8.2.44C	
key	Not present	pre-shared key for mutual authentication for the TLS tunnel authentication	TS 24.483 [13] clause 8.2.44D	
GMS-URI	tsc_MCX_GMSURI	The group management service URI information which contains the public service identity for performing subscription proxy function of the GMS	TS 23.003 [69] TS 24.483 [13] clause 8.2.9	
group-creation-XUI	px_MCX_GroupCreationXUI	Indicates the group creation XUI information for creation of groups	TS 23.003 [69] TS 24.483 [13] clause 8.2.9A	

Derivation Path: TS 24.484 [14], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
GMS-XCAP-root-URI	tsc_MCX_GMSXCAPRootURI	Indicates the group management server XCAP Root URI information	TS 23.003 [69] TS 24.483 [13] clause 8.2.9B	
CMS-XCAP-root-URI	tsc_MCX_CMSXCAPRootURI	Indicates the configuration management server XCAP Root URI information	TS 23.003 [69] TS 24.483 [13] clause 8.2.9C	
integrity-protection-enabled	"true"	Indicates whether integrity protection is enabled	TS 24.483 [13] clause 8.2.44E	
confidentiality-protection-enabled	"true"	Indicates whether integrity protection is enabled	TS 24.483 [13] clause 8.2.44F	
anyExt				
MCPTT-Service-Details				
IPv6-Required	false	indicates whether IPv6 shall be used to access the MCPTT service		
Server-URI	tsc_MCPTT_PublicServiceId_A	URI used to contact the MCPTT service server		
MCVideo-Service-Details				
IPv6-Required	false	indicates whether IPv6 shall be used to access the MCVideo service		
Server-URI	tsc_MCVideo_PublicServiceId_A	URI used to contact the MCVideo service server		
MCData-Service-Details				
IPv6-Required	false	indicates whether IPv6 shall be used to access the MCData service		
Server-URI	tsc_MCData_PublicServiceId_A	URI used to contact the MCData service server		
off-network				
Timers				
TFG1	"150"	Indicates the timer for wait for call announcement; Values: 0-65535 ms	TS 24.483 [13] clause 8.2.47	
TFG2	"2000"	Indicates the timer for call announcement; Values: 0-65535 ms	TS 24.483 [13] clause 8.2.48	
TFG3	"40"	Indicates the timer for call probe retransmission; Values: 0-65535 ms	TS 24.483 [13] clause 8.2.49	
TFG4	"20"	Indicates the timer for waiting for the MCX user; Values: 0-60 s	TS 24.483 [13] clause 8.2.50	
TFG5	"2"	Indicates the timer for not present incoming call announcements; Values: 0-255 s	TS 24.483 [13] clause 8.2.51	
TFG11	"3000"	Indicates the timer for MCX emergency end retransmission; Values: 0-65535 ms	TS 24.483 [13] clause 8.2.52	
TFG12	"3000"	Indicates the timer for MCX imminent peril end retransmission; Values: 0-65535 ms	TS 24.483 [13] clause 8.2.53	

Derivation Path: TS 24.484 [14], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
TFG13	"1"	Indicates the timer for implicit priority downgrade; Values: 0-255 s	TS 24.483 [13] clause 8.2.54	
TFG14	"1"	Indicates the MCX timer for implicit priority downgrade (imminent peril); Values: 0-255 s	TS 24.483 [13] clause 8.2.54A	
TFP1	"2000"	Indicates the timer for private call request retransmission; Values: 0-65535 ms	TS 24.483 [13] clause 8.2.55	
TFP2	"50"	Indicates the timer for waiting for call response message; Values: 0-60 s	TS 24.483 [13] clause 8.2.56	
TFP3	"2000"	Indicates the timer for private call release retransmission; Values: 0-65535 ms	TS 24.483 [13] clause 8.2.57	
TFP4	"5000"	Indicates the timer for private call release retransmission; Values: 0-65535 ms	TS 24.483 [13] clause 8.2.58	
TFP5	"30"	Indicates the timer for call release; Values: 0-600 s	TS 24.483 [13] clause 8.2.59	
TFP6	"3000"	Indicates the timer for MCX emergency private call cancel retransmission; Values: 0-65535 ms	TS 24.483 [13] clause 8.2.60	
TFP7	"6"	Indicates the timer for waiting for any message with same call identifier; Values: 0-255 s	TS 24.483 [13] clause 8.2.61	
TFB1	"300"	Indicates the timer for max duration; Values: 0-600 s	TS 24.483 [13] clause 8.2.62	
TFB2	"10"	Indicates the timer for max duration; Values: 0-10 s	TS 24.483 [13] clause 8.2.63	
TFB3	"20"	Indicates the timer for waiting for the MCX user; Values: 0-60 s	TS 24.483 [13] clause 8.2.64	
T201	"1000"	Indicates the timer for floor request; Values: 0-65535 ms	TS 24.483 [13] clause 8.2.65	
T203	"5"	Indicates the timer for end of RTP media; Values: 0-255 s	TS 24.483 [13] clause 8.2.66	
T204	"5"	Indicates the timer for floor queue position request; Values: 0-255 s	TS 24.483 [13] clause 8.2.67	
T205	"1"	Indicates the timer for floor granted request; Values: 0-255 s	TS 24.483 [13] clause 8.2.68	
T230	"10"	Indicates the timer for inactivity; Values: 0-255 s	TS 24.380 [10] TS 24.581 [88]	
T233	"10"	Indicates the timer for pending user action; Values: 0-255 s	TS 24.483 [13] clause 8.2.70	

Derivation Path: TS 24.484 [14], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
TFE1	"30"	Indicates the timer for MCX emergency alert; Values: 0-65535 s	TS 24.483 [13] clause 8.2.71	
TFE2	"10"	Indicates the timer for MCX emergency alert re-transmission; Values: 0-10 s	TS 24.483 [13] clause 8.2.72	
Counters				
CFP1	"3"	Indicates the counter for private call request retransmission	TS 24.483 [13] clause 8.2.74	
CFP3	"5"	Indicates the counter for private call release retransmission	TS 24.483 [13] clause 8.2.75	
CFP4	"2"	Indicates the counter for private call accept retransmission	TS 24.483 [13] clause 8.2.76	
CFP6	"2"	Indicates the counter for private call accept retransmission	TS 24.483 [13] clause 8.2.77	
CFP11	"2"	Indicates the counter for MCX group call emergency end retransmission	TS 24.483 [13] clause 8.2.78	
CFP12	"2"	Indicates the counter for MCX imminent peril call emergency end retransmission	TS 24.483 [13] clause 8.2.79	
C201	"3"	Indicates the counter for floor request	TS 24.483 [13] clause 8.2.80	
C204	"2"	Indicates the counter for floor queue position request	TS 24.483 [13] clause 8.2.81	
C205	"4"	Indicates the counter for floor granted request	TS 24.483 [13] clause 8.2.82	

Condition	**Explanation**
IPv4	IP address is IPv4 address
IPv6	IP address is IPv6 address

5.5.8.2   MCPTT UE Configuration

The structure of a group configuration document is specified in TS 24.484 [14] clause 8.2, single MCPTT group configuration parameters are defined in TS 24.483 [13] clause 4.2.

Table 5.5.8.2-1: MCPTT UE Configuration Defaults

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.484 [14] clause 8.2				
mcptt-UE-configuration				
domain attribute	px_MCX_DomainName _Organization_A	Mandatory attribute: domain name of the mission critical organization		
common				
private-call				
Max-Simul-Call-N10	"2"	Indicates the maximum number of private calls	TS 24.483 [13] clause 4.2.7	
MCPTT-Group-Call				
Max-Simul-Call-N4	"3"	Indicates the maximum number of simultaneous group calls	TS 24.483 [13] clause 4.2.9	
Max-Simul-Trans-N5	"5"	Indicates the maximum number of transmissions in a group	TS 24.483 [13] clause 4.2.10	
Prioritized-MCPTT-Group				
MCPTT-Group-Priority[1]				
MCPTT-Group-ID	px_MCPTT_Group_A_I D	Value is a "uri" attribute specified in OMA OMA-TS-XDM_Group-V1_1 that indicates the group id.	TS 24.483 [13] clause 4.2.13	
group-priority-hierarchy	"7"	Indicates the requested presentation priority of group call; Values: 0-7 "7"=the top priority among groups	TS 24.483 [13] clause 4.2.14	
on-network				
IPv6Preferred	"false"	Indicates whether IPv6 is preferred over IPv4 for on-network operation when the UE has both IPv4 and IPv6 host configuration.	TS 24.483 [13] clause 4.2.17	
Relay-Service	"true"	Indicates the authorisation to use a relay service	TS 24.483 [13] clause 4.2.16	
Relayed-MCPTT-Group[1]				
MCPTT-Group-ID	px_MCPTT_Group_A_I D	One allowed relayed MCPTT group	TS 24.483 [13] clause 4.2.20	
Relay-Service-Code	"123456"	Identifies a connectivity service the ProSe UE-to-Network Relay provides to Public Safety applications; 24-bit value	TS 23.303 [68] TS 24.483 [13] clause 4.2.21	

5.5.8.3   MCPTT User Profile

The structure of a user profile document is specified in TS 24.484 [14] clause 8.3, single MCPTT group configuration parameters are defined in TS 24.483 [13] clause 5.2.

The structure of the configuration document is based on the XML Schema in clause 8.3.2.3 of TS 24.484 [14] and XML "ruleset" schema according to IETF RFC 4745 [103]. To distinguish the schemas the prefix "cp" ("common policy") is used for the ruleset.

Table 5.5.8.3-1: MCPTT User Profile Defaults

Derivation Path: TS 24.484 [14] clause 8.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcptt-user-profile				
XUI-URI attribute	"sip:" & px_MCPTT_ID_User_A	same as the XUI value of the Document URI		
user-profile-index attribute	"49"	value arbitrarily selected		
Status	true	MCPTT user profile is enabled		
ProfileName	"mcptt-user-profile-" & user-profile-index & ".xml"	name of the user profile document; user-profile-index is the value of the user-profile-index attribute	TS 24.483 [13] clause 5.2.7B	
Common				
index attribute	"0"	Index for the particular MCPTT user profile		
MCPTTUserID				
index attribute	"0"			
uri-entry	px_MCPTT_ID_User_A	MCPTT user identity (MCPTT ID) which is a globally unique identifier within the MCPTT service that represents the MCPTT user	TS 24.483 [13] clause 5.2.7	
UserAlias		Alphanumeric aliases of MCPTT user	TS 24.483 [13] clause 5.2.8	
alias-entry	px_MCPTT_User_A_Alias			
ParticipantType	px_MCX_User_A_ParticipantType			
MissionCriticalOrganization	px_MCX_DomainName_Organization_A	Indicates the organization an MCPTT user belongs to	TS 24.483 [13] clause 5.2.11	
PrivateCall				
PrivateCallList				
PrivateCallURI[1]				
index attribute	"0"			
uri-entry	px_MCPTT_ID_User_B	MCPTT user(s) who can be called in a MCPTT private call	TS 24.483 [13] clause 5.2.17	
display-name	"User B Name"	a human readable name for this User	TS 24.483 [13] clause 5.2.18	
PrivateCallURI[2]				
index attribute	"1"			
uri-entry	px_MCPTT_ID_User_C	MCPTT user(s) who can be called in a MCPTT private call	TS 24.483 [13] clause 5.2.17	
display-name	"User C Name"	a human readable name for this User	TS 24.483 [13] clause 5.2.18	
PrivateCallProSeUser[1]				
index attribute	"0"			
DiscoveryGroupID	'123456'O	Discovery group ID in the ProSe discovery procedures	TS 23.303 [68] TS 24.483 [13] clause 5.2.19	
User-Info-ID	'555555555555'O	Prose user Info ID in the ProSe discovery procedures	TS 23.303 [68] TS 24.483 [13] clause 5.2.19A	
PrivateCallProSeUser[2]				
index attribute	"1"			
DiscoveryGroupID	'123456'O	Discovery group ID in the ProSe discovery procedures	TS 23.303 [68] TS 24.483 [13] clause 5.2.19	
User-Info-ID	'666666666666'O	Prose user Info ID in the ProSe discovery procedures	TS 23.303 [68] TS 24.483 [13] clause 5.2.19A	
EmergencyCall				

Derivation Path: TS 24.484 [14] clause 8.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MCPTTPrivateRecipient				
entry				
entry-info attribute	"UsePreConfigured"	Indicates the criteria to determine when initiation of an MCPTT emergency private call uses the MCPTT private recipient ID.	TS 24.483 [13] clause 5.2.29F	
index attribute	"0"			
uri-entry	px_MCPTT_ID_User_B	The MCPTT private recipient for an MCPTT emergency private call	TS 24.483 [13] clause 5.2.29B	
display-name	"User B Name"	a human readable name for this User	TS 24.483 [13] clause 5.2.29E	
ProSeUserID-entry				
index attribute	"0"			
DiscoveryGroupID	'123456'O	Discovery group ID in the ProSe discovery procedures	TS 24.483 [13] clause 5.2.29C	
User-Info-ID	'555555555555'O	ProSe user Info ID in the ProSe discovery procedures	TS 24.483 [13] clause 5.2.29D	
MCPTT-group-call				
MaxSimultaneousCallsN6	"3"	Indicates the maximum number of simultaneously received MCPTT group calls	TS 24.483 [13] clause 5.2.31	
EmergencyCall				
MCPTTGroupInitiation				
entry				
entry-info attribute	"UseCurrentlySelected Group"	Use currently selected MCPTT group for an on-network MCPTT emergency group call	TS 24.483 [13] clause 5.2.34D	
index attribute	"0"			
uri-entry	px_MCPTT_Group_A_I D	The group used upon certain criteria on initiation of an MCPTT emergency group call	TS 24.483 [13] clause 5.2.34B	
display-name	px_MCPTT_Group_A_ Name	The display name for group used for emergency	TS 24.483 [13] clause 5.2.34C	
ImminentPerilCall				
MCPTTGroupInitiation				
entry				
entry-info attribute	"UseCurrentlySelected Group"	Use currently selected MCPTT group for an on-network MCPTT imminent peril group call	TS 24.483 [13] clause 5.2.39D	
index attribute	"0"			
uri-entry	px_MCPTT_Group_A_I D	the group used on initiation of an MCPTT imminent peril group call.	TS 24.483 [13] clause 5.2.39B	
display-name	px_MCPTT_Group_A_ Name	display name for group used for the imminent peril call	TS 24.483 [13] clause 5.2.39C	
EmergencyAlert				
MCPTTGroupInitiation				
entry				
index attribute	"0"			
entry-info attribute	"UseCurrentlySelected Group"	Use currently selected MCPTT group for emergency alert	TS 24.483 [13] clause 5.2.43E	

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.484 [14] clause 8.3				
uri-entry	px_MCPTT_Group_A_ID	Indicates the MCPTT group used upon certain criteria on initiation of an MCPTT emergency alert.	TS 24.483 [13] clause 5.2.43B	
display-name	px_MCPTT_Group_A_Name	Optional; name of emergency alert group	TS 24.483 [13] clause 5.2.43D	
Priority	"10"	Indicates the priority of the MCPTT group calls, 0-255	TS 24.483 [13] clause 5.2.43F	
OffNetwork				
index attribute	"0"			
MCPTTGroupInfo				
entry[1]				
index attribute	"0"			
uri-entry	px_MCPTT_Group_A_ID	Indicates an off-network MCPTT group for use by an MCPTT user	TS 24.483 [13] clause 5.2.53	
display-name	px_MCPTT_Group_A_Name	The display name corresponding to off-network group id	TS 24.483 [13] clause 5.2.53A	
User-Info-ID	'555555555555'O	ProSe user info ID	TS 23.303 [68] TS 24.483 [13] clause 5.2.58	
OnNetwork				
index attribute	"0"			
MCPTTGroupInfo				
entry[1]		Group 1 the MCPTT user is allowed to affiliate to		
index attribute	"0"			
uri-entry	px_MCPTT_Group_A_ID	The MCPTT group ID for the on-network MCPTT group that the MCPTT user is allowed to affiliate to.	TS 24.483 [13] clause 5.2.48B 4	
display-name	px_MCPTT_Group_A_Name	The display name for the group	TS 24.483 [13] clause 5.2.48B 5	
anyEXT				
RulesForAffiliation			TS 24.483 [13] clause 5.2.48B 4A	
ListOfLocationCriteria				
EnterSpecificArea				
EllipsoidArcArea				
Center				
Latitude	"3331608"	Latitude of 35.74428 degrees encoded according to TS 23.032 [65] clause 6.1		
Longitude	"6510349"	Longitude of 139.69695 degrees encoded according to TS 23.032 [65] clause 6.1		
Radius	"10"	Radius of 50 meters encoded according to TS 23.032 [65] clause 6.6		
OffsetAngle	"0"	0 degrees		
IncludedAngle	"179"	Full circle: 360 degrees encoded according to TS 23.032 [65] clause 6.7		
ExitSpecificArea				

Derivation Path: TS 24.484 [14] clause 8.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
EllipsoidArcArea				
Center				
Latitude	"3331608"	Latitude of 35.74428 degrees encoded according to TS 23.032 [65] clause 6.1		
Longitude	"6510401"	Longitude of 139.69806 degrees encoded according to TS 23.032 [65] clause 6.1		
Radius	"10"	Radius of 50 meters encoded according to TS 23.032 [65] clause 6.6		
OffsetAngle	"0"	0 degrees		
IncludedAngle	"179"	Full circle: 360 degrees encoded according to TS 23.032 [65] clause 6.7		
RulesForDeaffiliation			TS 24.483 [13] clause 5.2.48B 4B	
ListOfLocationCriteria				
EnterSpecificArea				
EllipsoidArcArea				
Center				
latitude	"3331608"	Latitude of 35.74428 degrees encoded according to TS 23.032 [65] clause 6.1		
longitude	"6510401"	Longitude of 139.69806 degrees encoded according to TS 23.032 [65] clause 6.1		
Radius	"10"	Radius of 50 meters encoded according to TS 23.032 [65] clause 6.6		
OffsetAngle	"0"	0 degrees		
IncludedAngle	"179"	Full circle: 360 degrees encoded according to TS 23.032 [65] clause 6.7		
ExitSpecificArea				
EllipsoidArcArea				
Center				
latitude	"3331608"	Latitude of 35.74428 degrees encoded according to TS 23.032 [65] clause 6.1		
longitude	"6510349"	Longitude of 139.69695 degrees encoded according to TS 23.032 [65] clause 6.1		
Radius	"10"	Radius of 50 meters encoded according to TS 23.032 [65] clause 6.6		
OffsetAngle	"0"	0 degrees		
IncludedAngle	"179"	Full circle: 360 degrees encoded according to TS 23.032 [65] clause 6.7		

Derivation Path: TS 24.484 [14] clause 8.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
manual-deaffiliation-not-allowed-if-affiliation-rules-are-met	"false"		TS 24.483 [13] clause 5.2.48B6	
MaxAffiliationsN2	20			
MaxSimultaneousTransmissionsN7	20			
ImplicitAffiliations		Group 1 the MCPTT user is implicitly affiliated to		
entry				
index attribute	"0"			
uri-entry	px_MCPTT_Group_A_ID	indicates a MCPTT group ID to which the MCPTT user is implicitly affiliated to	TS 24.483 [13] clause 5.2.48C4	
display-name	px_MCPTT_Group_A_Name	display name for implicitly affiliated group	TS 24.483 [13] clause 5.2.48C5	
PrivateEmergencyAlert				
entry				
entry-info attribute	"UsePreConfigured"	Indicates the criteria to determine when initiation of an MCPTT emergency private call uses the MCPTT private recipient ID.	TS 24.483 [13] clause 5.2.48O	
index attribute	"0"			
uri-entry	px_MCPTT_ID_User_B	Indicates the default MCPTT user ID to be used upon certain criteria on initiation of an MCPTT private emergency alert for on-network	TS 24.483 [13] clause 5.2.48M	
display-name	"User B Name"	The display name corresponding to private emergency call id	TS 24.483 [13] clause 5.2.48N	
anyExt				
RemoteGroupSelectionURIList			TS 24.483 [13] clause 5.2.48U2	
entry[1]	px_MCPTT_ID_User_A		TS 24.483 [13] clause 5.2.48U4	
entry[2]	px_MCPTT_ID_User_B		TS 24.483 [13] clause 5.2.48U4	
entry[3]	px_MCPTT_ID_User_C		TS 24.483 [13] clause 5.2.48U4	
FunctionalAliasList			TS 24.483 [13] clause 5.2.48W6	
entry[1]				
uri-entry[1]	px_MCPTT_ID_FA_A			
anyExt				
LocationCriteriaForActivation				
EnterSpecificArea				
EllipsoidArcArea				
Center				

Derivation Path: TS 24.484 [14] clause 8.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
latitude	"3331608"	Latitude of 35.74428 degrees encoded according to TS 23.032 [65] clause 6.1		
longitude	"6510401"	Longitude of 139.69806 degrees encoded according to TS 23.032 [65] clause 6.1		
Radius	"10"	Radius of 50 meters encoded according to TS 23.032 [65] clause 6.6		
OffsetAngle	"0"	0 degrees		
IncludedAngle	"179"	Full circle: 360 degrees encoded according to TS 23.032 [65] clause 6.7		
ExitSpecificArea				
EllipsoidArcArea				
Center				
latitude	"3331608"	Latitude of 35.74428 degrees encoded according to TS 23.032 [65] clause 6.1		
longitude	"6510349"	Longitude of 139.69695 degrees encoded according to TS 23.032 [65] clause 6.1		
Radius	"10"	Radius of 50 meters encoded according to TS 23.032 [65] clause 6.6		
OffsetAngle	"0"	0 degrees		
IncludedAngle	"179"	Full circle: 360 degrees encoded according to TS 23.032 [65] clause 6.7		
LocationCriteriaForDeactivation				
EnterSpecificArea				
EllipsoidArcArea				
Center				
latitude	"3331608"	Latitude of 35.74428 degrees encoded according to TS 23.032 [65] clause 6.1		
longitude	"6510349"	Longitude of 139.69695 degrees encoded according to TS 23.032 [65] clause 6.1		
Radius	"10"	Radius of 50 meters encoded according to TS 23.032 [65] clause 6.6		
OffsetAngle	"0"	0 degrees		
IncludedAngle	"179"	Full circle: 360 degrees encoded according to TS 23.032 [65] clause 6.7		
ExitSpecificArea				
EllipsoidArcArea				
Center				

Derivation Path: TS 24.484 [14] clause 8.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
latitude	"3331608"	Latitude of 35.74428 degrees encoded according to TS 23.032 [65] clause 6.1		
longitude	"6510401"	Longitude of 139.69806 degrees encoded according to TS 23.032 [65] clause 6.1		
Radius	"10"	Radius of 50 meters encoded according to TS 23.032 [65] clause 6.6		
OffsetAngle	"0"	0 degrees		
IncludedAngle	"179"	Full circle: 360 degrees encoded according to TS 23.032 [65] clause 6.7		
manual-deactivation-not-allowed-if-location-criteria-met	"false"		TS 24.483 [13] clause 5.2.48 W6C	
cp:ruleset				
cp:rule				
cp:id attribute	"rule1"			
cp:actions				
allow-create-delete-user-alias	"true"	Indicates authorisation to create and delete aliases of other MCPTT users	TS 24.483 [13] clause 5.2.9	
allow-private-call	"true"	Indicates the authorisation to make a MCPTT private call	TS 24.483 [13] clause 5.2.13	
allow-private-call-to-any-user	"true"	indicates the authorisation to make a MCPTT private call to any MCPTT user	TS 24.483 [13] clause 5.2.14	
allow-manual-commencement	"true"	Indicates the authorisation to make a MCPTT private call with manual commencement	TS 24.483 [13] clause 5.2.20	
allow-automatic-commencement	"true"	Indicates the authorisation to make a MCPTT private call with automatic commencement	TS 24.483 [13] clause 5.2.21	
allow-force-auto-answer	"true"	Indicates the authorisation of MCPTT user to force automatic answer for a MCPTT private call	TS 24.483 [13] clause 5.2.22	
allow-failure-restriction	"false"	Indicates the authorisation to restrict the provision of a notification of call failure reason for a MCPTT private call	TS 24.483 [13] clause 5.2.23	
allow-private-call-media-protection	"true"	Indicates authorisation to protect confidentiality and integrity of media for MCPTT private calls	TS 24.483 [13] clause 5.2.24	
allow-private-call-floor-control-protection	"true"	Indicates authorisation to protect confidentiality and integrity of floor control signalling for MCPTT private calls.	TS 24.483 [13] clause 5.2.25	

Derivation Path: TS 24.484 [14] clause 8.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
allow-emergency-private-call	"true"	Indicates the authorisation to make an MCPTT emergency private call.	TS 24.483 [13] clause 5.2.27	
allow-cancel-private-emergency-call	"true"	Indicates the authorisation to cancel emergency priority in an MCPTT emergency private call by an authorised MCPTT user	TS 24.483 [13] clause 5.2.28	
allow-emergency-group-call	"true"	Indicates the authorisation to make an MCPTT emergency group call functionality enabled for MCPTT user	TS 24.483 [13] clause 5.2.33	
allow-cancel-group-emergency	"true"	Indicates the authorisation to cancel an in progress MCPTT emergency call associated with a group.	TS 24.483 [13] clause 5.2.35	
allow-imminent-peril-call	"true"	Indicates the authorisation to make an Imminent Peril group call	TS 24.483 [13] clause 5.2.37	
allow-cancel-imminent-peril	"true"	Indicates the authorisation for in-progress MCPTT imminent peril cancelation	TS 24.483 [13] clause 5.2.38	
allow-activate-emergency-alert	"true"	Indicates the authorisation to activate an MCPTT emergency alert	TS 24.483 [13] clause 5.2.41	
allow-cancel-emergency-alert	"true"	Indicates the authorisation to cancel an MCPTT emergency alert	TS 24.483 [13] clause 5.2.42	
allow-create-group-broadcast-group	"true"	Indicates the authorisation to create a group-broadcast group.	TS 24.483 [13] clause 5.2.46	
allow-create-user-broadcast-group	"true"	Indicates the authorisation to create a user-broadcast group	TS 24.483 [13] clause 5.2.48	
allow-offnetwork	"true"	Indicates the authorisation for off-network services	TS 24.483 [13] clause 5.2.50	
allow-listen-both-overriding-and-overridden	"false"	Indicates whether the MCPTT user is allowed to listen both overriding and override	TS 24.483 [13] clause 5.2.54	
allow-transmit-during-override	"false"	Indicates whether the MCPTT user is allowed to transmit in case of override (overriding and/or overridden)	TS 24.483 [13] clause 5.2.55	
allow-off-network-group-call-change-to-emergency	"true"	Indicates the authorisation for a participant to change an off-network group call in-progress to an off-network MCPTT emergency group call	TS 24.483 [13] clause 5.2.56	

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Derivation Path: TS 24.484 [14] clause 8.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
allow-imminent-peril-change	"true"	Indicates the authorisation for a participant to change an off-network group call in-progress to an off-network MCPTT imminent peril group call	TS 24.483 [13] clause 5.2.57	
allow-regroup	"true"	Indicates whether the MCPTT user is authorised to perform dynamic regrouping operations	TS 24.483 [13] clause 5.2.48D	
allow-presence-status	"true"	Indicates the presence status on the network of this MCPTT user is available	TS 24.483 [13] clause 5.2.48E	
allow-request-presence	"true"	Indicates whether the MCPTT user is authorised to obtain whether a particular MCPTT User is present on the network	TS 24.483 [13] clause 5.2.48F	
allow-private-call-participation	"true"	Indicates whether the MCPTT user is allowed to participate in MCPTT private calls that they are invited to	TS 24.483 [13] clause 5.2.48G	
allow-override-of-transmission	"true"	Indicates whether the MCPTT user is authorised to override transmission in a MCPTT private call	TS 24.483 [13] clause 5.2.48H	
allow-manual-off-network-switch	"true"	Indicates whether the MCPTT user is authorised to manually switch to off-network operation while in on-network operation	TS 24.483 [13] clause 5.2.48I	
anyExt				
allow-request-private-call-call-back	"true"	Indicates whether the MCPTT user is allowed to request a private call call-back	TS 24.483 [13] clause 5.2.48P	
allow-cancel-private-call-call-back	"true"	Indicates whether the MCPTT user is allowed to cancel an outstanding private call call-back request	TS 24.483 [13] clause 5.2.48Q	
allow-request-remote-initiated-ambient-listening	"true"	Indicates whether the MCPTT user is allowed to request a remote initiated ambient listening call	TS 24.483 [13] clause 5.2.48R	
allow-request-locally-initiated-ambient -listening	"true"	Indicates whether the MCPTT user is allowed to request a locally initiated ambient listening call	TS 24.483 [13] clause 5.2.48S	
allow-request-first-to-answer-call	"true"	Indicates whether the MCPTT user is authorised to request a first to answer call	TS 24.483 [13] clause 5.2.48T	

Derivation Path: TS 24.484 [14] clause 8.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
allow-request-remote-init-private-call	"true"	Indicates whether the MCPTT user is authorised to request remotely initiated private calls	TS 24.483 [13] clause 5.2.48 W1	
allow-request-remote-init-group-call	"true"	Indicates whether the MCPTT user is authorised to request a remotely initiated group call	TS 24.483 [13] clause 5.2.48W2	
allow-query-functional-alias-other-user	"true"	Indicates whether the MCPTT user is authorised to query the functional alias(es) activated by another MCPTT user	TS 24.483 [13] clause 5.2.48 W8	
allow-takeover-functional-alias-other-user	"true"	Indicates whether he MCPTT user is authorised to take over the functional alias(es) previously activated by another MCPTT user	TS 24.483 [13] clause 5.2.48 W9	
allow-location-info-when-talking	"false"	When set to "true" the MCPTT user is authorised to send its location information when it is requesting the floor. When set to "false" the MCPTT user is not authorised to send its location information when it is requesting the floor.	TS 24.483 [13] clause 5.2.48 W10	

5.5.8.4 MCPTT Service Configuration

The structure of a user profile document is specified in TS 24.484 [14] clause 8.4, single MCPTT group configuration parameters are defined in TS 24.483 [13] clause 7.2.

Table 5.5.8.4-1: MCPTT Service Configuration Defaults

Derivation Path: TS 24.484 [14], clause 8.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
service configuration				
domain attribute	px_MCX_DomainName _Organization_A	Mandatory attribute: domain name of the mission critical organization		
common				
min-length-alias	"2"	Indicates minimum length of an alphanumeric identifier (i.e., alias)	TS 24.483 [13] clause 7.2.9	
broadcast-group				
num-levels-group-hierarchy	"1"	Indicates the number of levels of group hierarchy for group-broadcast groups	TS 24.483 [13] clause 7.2.7	
num-levels-user-hierarchy	"1"	Indicates the number of levels of user hierarchy for user-broadcast groups	TS 24.483 [13] clause 7.2.8	
on-network				
emergency-call				
private-cancel-timeout	"PT30M"	30 minutes		
group-time-limit	"PT20M"	20 minutes		
private-call				
hang-time	"PT30S"	30 seconds		
max-duration-with-floor-control	"PT30S"	30 seconds		
max-duration-without-floor-control	"PT20M"	20 minutes		
num-levels-priority-hierarchy	10			
transmit-time				
time-limit	"PT30S"	30 seconds		
time-warning	"PT20M"	20 minutes		
hang-time-warning	"PT20M"	20 minutes		
floor-control-queue				
depth	5			
max-user-request-time	"PT20M"	20 minutes		
fc-timers-counters				
T1-end-of-rtp-media	"PT4S"	Default value Value in seconds	TS 24.380 [10] clause 11	
T3-stop-talking-grace	"PT3S"	Default value Value in seconds	TS 24.380 [10] clause 11	
T7-floor-idle	"PT2S"	Depends on the characteristic of the radio access network	TS 24.380 [10] clause 11	
T8-floor-revoke	"PT1S"	Default value Value in seconds	TS 24.380 [10] clause 11	
T11-end-of-RTP-dual	"PT4S"	Default value Value in seconds	TS 24.380 [10] clause 11	
T12-stop-talking-dual	"PT30S"	Default value Value in seconds	TS 24.380 [10] clause 11	
T15-conversation	"PT30S"	Default value Value in seconds	TS 24.380 [10] clause 11	
T16-map-group-to-bearer	"PT0.5S"	Default value Value in seconds	TS 24.380 [10] clause 11	
T17-unmap-group-to-bearer	"PT0.2S"	Default value Value in seconds	TS 24.380 [10] clause 11	
T20-floor-granted	"PT1S"	Default value Value in seconds	TS 24.380 [10] clause 11	
T55-connect	"PT2S"	Default value Value in seconds	TS 24.380 [10] clause 11	
T56-disconnect	"PT2S"	Default value Value in seconds	TS 24.380 [10] clause 11	
C7-floor-idle	10	Default value	TS 24.380 [10] clause 11	

Derivation Path: TS 24.484 [14], clause 8.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
C17-unmap-group-to-bearer	3	Default value	TS 24.380 [10] clause 11	
C20-floor-granted	3	Default value	TS 24.380 [10] clause 11	
C55-connect	3	Default value	TS 24.380 [10] clause 11	
C56-disconnect	3	Default value	TS 24.380 [10] clause 11	
signalling-protection				
confidentiality-protection	true			
integrity-protection	true			
protection-between-mcptt-servers				
allow-signalling-protection	true			
allow-floor-control-protection	true			
emergency-resource-priority				
resource-priority-namespace	"mcpttp"		RFC 8101 [45]	
resource-priority-priority	"8"		RFC 8101 [45]	
imminent-peril-resource-priority				
resource-priority-namespace	"mcpttp"		RFC 8101 [45]	
resource-priority-priority	"5"		RFC 8101 [45]	
normal-resource-priority				
resource-priority-namespace	"mcpttp"		RFC 8101 [45]	
resource-priority-priority	"1"		RFC 8101 [45]	
anyExt				
functional-alias-list				
functional-alias-entry[1]				
functional-alias	px_MCPTT_ID_FA_A			
max-simultaneous-activations	"1"			
allow-takeover	"true"			
mcptt-user-list				
entry[1]				
uri-entry	px_MCPTT_ID_User_A			
off-network				
emergency-call				
private-cancel-timeout	"PT5S"	5 seconds; Indicates timeout value for the cancellation of an in progress emergency for an MCPTT private call. Values: : 0-65535 s	TS 24.483 [13] clause 7.2.14	
group-time-limit	"PT5S"	5 seconds; Indicates time limit for an in progress MCPTT emergency call related to an MCPTT group. Values: 0-65535 s	TS 24.483 [13] clause 7.2.16	
private-call				
hang-time	"PT5S"	5 seconds; Indicates hang timer for private calls (with floor control). Values: 0-65535 s	TS 24.483 [13] clause 7.2.13	
max-duration-with-floor-control	"PT60S"	60 seconds; Indicates max private call (with floor control) duration. Values: 0-65535 s	TS 24.483 [13] clause 7.2.12	

Derivation Path: TS 24.484 [14], clause 8.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
num-levels-priority-hierarchy	"4"	Indicates the number of levels of hierarchy for floor control override in off-network. Values: 4-256	TS 24.483 [13] clause 7.2.17	
transmit-time				
time-limit	"PT60S"	60 seconds; Indicates transmit time limit from a single request to transmit in a group or private call. Values: 0-65535 s	TS 24.483 [13] clause 7.2.18	
time-warning	"PT50S"	50 seconds; Indicates configuration of warning time before time limit of transmission is reached (off-network). Values: 0-255 s	TS 24.483 [13] clause 7.2.19	
hang-time-warning	"PT4S"	4 seconds; Indicates configuration of warning time before hang time is reached (off-network). Values: Values: 0-255 s	TS 24.483 [13] clause 7.2.20	
default-prose-per-packet-priority				
mcptt-private-call-signalling	"1"	Indicates the default ProSe Per-Packet Priority (PPPP) value	TS 23.303 [68] TS 24.483 [13] clause 7.2.22	
mcptt-private-call-media	"1"	Indicates the default ProSe Per-Packet Priority (PPPP) value	TS 23.303 [68] TS 24.483 [13] clause 7.2.23	
mcptt-emergency-private-call-signalling	"8"	Indicates the default ProSe Per-Packet Priority (PPPP) value	TS 23.303 [68] TS 24.483 [13] clause 7.2.24	
mcptt-emergency-private-call-media	"8"	Indicates the default ProSe Per-Packet Priority (PPPP) value	TS 23.303 [68] TS 24.483 [13] clause 7.2.25	
allow-log-metadata	"true"	Indicates whether an MCPTT emergency group call is permitted on the MCPTT group	TS 24.483 [13] clause 7.2.26	

5.5.8.5   Void

5.5.8.6   MCVideo UE Configuration

The structure of a UE configuration document is specified in TS 24.484 [14] clause 9.2. Single MCVideo group configuration parameters are defined in TS 24.483 [13] clause 12.2.

Table 5.5.8.6-1: MCVideo UE Configuration Defaults

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.484 [14] clause 9.2				
mcvideo-UE-configuration				
domain attribute	px_MCX_DomainName _Organization_A	Mandatory attribute: domain name of the mission critical organization		
common				
Mcvideo-private-call				
Max-Simul-Call-N10	"2"	Indicates the maximum number of private calls		
MCVideo-Group-Call				
Max-Simul-Call-Nc4	"3"	Indicates the maximum number of simultaneous group calls		
Max-Simul-Trans-Nc5	"5"	Indicates the maximum number of transmissions in a group		
Prioritized-MCVideo-Group				
MCVideo-Group-Priority[1]				
MCVideo-Group-ID	px_MCVideo_Group_A _ID	Value is a "uri" attribute specified in OMA OMA-TS-XDM_Group-V1_1 that indicates the group id.		
group-priority-hierarchy	"7"	Indicates the requested presentation priority of group call; Values: 0-7 "7"=the top priority among groups		
on-network				
IPv6Preferred	"false"	Indicates whether IPv6 is preferred over IPv4 for on-network operation when the UE has both IPv4 and IPv6 host configuration.		
Relay-Service	"true"	Indicates the authorisation to use a relay service		
Relayed-MCVideo-Group[1]				
MCVideo-Group-ID	px_MCVideo_Group_A _ID	One allowed relayed MCVideo group		
Relay-Service-Code	"123456"	Identifies a connectivity service the ProSe UE-to-Network Relay provides to Public Safety applications; 24-bit value	TS 23.303 [68]	

5.5.8.7 MCVideo User Profile

The structure of a user profile document is specified in TS 24.484 [14] clause 9.3. Single MCVideo group configuration parameters are defined in TS 24.483 [13] clause 13.2.

Table 5.5.8.7-1: MCVideo User Profile Defaults

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.484 [14], clause 9.3				
mcvideo-user-profile				
XUI-URI attribute	"sip:" & px_MCVideo_ID_User_A	same as the XUI value of the Document URI		
user-profile-index attribute	"42"	value arbitrarily selected		
Status	"true"	MCVideo user profile is enabled		
ProfileName	"mcvideo-user-profile-" & user-profile-index & ".xml"	name of the user profile document; user-profile-index is the value of the user-profile-index attribute	TS 24.483 [13] clause 13.2.3;	
Common				
index attribute	"0"	Index for the particular MCVideo user profile		
MCVideoUserID		Indicates an MCVideo user identity (MCVideo ID) which is a globally unique identifier within the MCVideo service that represents the MCVideo user	TS 24.483 [13] clause 13.2.7	
index attribute	"0"			
uri-entry	px_MCVideo_ID_User_A	MCVideo user identity (MCVideo ID) which is a globally unique identifier within the MCVideo service that represents the MCVideo user		
UserAlias				
alias-entry	px_MCVideo_User_A_Alias	Alphanumeric aliases of MCVideo user	TS 24.483 [13] clause 13.2.11	
ParticipantType	px_MCX_User_A_ParticipantType	The functional category of the participant (e.g., first responder, second responder, dispatch, dispatch supervisor), typically defined by the MCVideo administrators.	TS 24.483 [13] clause 13.2.15	
MissionCriticalOrganization	px_MCX_DomainName_Organization_A	Indicates the organization an MCVideo user belongs to	TS 24.483 [13] clause 13.2.16	
PrivateCall				
PrivateCallList				
PrivateCallOnNetwork[1]				
PrivateCallURI				
index attribute	0			
uri-entry	px_MCVideo_ID_User_B			
display-name	"User B Name"			
PrivateCallKMSURI				
uri-entry	""	According to TS 24.484 [14] if the entry element is empty, the KMS URI present in the MCS initial configuration document is used		
PrivateCallOnNetwork[2]				
PrivateCallURI				
index attribute	1			

Derivation Path: TS 24.484 [14], clause 9.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
uri-entry	px_MCVideo_ID_User_C			
display-name	"User C Name"			
PrivateCallKMSURI				
uri-entry	""	According to TS 24.484 [14] if the entry element is empty, the KMS URI present in the MCS initial configuration document is used		
PrivateCallOffNetwork	not present			
EmergencyCall				
MCVideoPrivateRecipient				
entry				
entry-info attribute	"UsePreConfigured"			
index attribute	"0"			
uri-entry	px_MCVideo_ID_User_B			
display-name	"User B Name"			
ProSeUserID-entry				
index attribute	"0"			
DiscoveryGroupID	'123456'O			
User-Info-ID	'555555555555'O			
MCVideo-group-call				
MaxSimultaneousCallsN6	3			
EmergencyCall				
MCVideoGroupInitiation				
entry				
entry-info attribute	"UseCurrentlySelectedGroup"			
index attribute	"0"			
uri-entry	px_MCVideo_Group_A_ID			
display-name	px_MCVideo_Group_A_Name			
ImminentPerilCall				
MCVideoGroupInitiation				
entry				
entry-info attribute	"UseCurrentlySelectedGroup"			
index attribute	"0"			
uri-entry	px_MCVideo_Group_A_ID			
display-name	px_MCVideo_Group_A_Name			
EmergencyAlert				
MCVideoGroupInitiation				
entry				
index attribute	"0"			
entry-info attribute	"UseCurrentlySelectedGroup"			
uri-entry	px_MCVideo_Group_A_ID			
display-name	px_MCVideo_Group_A_Name			
Priority	10			
OnNetwork				
index	"1"			
MCVideoGroupInfo				
MCVideo-Group-ID	px_MCVideo_Group_A_ID			
GMS-Serv-Id	tsc_MCX_GMS_Hostname			

Derivation Path: TS 24.484 [14], clause 9.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
IdMS-Token-Endpoint	"https://" & px_MCX_IdMS_token_IPAddress & ":" & px_MCX_IdMS_token_Port & tsc_MCX_IdMS_token_UriPath	Identity management server token endpoint identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.41A	IPv4
	"https://[" & px_MCX_IdMS_token_IPAddress & "]:" & px_MCX_IdMS_token_Port & tsc_MCX_IdMS_token_UriPath	Identity management server token endpoint identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.41A	IPv6
RelativePresentationPriority	"7"		TS 24.483 [13] clause 13.2.51	
GroupKMSURI	tsc_MCX_KMS_Hostname			
MaxAffiliationsN2	"10"		TS 24.483 [13] clause 13.2.67	
PrivateEmergencyAlert			TS 24.483 [13] clause 13.2.87	
entry				
entry-info attribute	"UsePreConfigured"			
index attribute	"0"			
uri-entry	px_MCVideo_ID_User_B			
display-name	"User B Name"			
RemoteGroupSelectionURIList			TS 24.483 [13] clause 13.2.87	
entry[1]	px_MCVideo_ID_User_A			
entry[2]	px_MCVideo_ID_User_B			
entry[3]	px_MCVideo_ID_User_C			
anyExt	not present			
OffNetwork				
index	"1"			
MCVideoGroupInfo				
MCVideo-Group-ID	px_MCVideo_Group_A_ID			
GMS-App-Serv-Id	tsc_MCX_GMS_Hostname			
IdMS-Token-Endpoint	"https://" & px_MCX_IdMS_token_IPAddress & ":" & px_MCX_IdMS_token_Port & tsc_MCX_IdMS_token_UriPath	Identity management server token endpoint identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.41A	IPv4
	"https://[" & px_MCX_IdMS_token_IPAddress & "]:" & px_MCX_IdMS_token_Port & tsc_MCX_IdMS_token_UriPath	Identity management server token endpoint identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.41A	IPv6
RelativePresentationPriority	"7"		TS 24.483 [13] clause 13.2.51	
User-Info-Id	'555555555555'O		TS 24.483 [13] clause 13.2.102	
cp:ruleset				
cp:rule				

Derivation Path: TS 24.484 [14], clause 9.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
cp:id attribute	"rule1"			
cp:actions				
allow-presence-status	"true"			
allow-request-presence	"true"			
allow-query-availability-for-private-calls	"true"			
allow-enable-disable-user	"true"			
allow-enable-disable-UE	"true"			
allow-private-call	"true"			
allow-manual-commencement	"true"			
allow-automatic-commencement	"true"			
allow-force-auto-answer	"true"			
allow-failure-restriction	"true"			
allow-emergency-group-call	"true"			
allow-emergency-private-call	"true"			
allow-cancel-group-emergency	"true"			
allow-cancel-private-emergency-call	"true"			
allow-imminent-peril-call	"true"			
allow-cancel-imminent-peril	"true"			
allow-activate-emergency-alert	"true"			
allow-cancel-emergency-alert	"true"			
allow-offnetwork	"true"			
allow-imminent-peril-change	"true"			
allow-private-call-media-protection	"true"			
allow-request-affiliated-groups	"true"			
allow-request-to-affiliate-other-users	"true"			
allow-recommend-to-affiliate-other-users	"true"			
allow-private-call-to-any-user	"true"			
allow-regroup	"true"			
allow-private-call-participation	"true"			
allow-manual-off-network-switch	"true"			
allow-off-network-group-call-change-to-emergency	"true"			
allow-revoke-transmit	"true"			
allow-create-group-broadcast-group	"true"			
allow-create-user-broadcast-group	"true"			
anyExt				
allow-request-remote-initiated-ambient-viewing	"true"			
allow-request-locally-initiated-ambient-viewing	"true"			

Condition	**Explanation**
IPv4	IP address is IPv4 address
IPv6	IP address is IPv6 address

5.5.8.8 MCVideo Service Configuration

The structure of a service configuration document is specified in TS 24.484 [14] clause 8.4. Single MCVideo group configuration parameters are defined in TS 24.483 [13] clause 14.2.

Table 5.5.8.8-1: MCVideo Service Configuration Defaults

Table 5.5.8.8-1: MCVideo Service Configuration Defaults

Derivation Path: TS 24.484 [14], clause 9.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
service configuration				
domain attribute	px_MCX_DomainName _Organization_A	Mandatory attribute: domain name of the mission critical organization		
Common				
min-length-alias	"2"	Indicates minimum length of an alphanumeric identifier (i.e., alias)		
broadcast-group				
num-levels-group-hierarchy	"1"	Indicates the number of levels of group hierarchy for group-broadcast groups		
num-levels-user-hierarchy	"1"	Indicates the number of levels of user hierarchy for user-broadcast groups		
on-network				
signalling-protection				
confidentiality-protection	"true"			
integrity-protection	"true"			
protection-between-mcvideo-servers				
allow-signalling-protection	"true"			
allow-transmission-control-protection	"true"			
emergency-resource-priority				
resource-priority-namespace	"mcpttp"	MCVideo uses the MCPTT namespace values of RFC 8101 [45]	RFC 8101 [45]	
resource-priority-priority	"7"		RFC 8101 [45]	
imminent-peril-resource-priority				
resource-priority-namespace	"mcpttp"	MCVideo uses the MCPTT namespace values of RFC 8101 [45]	RFC 8101 [45]	
resource-priority-priority	"4"		RFC 8101 [45]	
normal-resource-priority				
resource-priority-namespace	"mcpttp"	MCVideo uses the MCPTT namespace values of RFC 8101 [45]	RFC 8101 [45]	
resource-priority-priority	"0"		RFC 8101 [45]	
off-network				
default-prose-per-packet-priority				
mcvideo-private-call-signalling	"1"	Indicates the default ProSe Per-Packet Priority (PPPP) value		
mcvideo-private-call-media	"1"	Indicates the default ProSe Per-Packet Priority (PPPP) value		
mcvideo-emergency-private-call-signalling	"8"	Indicates the default ProSe Per-Packet Priority (PPPP) value		
mcvideo-emergency-private-call-media	"8"	Indicates the default ProSe Per-Packet Priority (PPPP) value		
private-call				
mcvideo-max-duration	"600"	Value in seconds	TS 24.483 [13] clause 14.2.17	

Derivation Path: TS 24.484 [14], clause 9.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
num-levels-priority-hierarchy	"4"		TS 24.483 [13] clause 14.2.18	

5.5.8.9 Void

5.5.8.10 MCData UE Configuration

The structure of a UE configuration document is specified in TS 24.484 [14] clause 10.2. Single MCVideo group configuration parameters are defined in TS 24.483 [13] clause 9.2.

Table 5.5.8.10-1: MCData UE Configuration Defaults

Derivation Path: TS 24.484 [14] clause 10.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcdata-UE-configuration				
domain attribute	px_MCX_DomainName_Organization_A	Mandatory attribute: domain name of the mission critical organization		
common				
short-data-service		Contains an integer indicating the maximum number of simultaneous SDS transactions (Nc4) allowed for an MCData UE for on-network or off-network group SDS	TS 24.483 clause 9.2.8	
Max-Simul-SDS-Txns-Nc4	"2"	Indicates the maximum number of SDS Transactions	TS 24.483 [13] clause 10.2	
SDS-Presentation-Priority			TS 24.483 clause 9.2.8	
MCData-Group-Priority				
MCData-Group-ID	px_MCData_Group_A_ID	Value is a "uri" attribute specified in OMA OMA-TS-XDM_Group-V1_1 that indicates the group id.	TS 24.483 [13] clause 10.2	
group-priority-hierarchy	"7"	Indicates the requested presentation priority of group call; Values: 0-7 "7"=the top priority among groups	TS 24.483 [13] clause 9.2.11, 10.2	
File distribution				
Max-Simul-FD-Txns-Nc4	"4"	Contains an integer indicating the maximum number of simultaneous FD transactions (Nc4) allowed for an MCData UE for on-network or off-network group FD	TS 24.483 clause 9.2.12	
FD-Presentation-Priority		contains a list of <MCData-Group-Priority> elements that contains the following elements shown below.	TS 24.483 clause 9.2.13	
MCDATA-Group-Priority				
MCDATA-Group-ID	px_MCData_Group_A_ID	Identifies a MCData group	TS 24.483 clause 9.2.15	
group-priority-hierarchy	"7"	Contains an integer that identifies the relative priority level of that MCData group with 0 being the lowest priority and 255 being the highest priority	TS 24.483 [13] clause 9.2.16, 10.2	
conversation-management				
Conversation-Presentation-Priority				
MCData-Group-Priority				
MCData-Group-ID	px_MCData_Group_A_ID	Identifies a MCData group	TS 24.483 clause 9.2.15	
group-priority-hierarchy	"7"	Indicates the requested presentation priority of conversation management transactions	TS 24.483 clause 9.2.16	

Derivation Path: TS 24.484 [14] clause 10.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
transmission-control				
Max-Simul-Data-Transmissions-Nc4	"3"	Indicates the maximum number of simultaneous data transmissions.	TS 24.483 clause 9.2.21	
Max-Data-Transmissions-In-Group-Nc5	"3"	Indicates the maximum number of simultaneous data transmissions.	TS 24.483 clause 9.2.22	
Data-Presentation-Priority		lindicates the requested presentation priority of data received.	TS 24.483 clause 9.2.23	
MCData-Group-Priority				
MCData-Group-ID	px_MCData_Group_A_ID			
group-priority-hierarchy	"7"	Indicates the requested presentation priority of data received.	TS 24.483 clause 9.2.26	
reception-control				
Max-Simul-Data_Reception-Nc4	"3"	Indicates the maximum number of simultaneous data receptions.		
Max-Simul-Data_Receptions-In-Group-Nc5	"5"	Indicates the maximum number of data receptions in a group.		
on-network				
IPv6Preferred	"false"	Indicates whether IPv6 is preferred over IPv4 for on-network operation when the UE has both IPv4 and IPv6 host configuration.	TS 24.483 [13] clause 9.2.31, 10.2	
Relay-Service	"true"	Indicates the authorisation to use a relay service. NOTE: When the <Relay-Service> element is set to "false" a list of <Relayed-MCData-Group> elements is not needed.	TS 24.483 [13] clause 9.2.32, 10.2	

5.5.8.11   MCData User Profile

The structure of a user profile document is specified in TS 24.484 [14] clause 10.3.2.1. Single MCData configuration parameters are defined in TS 24.483 [13] clause 10.2.

Table 5.5.8.11-1: MCData User Profile Defaults

Derivation Path: TS 24.484 [14], clause 10.3.2.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcdata-user-profile				
XUI-URI attribute	"sip:" & px_MCData_ID_User_A	same as the XUI value of the Document URI		
user-profile-index attribute	"49"	value arbitrarily selected		
Status	"true"	MCData user profile is enabled		
ProfileName	"mcdata-user-profile-" & user-profile-index & ".xml"	name of the user profile document; user-profile-index is the value of the user-profile-index attribute	TS 24.483 [13] clause 5.2.7B	
Common				
index attribute	"0"	Index for the particular MCData user profile	TS 24.483 [13] clause 10.2.6	
UserAlias				
alias-entry	px_MCData_User_A_Alias	Alphanumeric aliases of MCData user	TS 24.483 [13] clause 10.2.11	
MCDATAUserID				
entry	px_MCData_ID_User_A			
MissionCriticalOrganization	px_MCX_DomainName_Organization_A	Indicates the organization an MCData user belongs to	TS 24.483 [13] clause 10.2.16	
FileDistribution				
FD-cancel-List-Entry				
MCData-ID	px_MCData_ID_User_A	Contains the MCData user identity (MCData ID) of an MCData user that the configured MCData user is authorised to initiate a one-to-one communication, and corresponds to the "MCDataID" element of clause 10.2.16E in 3GPP TS 24.483 [4];	TS 24.483 clause 10.2.21A	
MCData_ID_KMSURI	tsc_MCX_KMS_Hostname	Contains the KMS URI for the security domain of the MCData user identity (MCData ID) of the MCData user and corresponds to the "MCDataUserIDKMSURI" element of clause 10.2.9A in 3GPP TS 24.483 [4]. If this parameter is absent, the KMS URI is identified by the <kms-sec> element of the <App-Server-Info> of the MCS UE initial configuration document as specified in clause 7.2.2.1	TS 24.483 [13] clause 10.2.21A	
TxRxControl				

Derivation Path: TS 24.484 [14], clause 10.3.2.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MaxData1To1	"65535"	Indicates the maximum amount of data (in megabytes) that an MCData user can transmit in a single request during one-to-one communication.	TS 24.483 [13] clause 10.2.25	
MaxTime1to1	"65535"	Indicates the maximum amount of time that an MCData user can transmit for in a single request during one-to-one communication.	TS 24.483 [13] clause 10.2.26	
TxReleaseList	px_MCData_ID_User_A	Indicates an MCData ID of an MCData user that this MCData user is allowed to request release of an ongoing transmission	TS 24.483 [13] clause 10.2.30	
GroupEmergencyAlert		Indicates the MCData group recipient for an MCData emergency Alert	TS 24.483 [13] clause 10.2.38	
entry	px_MCData_ID_User_A			
OnNetwork				
index attribute	"0"	Is of type "token" and is included within some elements for uniqueness purposes, and does not appear in the user profile configuration managed object specified in 3GPP TS 24.483 [4].		
MCDataGroupInfo				
MCData-Group-ID	px_MCData_Group_A_ID	Indicates the MCData group ID for the on-network MCData group that the MCData user is allowed to use.	TS 24.483 [13] clause 10.2.47	
GMS-App-Serv-ID	tsc_MCX_GMS_Hostname	URI of the group management server hosting the on-network MCData group identified by the <MCData-Group-ID> element	TS 24.483 [13] clause 10.2.51	
IdMS-Token-Endpoint	"https://" & px_MCX_IdMS_token_IPAddress & ":" & px_MCX_IdMS_token_Port & tsc_MCX_IdMS_token_UriPath	Identity management server token endpoint identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.41A	IPv4
	"https://[" & px_MCX_IdMS_token_IPAddress & "]:" & px_MCX_IdMS_token_Port & tsc_MCX_IdMS_token_UriPath	Identity management server token endpoint identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.41A	IPv6
GroupKMSURI	tsc_MCX_KMS_Hostname		TS 24.483 [13] clause 10.2.54A	
Relativepresentation Priority	"7"			

Derivation Path: TS 24.484 [14], clause 10.3.2.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MaxAffiliations	"10"	contains an integer value between 0 and 255 indicating the presentation priority of the off-network group relative to other off-network groups and off-network users	TS 24.483 clause 10.2.71	
One-To-One-EmergencyAlert		Indicates the MCData user recipient for an on-network MCData emergency one-to-one alert	TS 24.483 clause 10.2.91	
entry	px_MCData_ID_User_A	Indicates the name of the MCData user recipient for an on-network MCData emergency one-to-one alert	TS 24.483 clause 10.2.92	
anyExt				
MCDataContentServerURI	"http://" & tsc_MCData_MSF_Hostname & "/userA/files"	absolute URI associated with media storage function of MCData content server	TS 24.483 clause 10.2.97 A	
FunctionalAliasList			TS 24.483 clause 10.2.97 B	
entry[1]				
uri-entry[1]	px_MCData_ID_FA_A			
anyExt				
LocationCriteriaForActivation				
EnterSpecificArea				
EllipsoidArcArea				
Center				
latitude	"3331608"	Latitude of 35.74428 degrees encoded according to TS 23.032 [65] clause 6.1		
longitude	"6510401"	Longitude of 139.69806 degrees encoded according to TS 23.032 [65] clause 6.1		
Radius	"10"	Radius of 50 meters encoded according to TS 23.032 [65] clause 6.6		
OffsetAngle	"0"	0 degrees		
IncludedAngle	"179"	Full circle: 360 degrees encoded according to TS 23.032 [65] clause 6.7		
ExitSpecificArea				
EllipsoidArcArea				
Center				
latitude	"3331608"	Latitude of 35.74428 degrees encoded according to TS 23.032 [65] clause 6.1		
longitude	"6510349"	Longitude of 139.69695 degrees encoded according to TS 23.032 [65] clause 6.1		

Derivation Path: TS 24.484 [14], clause 10.3.2.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Radius	"10"	Radius of 50 meters encoded according to TS 23.032 [65] clause 6.6		
OffsetAngle	"0"	0 degrees		
IncludedAngle	"179"	Full circle: 360 degrees encoded according to TS 23.032 [65] clause 6.7		
LocationCriteriaForDeactivation				
EnterSpecificArea				
EllipsoidArcArea				
Center				
latitude	"3331608"	Latitude of 35.74428 degrees encoded according to TS 23.032 [65] clause 6.1		
longitude	"6510349"	Longitude of 139.69695 degrees encoded according to TS 23.032 [65] clause 6.1		
Radius	"10"	Radius of 50 meters encoded according to TS 23.032 [65] clause 6.6		
OffsetAngle	"0"	0 degrees		
IncludedAngle	"179"	Full circle: 360 degrees encoded according to TS 23.032 [65] clause 6.7		
ExitSpecificArea				
EllipsoidArcArea				
Center				
latitude	"3331608"	Latitude of 35.74428 degrees encoded according to TS 23.032 [65] clause 6.1		
longitude	"6510401"	Longitude of 139.69806 degrees encoded according to TS 23.032 [65] clause 6.1		
Radius	"10"	Radius of 50 meters encoded according to TS 23.032 [65] clause 6.6		
OffsetAngle	"0"	0 degrees		
IncludedAngle	"179"	Full circle: 360 degrees encoded according to TS 23.032 [65] clause 6.7		
manual-deactivation-not-allowed-if-location-criteria-met	"false"		TS 24.483 [13] clause 10.2.97 B3D	
MessageStoreHostname	tsc_MCData_MSF_Hostname	hostname identifying the message store function	TS 24.483 clause 10.2.97 E	
OffNetwork				
index attribute	"0"			
MCDataGroupInfo				

Derivation Path: TS 24.484 [14], clause 10.3.2.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MCData-Group-ID	px_MCData_Group_A_ID	Indicates the MCData group ID for the off-network MCData group that the MCData user is allowed to use.	TS 24.483 [13] clause 10.2.10 3	
GMS-App-Serv-Id	tsc_MCX_GMS_Hostname			
IdMS-Token-Endpoint	"https://" & px_MCX_IdMS_token_IPAddress & ":" & px_MCX_IdMS_token_Port & tsc_MCX_IdMS_token_UriPath	Identity management server token endpoint identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.41A	IPv4
	"https://[" & px_MCX_IdMS_token_IPAddress & "]:" & px_MCX_IdMS_token_Port & tsc_MCX_IdMS_token_UriPath	Identity management server token endpoint identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.41A	IPv6
Group-KMSURI	tsc_MCX_KMS_Hostname		TS 24.483 [13] clause 10.2.110A	
RelativePresentationPriority	"7"	When it appears in: the <MCDataGroupInfo> element of the <OnNetwork> element, contains an integer value between 0 and 255 indicating the presentation priority of the on-network group relative to other on-network groups and on-network users, and corresponds to the "PresentationPriority" element of clause 10.2.55 in 3GPP TS 24.483 [4]; and the <MCDataGroupInfo> element of the <OffNetwork> element, contains an integer value between 0 and 255 indicating the presentation priority of the off-network group relative to other off-network groups and off-network users, and corresponds to the "PresentationPriority" element of clause 10.2.111 in 3GPP TS 24.483 [4];		
User-Info-Id	'555555555555'O			
ruleset				
rule				
actions				
allow-create-delete-user-alias	"true"			

Derivation Path: TS 24.484 [14], clause 10.3.2.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
allow-create-group-broadcast- group	"true"			
allow-create-user-broadcast-group	"true"			
allow-transmit-data	"true"			
allow-request-affiliated-groups	"true"			
allow-request-to-affiliate-other-users	"true"			
allow-recommend-to-affiliate-other-users	"true"			
allow-regroup	"true"			
allow-presence-status	"true"			
allow-request-presence	"true"			
allow-activate-emergency-alert	"true"			
allow-cancel-emergency-alert	"true"			
allow-cancel-emergency-alert-any-user	"true"			
allow-enable-disable-user	"true"			
allow-enable-disable-UE	"true"			
allow-off-network-manual-switch	"true"			
allow-off-network	"true"			
anyExt				
allow-query-functional-alias-other-user	"true"			
allow-takeover-functional-alias-other-user	"true"			
allow-one-to-one-communication-from-any-user	"true"			

Condition	Explanation
IPv4	IP address is IPv4 address
IPv6	IP address is IPv6 address

5.5.8.12   MCData Service Configuration

The structure of a service configuration document is specified in TS 24.484 [14] clause 10.4.2.1. Single MCData group configuration parameters are defined in TS 24.483 [13] clause 11.2.

Table 5.5.8.12-1: MCData Service Configuration Defaults

Derivation Path: TS 24.484 [14], clause 10.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
service configuration				
domain attribute	px_MCData_User_A_Organization	Mandatory attribute: domain name of the mission critical organization		
on-network				
tx-and-rx-control				
max-data-size-sds-bytes	"10000000"	The maximum data that the originating client can send in an SDS message		
max-payload-size-sds-cplane-bytes	"1000"	The maximum payload data that the originating client can send in an SDS message over C-plane		
max-data-size-fd-bytes	"100000000"	The maximum data that the originating client can send in an FD message		
max-data-size-auto-recv-bytes	"10000000"	The maximum data that the server can send to the terminating client without requesting the user to indicate a present need for the data		
signalling-protection				
confidentiality-protection	"true"	Indicating whether confidentiality protection of MCData signalling is enabled or disabled between the MCData client and MCData server		
integrity-protection	"true"	Indicating whether integrity protection of MCData signalling is enabled or disabled between the MCData client and MCData server		
protection-between-mcdata-servers				
allow-signalling-protection	"true"	Indicating whether protection of MCData signalling is enabled between MCData servers		
file-availability				
default-file-availability	"10000000"	The default time for which a file is available on the server for download, if a explicit time period is not requested by the originating client		
max-file-availability	"10000000"	The maximum time for which a file can be made available on the server for download		
anyExt				
functional-alias-list				
functional-alias-entry[1]				
functional-alias	px_MCData_ID_FA_A			

Derivation Path: TS 24.484 [14], clause 10.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
max-simultaneous-activations	"1"			
allow-takeover	"true"			
mcdata-user-list				
entry[1]				
uri-entry	px_MCData_ID_User_A			
functional-alias-priority	"1"			
off-network				
default-prose-per-packet-priority				
mcdata-one-to-one-call-signalling	"1"		TS 24.483 [13] clause 11.2.11	
mcdata-one-to-one-call-media	"1"		TS 24.483 [13] clause 11.2.12	

5.5.9 Default miscellaneous messages and other information elements

5.5.9.1 MIKEY-SAKKE I_MESSAGE

- CSK distribution (MIKEY-SAKKE sent by the UE)

Table 5.5.9.1-1: MIKEY-SAKKE I_MESSAGE (CSK distribution by the UE)

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
MIKEY Common Header {	Any		
version	'00000001'B		
Data Type	'00011010'B	SAKKE msg (26)	
Next payload	Identifier for the next payload (NOTE 1)		
V	'0'B		
PRF func	'0000001'B	PRF-HMAC-SHA-256	
CSB ID	Any value but 4 most significant bits set to '0010'B	32 bit CSK-ID: the 4 most significant bits indicate the purpose of the key, the other 28-bits shall be randomly generated (TS 33.180 [94] clause 5.2.2 and E.6.11)	
#CS	'00000001'B or '00000000'B	Number of crypto sessions in the CS ID map info: if #CS is 0 the default security policies shall be applied (TS 33.180 [94] E.1.2)	
CS ID map type	2 if #CS > 0	GENERIC-ID	
	1 if #CS == 0	empty map	
CS ID map info {	Present only if #CS > 0		
CS ID	'00000110'B	CS ID of the crypto session: '6' for CSK use within MCPTT (TS 33.180 [94] E.4.2)	
Prot type	0	SRTP the security protocol to be used for the crypto session	
S	Any value	S flag to indicate whether the ROC and SEQ fields are provided ('1') or if they are omitted ('0')	
#P	1	the number of security policies provided for the crypto session	
Ps {		lists the policies for the crypto session	
Policy_no_1	Any value	a policy_no that corresponds to the policy_no of a SP payload	
}			

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
Session Data Length	Length of Session Data (in bytes)	16 bits the length of Session Data (in bytes). For the Prot type SRTP, Session Data MAY be omitted in the initial message (length = 0), but it MUST be provided in the response message.	
Session Data {	Present if Session Data Length > 0	session data for the crypto session	
SSRC	Any value	specifies the SSRC that MUST be used for the crypto session	
ROC	Any value if S flag is set, not present otherwise	current/initial rollover counter. If the session has not started, this field is set to '0'	
SEQ	Any value if S flag is set, not present otherwise	current/initial sequence number	
}			
SPI Length	Length of the SPI	SPI MAY be omitted in the initial message (length = 0), but it has to be provided in the response message	
SPI	Any value if present	the SPI (or MKI) corresponding to the session key to (initially) be used for the crypto session. Other keys can be used.	
}			
}			
Timestamp Payload (T) {		Addressed by '00000101'B in the 'Next payload' field of the previous payload	
Next payload	Identifier for the next payload (NOTE 1)		
TS Type	'00000000'B	NTP-UTC (0): 64-bits	
TS Value	Any value	64bit UTC value representing the number of seconds since 0h on 1 January 1900 with respect to the Coordinated Universal Time (UTC)	
}			

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
RAND Payload {		Addressed by '00001011'B in the 'Next payload' field of the previous payload	
Next payload	Identifier for the next payload (NOTE 1)		
RAND len	'00010000'B	At least 16 Bytes	
RAND	128-bit random number	128-bit random number	
}			
IDRi payload {		Addressed by '00001110'B in the 'Next payload' field of the previous payload	
Next payload	Identifier for the next payload (NOTE 1)		
ID Role	1	Initiator (IDRi)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	px_MCPTT_ID_User_A	MCPTT ID See TS 33.180 [94] clause E.4.1	MCPTT
	px_MCVideo_ID_User_A	MCVideo ID See TS 33.180 [94] clause E.4.1	MCVIDEO
	px_MCData_ID_User_A	MCData ID See TS 33.180 [94] clause E.4.1	MCDATA
}			
IDRr payload {		Addressed by '00001110'B in the 'Next payload' field of the previous payload	
Next payload	Identifier for the next payload (NOTE 1)		
ID Role	2	Responder (IDRr)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCPTT_PublicServiceId_A		MCPTT
	tsc_MCVideo_PublicServiceId_A		MCVIDEO
	tsc_MCData_PublicServiceId_A		MCDATA
}			
IDRkmsi payload {		Addressed by '00001110'B in the 'Next payload' field of the previous payload	
Next payload	Identifier for the next payload (NOTE 1)		
ID Role	6	Initiator's KMS (IDRkmsi)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCX_KMS_Hostname	KMS of the initiating user (UE)	
}			

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
IDRkmsr payload {		Addressed by '00001110'B in the 'Next payload' field of the previous payload	
Next payload	Identifier for the next payload (NOTE 1)		
ID Role	7	Responder's KMS (IDRkmsr)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCX_KMS_Hostname	KMS of the responder (MCX domain)	
}		Addressed by '00001010'B in the 'Next payload' field of the previous payload	
Security Properties payload {	Present if #CS > 0	If not present (#CS == 0) then the default security profile defined in Annex E.4.2 of TS 33.180 [94] shall be used	
Next payload	Identifier for the next payload (NOTE 1)		
Policy no	same as Policy_no_1 in the CS ID map info of the header payload		
Prot type	0	SRTP	
Policy param length			
Policy param {			
{			
Type	0	Encryption Algorithm	
length			
value	6	AES-GCM	
}			
{			
Type	1	Session encryption key length	
length			
value	16	16 octets	
}			
{			
Type	4	Session salt key length	
length			
value	12	12 octets	
}			
{			
Type	5	SRTP PRF	
length			
value	0	AES-CM	
}			
{			
Type	6	Key derivation rate	
length			
value	0	No session key refresh.	

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
}			
{			
Type	20	AEAD authentication tag length	
length			
value	16	16 octets	
}			
}			
}			
SAKKE payload {		Addressed by '00011010'B in the 'Next payload' field of the previous payload	
Next payload	Identifier for the next payload (NOTE 1)		
SAKKE params {	1	Parameter Set 1 according to RFC 6509 [23], Appendix A	
ID scheme	2	'3GPP MCX hashed UID' (33.180 [94] E.1.2)	
SAKKE data length	Length of SAKKE data (in bytes)		
SAKKE data	Encapsulated CSK	The CSK is encapsulated by using the public key (PubEncKey in KMS Certificate) and the UID generated from the MDSI of the MCX Domain (provided in IDRr)	
}			
SIGN (ECCSI) payload {		Addressed by '00000100'B in the 'Next payload' field of the previous payload	
S type	2	ECCSI signature	
S len	Length of the signature field (in bytes)	12 bits	
S data	Signature: Shall be validated by the SS	The signature shall be validated according to RFC 3830 [24] clause 5.3 using the algorithm according to RFC 6507 [98] clause 5.2.2 using the UID generated from the MC Service user ID associated with the initiating user (provided in IDRi payload).	
}			
NOTE 1: MIKEY payloads may occur in any order apart from the header payload which is always the first payload and the signature payload which is always the last payload			

- CSK distribution (MIKEY-SAKKE sent by the SS)

Table 5.5.9.1-1A: MIKEY-SAKKE I_MESSAGE (CSK download sent by the SS)

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
MIKEY Common Header {	Any		
version	'00000001'B		
Data Type	'00011010'B	SAKKE msg (26)	
Next payload	'00000101'B	Timestamp, T	
V	'0'B		
PRF func	'0000001'B	PRF-HMAC-SHA-256	
CSB ID	'0001xxxx ... xxxxxxxx'B	32 bit CSK-ID: the 4 most significant bits indicate the purpose of the key, CSK = 0010, the other 28-bits are randomly generated (TS 33.180 [94] clause 5.2.2 and E.6.11)	
#CS	'00000000'B	Number of crypto sessions in the CS ID map info: if #CS is 0 the default security policies shall be applied (TS 33.180 [94] E.1.2)	
CS ID map type	1	See TS 33.180 [94] E.1.2	
CS ID map info	Not present	Present only if #CS > 0	
}			
Timestamp Payload (T) {			
Next payload	'00001011'B		
TS Type	'00000000'B	NTP-UTC (0): 64-bits	
TS Value	Current system time	64bit UTC value representing the number of seconds since 1 January 1900 with respect to the Coordinated Universal Time (UTC)	
}			
RAND Payload {		Addressed by '00001011'B in the 'Next payload' field of the previous payload	
Next payload	'00001110'B		
RAND len	'00010000'B	At least 16 Bytes	
RAND	Random value arbitrarily selected by the SS	128-bit random number	
}			
IDRi payload {		Addressed by '00001110'B in the 'Next payload' field of the previous payload	

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
Next payload	'00001110'B		
ID Role	1	Initiator (IDRi)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCPTT_PublicServiceId_A		MCPTT
	tsc_MCVideo_PublicServiceId_A		MCVIDEO
	tsc_MCData_PublicServiceId_A		MCDATA
}			
IDRr payload {		Addressed by '00001110'B in the 'Next payload' field of the previous payload	
Next payload	'00001110'B		
ID Role	2	Responder (IDRr)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	px_MCPTT_ID_User_A	MCPTT ID See TS 33.180 [94] clause E.4.1	MCPTT
	px_MCVideo_ID_User_A	MCVideo ID See TS 33.180 [94] clause E.4.1	MCVIDEO
	px_MCData_ID_User_A	MCData ID See TS 33.180 [94] clause E.4.1	MCDATA
}			
IDRkmsi payload {		Addressed by '00001110'B in the 'Next payload' field of the previous payload	
Next payload	'00001110'B		
ID Role	6	Initiator's KMS (IDRkmsi)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCX_KMS_Hostname	KMS of the initiating user (UE)	
}			
IDRkmsr payload {		Addressed by '00001110'B in the 'Next payload' field of the previous payload	
Next payload	'00011010'B		
ID Role	7	Responder's KMS (IDRkmsr)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCX_KMS_Hostname	KMS of the responder (MCX domain)	
}			

ETSI

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
Security Properties payload	Not present	If not present (#CS == 0) then the default security profile defined in Annex E.4.2 of TS 33.180 [94] shall be used	
SAKKE payload {		Addressed by '00011010'B in the 'Next payload' field of the previous payload	
Next payload	'00000100'B		
SAKKE params {	1	Parameter Set 1 according to RFC 6509 [23], Appendix A	
ID scheme	2	'3GPP MCX hashed UID' (33.180 [94] E.1.2)	
SAKKE data length	Length of SAKKE data (in bytes)		
SAKKE data	Encapsulated CSK	The CSK is encapsulated by using the public key (PubEncKey in KMS Certificate) and the UID generated from the MDSI of the MCX Domain (provided in IDRr)	
}			
SIGN (ECCSI) payload {		Addressed by '00000100'B in the 'Next payload' field of the previous payload	
S type	2	ECCSI signature	
S len	Length of the signature field (in bytes)	12 bits	
S data	Signature	The signature shall be validated according to RFC 3830 [24] clause 5.3 using the algorithm according to RFC 6507 [98] clause 5.2.2 using the UID generated from the ID associated with the initiating user (provided in IDRi payload).	
}			

-       Private call (MIKEY-SAKKE sent by the SS)

Table 5.5.9.1-2: MIKEY-SAKKE I_MESSAGE (Private call) by the SS

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	Value/remark	Comment	Condition
MIKEY Common Header {			
version	'00000001'B		
Data Type	'00011010'B	SAKKE msg (26)	
Next payload	'00000101'B	Next payload is timestamp	
V	'0'B		
PRF func	'0000001'B	PRF-HMAC-SHA-256	
CSB ID	'0001xxxx ... xxxxxxxx'B	32-bit PCK-ID The 4 most significant bits of the PCK-ID indicate the purpose of the PCK is to protect Private call communications, the other 28-bits are randomly generated	
#CS	'00000000'B	the number of crypto sessions in the CS ID map info.	
CS ID map type	1	empty map	
CS ID map Info	not present		
}			
Timestamp Payload (T) {			
Next payload	'00001011'B	Next payload is RAND	
TS Type	'00000000'B	NTP-UTC (0): 64-bits	
TS Value	Current system time	64bit UTC value representing the number of seconds since 0h on 1 January 1900 with respect to the Coordinated Universal Time (UTC)	
}			
RAND Payload {			
Next payload	'00001110'B	Next payload is IDRi	
RAND len	'00010000'B	16 Bytes RAND	
RAND	128-bit random number		
}			
IDRi payload {			
Next payload	'00001110'B	Next payload is IDRi	
ID Role	1	Initiator (IDRi)	
ID Type	0	URI	
ID len	Length of ID Data		
ID data	px_MCPTT_ID_User_B	MCPTT ID associated with the initiating user	MCPTT
	px_MCVideo_ID_User_B	MCVideo ID See TS 33.180 [94] clause E.4.1	MCVIDEO
	px_MCData_ID_User_B	MCData ID See TS 33.180 [94] clause E.4.1	MCDATA

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
}			
IDRr payload {			
Next payload	'00001110'B	Next payload is IDRkmsi	
ID Role	2	Responder (IDRr)	
ID Type	0		
ID len	Length of ID Data		
ID data	px_MCPTT_ID_User_A	MCPTT ID associated to the receiving user	MCPTT
	px_MCVideo_ID_User_A	MDSI of the MCVideo Domain	MCVIDEO
	px_MCData_ID_User_A	MDSI of the MCData Domain	MCDATA
}			
IDRkmsi payload {			
Next payload	'00001110'B	Next payload is IDRkmsr	
ID Role	6	Initiator's KMS (IDRkmsi)	
ID Type	0		
ID len	Length of ID Data		
ID data	tsc_MCX_KMS_Hostname	KMS of the initiating user	
}			
IDRkmsr payload {			
Next payload	'00011010'B	Next payload is SAKKE (26)	
ID Role	7	Responder's KMS (IDRkmsr)	
ID Type	0		
ID len	Length of ID Data		
ID data	tsc_MCX_KMS_Hostname	KMS of the responding user (UE)	
}			
SAKKE payload {			
Next payload	'00000100'B	Next payload is SIGN	
SAKKE params {	1	Parameter Set 1 according to RFC 6509 [23], Appendix A	
ID Scheme	2	'3GPP MCX hashed UID' (33.180 [94] E.1.2)	
SAKKE data length	Length of SAKKE data (in bytes)	16 bits	
SAKKE data	Encapsulated PCK	The PCK is encapsulated by using the public key (PubEncKey in KMS Certificate) and the UID generated from the MC Service user ID of the terminating user	
}			
SIGN (ECCSI) payload {			
S type	2	ECCSI signature	
S len	Length of the signature field (in bytes)	12 bits	

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
S data	Signature: In case of UL message the signature shall be validated by the SS	Signature created according to RFC 3830 [24] clause 5.2 using the algorithm according to RFC 6507 [98] clause 5.2.1 using the UID generated from the MC Service user ID of the initiating user	
}			

- Private call (MIKEY-SAKKE sent by the UE)

Table 5.5.9.1-2A: MIKEY-SAKKE I_MESSAGE (Private call) by the UE

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
MIKEY Common Header {			
version	'00000001'B		
Data Type	'00011010'B	SAKKE msg (26)	
Next payload	Identifier for the next payload (NOTE 1)		
V	'0'B		
PRF func	'0000001'B	PRF-HMAC-SHA-256	
CSB ID	'0001xxxx ... xxxxxxxx'B	32-bit PCK-ID The 4 most significant bits of the PCK-ID indicate the purpose of the PCK is to protect Private call communications, the other 28-bits are randomly generated	
#CS	'00000001'B or '00000000'B	Number of crypto sessions in the CS ID map info: if #CS is 0 the default security policies shall be applied (TS 33.180 [94] E.1.2)	
CS ID map type	2 if #CS > 0	GENERIC-ID	
	1 if #CS == 0	empty map	
CS ID map Info {	Present only if #CS > 0		
CS ID	'00000000'B or '00000001'B	CS ID of the crypto session: '0' for PCK use from initiatior or '1' for PCK use from receiver within MCPTT (TS 33.180 [94] E.3.3)	MCPTT
	'00000010'B or '00000011'B	CS ID of the crypto session: '2' for PCK use from initiatior or '3' for PCK use from receiver within MCVideo (TS 33.180 [94] E.3.3)	MCVIDEO
Prot type	0	SRTP the security protocol to be used for the crypto session	
S	Any value	S flag to indicate whether the ROC and SEQ fields are provided ('1') or if they are omitted ('0')	
#P	1	the number of security policies provided for the crypto session	
Ps {		lists the policies for the crypto session	

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
Policy_no_1	Any value	a policy_no that corresponds to the policy_no of a SP payload	
}			
Session Data Length	Length of Session Data (in bytes)	16 bits the length of Session Data (in bytes). For the Prot type SRTP, Session Data MAY be omitted in the initial message (length = 0), but it MUST be provided in the response message.	
Session Data {	Present if Session Data Length > 0	session data for the crypto session	
SSRC	Any value	specifies the SSRC that MUST be used for the crypto session	
ROC	Any value if S flag is set, not present otherwise	current/initial rollover counter. If the session has not started, this field is set to '0'	
SEQ	Any value if S flag is set, not present otherwise	current/initial sequence number	
}			
SPI Length	Length of the SPI	SPI MAY be omitted in the initial message (length = 0), but it MUST be provided in the response message	
SPI	Any value if present	the SPI (or MKI) corresponding to the session key to (initially) be used for the crypto session. Other keys can be used.	
}			
}			
Timestamp Payload (T) {		Addressed by '00000101'B in the 'Next payload' field of the previous payload	
Next payload	Identifier for the next payload (NOTE 1)		
TS Type	'00000000'B	NTP-UTC (0): 64-bits	

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
TS Value	Any value	64bit UTC value representing the number of seconds since 0h on 1 January 1900 with respect to the Coordinated Universal Time (UTC)	
}			
RAND Payload {		Addressed by '00001011'B in the 'Next payload' field of the previous payload	
Next payload	Identifier for the next payload (NOTE 1)		
RAND len	'00010000'B	16 Bytes RAND	
RAND	Any value	128-bit random number	
}			
IDRi payload {		Addressed by '00001110'B in the 'Next payload' field of the previous payload	
Next payload	Identifier for the next payload (NOTE 1)		
ID Role	1	Initiator (IDRi)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	px_MCPTT_ID_User_A	MCPTT ID associated with the initiating user	MCPTT
	px_MCVideo_ID_User_A	MCVideo ID See TS 33.180 [94] clause E.4.1	MCVIDEO
	px_MCData_ID_User_A	MCData ID See TS 33.180 [94] clause E.4.1	MCDATA
}			
IDRr payload {		Addressed by '00001110'B in the 'Next payload' field of the previous payload	
Next payload	Identifier for the next payload (NOTE 1)		
ID Role	2	Responder (IDRr)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	px_MCPTT_ID_User_B	MCPTT ID associated to the receiving user	MCPTT
	px_MCVideo_ID_User_B	MDSI of the MCVideo Domain	MCVIDEO
	px_MCData_ID_User_B	MDSI of the MCData Domain	MCDATA
}			
IDRkmsi payload {		Addressed by '00001110'B in the 'Next payload' field of the previous payload	

Field	Value/remark	Comment	Condition
Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Next payload	Identifier for the next payload (NOTE 1)		
ID Role	6	Initiator's KMS (IDRkmsi)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCX_KMS_Hostname	KMS of the initiating user (UE)	
}			
IDRkmsr payload {		Addressed by '00001110'B in the 'Next payload' field of the previous payload	
Next payload	Identifier for the next payload (NOTE 1)		
ID Role	7	Responder's KMS (IDRkmsr)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCX_KMS_Hostname	KMS of the responding user	
}		Addressed by '00001010'B in the 'Next payload' field of the previous payload	
Security Properties payload {	Present if #CS > 0	If not present (#CS == 0) then the default security profile defined in Annex E.4.2 of TS 33.180 [94] shall be used	
Next payload	Identifier for the next payload (NOTE 1)		
Policy no	same as Policy_no_1 in the CS ID map info of the header payload		
Prot type	0	SRTP	
Policy param length			
Policy param {			
{			
Type	0	Encryption Algorithm	
length			
value	6	AES-GCM	
}			
{			
Type	1	Session encryption key length	
length			
value	16	16 octets	
}			
{			
Type	4	Session salt key length	
length			
value	12	12 octets	
}			
{			
Type	5	SRTP PRF	
length			

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
value	0	AES-CM	
}			
{			
Type	6	Key derivation rate	
length			
value	0	No session key refresh.	
}			
{			
Type	20	AEAD authentication tag length	
length			
value	16	16 octets	
}			
}			
}			
SAKKE payload {		Addressed by '00011010'B in the 'Next payload' field of the previous payload	
Next payload	Identifier for the next payload (NOTE 1)		
SAKKE params {	1	Parameter Set 1 according to RFC 6509 [23], Appendix A	
ID Scheme	2	'3GPP MCX hashed UID' (33.180 [94] E.1.2)	
SAKKE data length	Length of SAKKE data (in bytes)	16 bits	
SAKKE data	Encapsulated PCK	The PCK is encapsulated by using the public key (PubEncKey in KMS Certificate) and the UID generated from the MC Service user ID of the terminating user	
}			
SIGN (ECCSI) payload {		Addressed by '00000100'B in the 'Next payload' field of the previous payload	
S type	2	ECCSI signature	
Signature len	Length of the signature field (in bytes)	12 bits	

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
S data	Signature: In case of UL message the signature shall be validated by the SS	Signature created according to RFC 3830 [24] clause 5.2 using the algorithm according to RFC 6507 [98] clause 5.2.1 using the UID generated from the MC Service user ID of the initiating user	
}			
NOTE 1: MIKEY payloads may occur in any order apart from the header payload which is always the first payload and the signature payload which is always the last payload			

- GMK distribution (MIKEY-SAKKE sent by the SS)

Table 5.5.9.1-3: MIKEY-SAKKE I_MESSAGE (GMK distribution by the SS)

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
MIKEY Common Header {	Any		
version	'00000001'B		
Data Type	'00011010'B	SAKKE msg (26)	
Next payload	'00000101'B	Next payload is timestamp	
V	'0'B		
PRF func	'0000001'B	PRF-HMAC-SHA-256	
CSB ID	GUK-ID: 4 bit purpose tag ('0000'B for GMK) & 28 bit identifier	Group User Key Identifier Derived from GMK-ID and User Salt according to TS 33.180 [94] clause 5,2,3	
#CS	'00000000'B	no crypto sessions in the CS ID map info.	
CS ID map type	1	empty map	
CS ID map Info	Not present		
}			
Timestamp Payload (T) {			
Next payload	'00001011'B	Next payload is RAND	
TS Type	'00000000'B	NTP-UTC (0): 64-bits	
TS Value	Current system time	64bit UTC value representing the number of seconds since 0h on 1 January 1900 with respect to the Coordinated Universal Time (UTC)	
}			
RAND Payload {			
Next payload	'00001110'B	Next payload is IDRi	
RAND len	'00010000'B	16 Bytes RAND	
RAND	128-bit random number arbitrarily selected by the SS		
}			
IDRi payload {			
Next payload	'00001110'B	Next payload is IDRr	
ID Role	1	Initiator (IDRi)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCX_GMS_Hostname	URI of the group management server	
}			
IDRr payload {			
Next payload	'00001110'B	Next payload is IDRkmsi	
ID Role	2	Responder (IDRr)	
ID Type	1		
ID len	Length of ID Data		

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
ID data	px_MCPTT_ID_User_A	MCPTT ID associated to the group management client	MCPTT
	px_MCVideo_ID_User_A	MCVideo ID associated to the group management client	MCVIDEO
	px_MCData_ID_User_A	MCData ID associated to the group management client	MCDATA
}			
IDRkmsi payload {			
Next payload	'00001110'B	Next payload is IDRkmsr	
ID Role	6	Initiator's KMS (IDRkmsi)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCX_KMS_Hostname		
}			
IDRkmsr payload {			
Next payload	'00011010'B	Next payload is SAKKE (26)	
ID Role	7	Responder's KMS (IDRkmsr)	
ID Type	1		
ID len	Length of ID Data		
ID data	tsc_MCX_KMS_Hostname	KMS of the UE	
}			
SAKKE payload {			
Next payload	'00010101'B	Next payload is General Extension	
SAKKE params	1	Parameter Set 1 according to RFC 6509 [23], Appendix A	
ID Scheme	2	'3GPP MCX hashed UID' (33.180 [94] E.1.2)	
SAKKE data length	Length of SAKKE data (in bytes)		
SAKKE data	Encapsulated GMK	The GMK is encapsulated by using the SAKKE public key and the UID generated from the MC Service user ID of the group management client (provided in IDRr)	
}			

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
General Extension Payload {			
Next payload	'00000100'B	Next payload is SIGN	
Type	7	'3GPP key parameters' See 33.180 [94] clause E.6.1	
..Length	Length of the data (in bytes)		
Content {		MCData Protected Payload message according to TS 33.180 [94] clause 8.5.4.1	
Message Type	'C3'O	protected and authenticated DATA PAYLOAD	
Date and Time	Same number of seconds as in the Timestamp Payload	UTC time in seconds since midnight UTC of January 1, 1970	
Payload ID	'00000000'O	value according to TS 33.180 [94] E.6.1	
Payload sequence number	'00'O	value according to TS 33.180 [94] E.6.1	
Payload algorithm	'01'O	AEAD_AES_128_GCM	
Signalling algorithm	not present		
IV	'AAAAAAAAAAAAAAAA 5555555555555555'O	arbitrarily selected	
DPPK-ID	Same as the CSB ID in the MIKEY Common Header		
Payload {		'Payload' element according to TS 24.282 [87] clause 15.2.13	
type	'78'O	Value as used in MCData messages in TS 24.282 [87]	
length	length of the payload data		
content type	'02'O	BINARY	
Data {	Protected Payload: encrypted with AEAD algorithms	See TS 33.180 [94] clause E.6 and 8.5.4.2	
Key Type	'00000000'B	GMK	
....Status	'1'	Not-revoked	

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
Activation Time	0	The time in UTC at which the associated GMK is to be made active for transmission in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). It shall be 5 octets in length. A value of 0 shall imply the activation time is the timestamp of the received MIKEY I_MESSAGE	
Expiry Time	0	The 'Expiry time' element shall define the time in UTC at which the associated key shall no longer be used in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). It shall be 5 octets in length. A value of 0 shall imply the key shall not expire.	
Text	""	no text: Text element shall contain Length sub-element with the value 0 (see TS 33.180 [94] E.6.5)	
Group IDs {			
Number of Group IDs	'1'		
Group ID	px_MCPTT_Group_A_ID	The ID for the group associated with the key.	MCPTT
	px_MCVideo_Group_A_ID	The ID for the group associated with the key.	MCVIDEO
	px_MCData_Group_A_ID	The ID for the group associated with the key.	MCDATA
}			
}			
}			
MIKEY_SAKKE I-MESSAGE	not present		
}			
SIGN (ECCSI) payload {			

3GPP TS 36.579-1 version 16.4.0 Release 16   515   ETSI TS 136 579-1 V16.4.0 (2024-05)

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
S type	2	ECCSI signature	
S len	Length of the signature field (in bytes)	12 bits	
S data	Signature	The signature shall be created according to RFC 3830 [24] clause 5.2 using the algorithm according to RFC 6507 [98] clause 5.2.1 using the UID generated from the identifier associated with the group management server	
}			

- MSCCK distribution (MIKEY-SAKKE sent by the SS)

Table 5.5.9.1-4: MIKEY-SAKKE I_MESSAGE (MSCCK distribution by the SS)

Field	Value/remark	Comment	Condition
Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
MIKEY Common Header {	Any		
version	'00000001'B		
Data Type	'00011010'B	SAKKE msg (26)	
Next payload	'00000101'B	Next payload is timestamp	
V	'0'B		
PRF func	'0000001'B	PRF-HMAC-SHA-256	
CSB ID	'0101xxxx ... xxxxxxxx'B	32-bit MSCCK-ID The 4 most significant bits of the MSCCK-ID indicate the purpose of the MSCCK is to protect general purpose subchannel control messages. The other 28-bits are randomly generated	
#CS	'00000000'B	no crypto sessions in the CS ID map info.	
CS ID map type	1	empty map	
CS ID map Info	Not present		
}			
Timestamp Payload (T) {			
Next payload	'00001011'B	Next payload is RAND	
TS Type	'00000000'B	NTP-UTC (0): 64-bits	
TS Value	Current system time	64bit UTC value representing the number of seconds since 0h on 1 January 1900 with respect to the Coordinated Universal Time (UTC)	
}			
RAND Payload {			
Next payload	'00001110'B	Next payload is IDRi	
RAND len	'00010000'B	16 Bytes RAND	
RAND	128-bit random number arbitrarily selected by the SS		
}			
IDRi payload {			
Next payload	'00001110'B	Next payload is IDRr	
ID Role	1	Initiator (IDRi)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCPTT_PublicServiceId_A	The public service identity identifying the participating MCPTT function	
}			
IDRr payload {			
Next payload	'00001110'B	Next payload is IDRkmsi	

Field	Value/remark	Comment	Condition
Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
ID Role	2	Responder (IDRr)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	px_MCPTT_ID_User_A	MCPTT ID associated to the terminating user	
}			
IDRkmsi payload {			
Next payload	'00001110'B	Next payload is IDRkmsr	
ID Role	6	Initiator's KMS (IDRkmsi)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCX_KMS_Hostname		
}			
IDRkmsr payload {			
Next payload	'00011010'B	Next payload is SAKKE (26)	
ID Role	7	Responder's KMS (IDRkmsr)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCX_KMS_Hostname	KMS of the UE	
}			
SAKKE payload {			
Next payload	'00000100'B	Next payload is SIGN	
SAKKE params	1	Parameter Set 1 according to RFC 6509 [23], Appendix A	
ID Scheme	2	'3GPP MCX hashed UID' (33.180 [94] E.1.2)	
SAKKE data length	Length of SAKKE data (in bytes)		
SAKKE data	Encapsulated MSCCK	The MSCCK is encapsulated by using the SAKKE public key and the UID generated from the MC Service user ID of the terminating user	
}			
SIGN (ECCSI) payload {			
S type	2	ECCSI signature	
S len	Length of the signature field (in bytes)	12 bits	

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
S data	Signature	The signature shall be created according to RFC 3830 [24] clause 5.2 using the algorithm according to RFC 6507 [98] clause 5.2.1 using the UID generated from the public service identity identifying the participating MCPTT function	
}			

-        MuSiK distribution (MIKEY-SAKKE sent by the SS)

Table 5.5.9.1-5: MIKEY-SAKKE I_MESSAGE (MuSiK distribution by the SS)

Field	Value/remark	Comment	Condition
Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
MIKEY Common Header {	Any		
version	'00000001'B		
Data Type	'00011010'B	SAKKE msg (26)	
Next payload	'00000101'B	Next payload is timestamp	
V	'0'B		
PRF func	'0000001'B	PRF-HMAC-SHA-256	
CSB ID	'0110xxxx ... xxxxxxxx'B	32-bit MuSiK-ID The 4 most significant bits of the MuSiK-ID indicate the purpose of the MuSiK is to protect floor control messages sent over MBMS. The other 28-bits are randomly generated	
#CS	'00000000'B	no crypto sessions in the CS ID map info.	
CS ID map type	1	empty map	
CS ID map Info	Not present		
}			
Timestamp Payload (T) {			
Next payload	'00001011'B	Next payload is RAND	
TS Type	'00000000'B	NTP-UTC (0): 64-bits	
TS Value	Current system time	64bit UTC value representing the number of seconds since 0h on 1 January 1900 with respect to the Coordinated Universal Time (UTC)	
}			
RAND Payload {			
Next payload	'00001110'B	Next payload is IDRi	
RAND len	'00010000'B	16 Bytes RAND	
RAND	128-bit random number arbitrarily selected by the SS		
}			
IDRi payload {			
Next payload	'00001110'B	Next payload is IDRr	
ID Role	1	Initiator (IDRi)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCPTT_PublicServiceId_A	The public service identity identifying the participating MCPTT function	
}			
IDRr payload {			
Next payload	'00001110'B	Next payload is IDRkmsi	
ID Role	2	Responder (IDRr)	

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
ID Type	1	URI	
ID len	Length of ID Data		
ID data	px_MCPTT_ID_User_A	MCPTT ID associated to the terminating user	
}			
IDRkmsi payload {			
Next payload	'00001110'B	Next payload is IDRkmsr	
ID Role	6	Initiator's KMS (IDRkmsi)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCX_KMS_Hostname		
}			
IDRkmsr payload {			
Next payload	'00011010'B	Next payload is SAKKE (26)	
ID Role	7	Responder's KMS (IDRkmsr)	
ID Type	1	URI	
ID len	Length of ID Data		
ID data	tsc_MCX_KMS_Hostname	KMS of the UE	
}			
SAKKE payload {			
Next payload	'00000100'B	Next payload is SIGN	
SAKKE params	1	Parameter Set 1 according to RFC 6509 [23], Appendix A	
ID Scheme	2	'3GPP MCX hashed UID' (33.180 [94] E.1.2)	
SAKKE data length	Length of SAKKE data (in bytes)		
SAKKE data	Encapsulated MuSiK	The MuSiK is encapsulated by using the SAKKE public key and the UID generated from the MC Service user ID of the terminating user	
}			
SIGN (ECCSI) payload {			
S type	2	ECCSI signature	
S len	Length of the signature field (in bytes)	12 bits	

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
S data	Signature	The signature shall be created according to RFC 3830 [24] clause 5.2 using the algorithm according to RFC 6507 [98] clause 5.2.1 using the UID generated from the public service identity identifying the participating MCPTT function	
}			

5.5.10 Common MCS test USIM parameters

5.5.10.1 General

The format and coding of elementary files of the USIM are defined in 3GPP TS 31.102 [73]. Those of the ISIM are defined in 3GPP TS 31.101 [79] and 3GPP TS 31.103 [80].

The present clause defines default MCS relevant parameters for programming the elementary files of the test USIM when running conformance test cases defined in TS 36.579-2 [2], TS 36.579-6 [84], or TS 36.579-7 [85].

For requirements to the test USIM/ISIM needed for the E-UTRA/EPC and MCS off-network ProSe operation see 3GPP TS 36.508 [6], clause 4.9.

5.5.10.2 Default settings for the Elementary Files (EFs)

EF$_{UST}$ (USIM Service Table)

Services	Discription	Activated	Version
Service n°109	Mission Critical Services	Yes	
NOTE: Only the relevant MCS related services indicated.			

EF$_{MST}$ (MCS Service Table)

This file shall be present. This EF indicates the coding of the MCS management objects and which MCS services are available.

Coding of the MCPTT management objects = '00' (XML format).

Services	Discription	Activated	Version
Service n°1:	MCPTT UE configuration data	Yes	
Service n°2:	MCPTT User profile data	Yes	
Service n°3:	MCS Group configuration data	Yes	
Service n°4:	MCPTT Service configuration data	Yes	
Service n°5:	MCS UE initial configuration data	Yes	
Service n°6:	MCData UE configuration data	Yes	
Service n°7:	MCData user profile data	Yes	
Service n°8:	MCData service configuration data	Yes	
Service n°9:	MCVideo UE configuration data	Yes	
Service n°10:	MCVideo user profile data	Yes	
Service n°11:	MCVideo service configuration data	Yes	

EF$_{MCS\_CONFIG}$ (MCS configuration data)

This file shall be present.

Encoded in XML format (as specified in the MCS Service Table).

MCPTT configuration data objects	Tag Values	Condition
MCPTT UE configuration data	'80'	Shall be present. The content of the MCPTT UE configuration data object shall be as specified in Table 5.5.8.2-1.
MCPTT user profile data	'81'	Shall be present. The content of the MCPTT User configuration data object shall be as specified in Table 5.5.8.3-1.
MCS Group configuration data	'82'	Shall be present. The content of the MCS Group configuration data object shall be as specified in Table 5.5.7.1 for MCPTT, Table 5.5.7.2-1 for MCVideo, and Table 5.5.7.3-1 for MCData.
MCPTT Service configuration data	'83'	Shall be present. The content of the MCPTT Server configuration data object shall be as specified in Table 5.5.8.4-1.
MCS UE initial configuration data	'84'	Shall be present. The content of the MCS UE initial configuration data object shall be as specified in Table 5.5.8.1-1 for MCPTT, Table 5.5.8.5-1 for MCVideo, and Table 5.5.8.9-1 for MCData,
MCData UE configuration data	'85'	Shall be present. The content of the MCData UE configuration data object shall be as specified in Table 5.5.8.10-1.
MCData user profile data	'86'	Shall be present. The content of the MCData user profile data object shall be as specified in Table 5.5.8.11-1.
MCData service configuration data	'87'	Shall be present. The content of the MCData service configuration data object shall be as specified in Table 5.5.8.12-1.
MCVideo UE configuration data	'88'	Shall be present. The content of the MCVideo UE configuration data object shall be as specified in Table 5.5.8.6-1.
MCVideo user profile data	'89'	Shall be present. The content of the MCVideo user profile data object shall be as specified in Table 5.5.8.7-1.
MCVideo service configuration data	'8A'	Shall be present. The content of the MCVideo service configuration data object shall be as specified in Table 5.5.8.8-1.

5.5.11 Default MCVideo Transmission Control Messages and other Information Elements

5.5.11.0 General

The following conditions apply throughout clause 5.5.11:

Table 5.5.11.0-1: Conditions

Condition	Explanation
FA	IE for when an active Functional Alias is used
ACK	Message requests a Transmission control Ack
UPLINK	The message is sent from the UE
DOWNLINK	The message is sent from the SS
NOTE: For further conditions see table 5.5.1-1	

For MCVideo media plane control different SSRCs (Synchronization SouRCes) need to be distinguished. Table 5.5.11.0-2 specifies the SSRCs as used in the default MCVideo media plane control messages for the case that there is no multiplexing of media plane control channels.

NOTE 1: Multiplexing of media plane control channels has been introduced in Rel-18 of TS 24.281 [86] and TS 24.581 [88] and is out of scope for the current release of this document.

NOTE 2: In contrast to Rel-18 where there are distinct SSRCs for the audio and video stream, in Rel-14 .. Rel-15 there is still only one SSRC identifying a media stream.

Table 5.5.11.0-2: SSRCs in MCVideo media plane control messages
(No multiplexing of media plane control channels)

SSRC (NOTE 1)	Description	Value
Media SSRC of the client	SSRC identifying the client (Client A)	Arbitrarily selected by the SS and assigned to the client when the transmission is granted (NOTE 2)
Media SSRC of a remote client	SSRC identifying the media stream of a remote client (Client B, C)	Arbitrarily selected by the SS (NOTE 2)
RTCP SSRC of the client	SSRC used by the client (Client A) in the RTCP header of the MCVideo media plane control messages sent to the SS	The client may use any value, value is not checked by the SS (NOTE 3).
RTCP SSRC of the SS	SSRC used by the SS in the RTCP header of the MCPTT media plane control messages sent to the client	Arbitrarily selected by the SS (NOTE 3)
NOTE 1: The term "RTCP SSRC" has been introduced in Rel-18 of TS 24.581 [88]. "Media SSRC" is used as in Rel-14 .. Rel-17 there is no "Audio SSRC" and "Video SSRC" yet in media plane control messages, but only a single SSRC value identifying the transmitter of a media stream.		
NOTE 2: Different SSRC values shall be selected by the SS for media streams from different clients. Nevertheless it is not clear for Rel-14 .. Rel-17 how the client uses the SSRC value provided by the server in the Transmission Granted message and there is no way to provide SSRC value(s) in case of implicit transmission grant ⇒ In general collisions according to IETF RFC 3550 [76] may occur but collision resolution is out of scope of this document.		
NOTE 3: As TS 24.581 [88] clarifies in Rel-18 that "the SSRC of the RTCP header is used to enable multiplexing of media plane control channels" it is assumed that RTCP SSRC values have no meaning in case of no multiplexing.		

5.5.11.1 Transmission Control Specific Messages Sent by the Transmission Participant

5.5.11.1.1 Transmission Request

Table 5.5.11.1.1-1: Transmission Request

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.581 [88] Table 9.2.4-1				
RTCP-header				
Subtype	"00000"	Transmission Request	TS 24.581 [88] clause 9.2.4 and Table 9.2.2.1-1	
	"10000"			ACK
SSRC	RTCP SSRC of the client		IETF RFC 3550 [76].	
	The SSRC of the message sender			OFF-NETWORK
name	MCV0			
Transmission Priority	If present		TS 24.581 [88] clause 9.2.3.2	

Derivation Path: TS 24.581 [88] Table 9.2.4-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Priority Value	Any allowed value	If present, a value between '0' and '255' where '0' is the lowest priority and '255' is the highest priority. If the Transmission Priority field is not included in the message the default priority is used as the Transmission Priority value. The value of the default priority is '0'. The default priority is sometimes referred to as normal priority.		
User ID	Not Present			
User ID		The User ID field is used in off-network only. The User ID field carries the MCVideo ID of the transmission participant sending the Transmission Release message.	TS 24.581 [88] clause 9.2.3.8	OFF-NETWORK
User ID	px_MCVideo_ID_User_A			
Transmission Indicator			TS 24.581 [88] clause 9.2.3.11	
Transmission Indicator	"1000000000000000"	Normal call		
	"0100000000000000"	Broadcast group call		BROADCAST-CALL
	"0001000000000000"	Emergency call		EMERGENCY-CALL
	"0000100000000000"	Imminent peril call		IMMPERIL-CALL
Functional Alias	Not present			
	px_MCVideo_ID_FA_B	functional alias URI of the transmitting user	TS 24.581 [88] clause 9.2.3.21	FA

5.5.11.1.2   Transmission Release

Table 5.5.11.1.2-1: Transmission Release

Derivation Path: TS 24.581 [88] Table 9.2.7-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP-header				
Subtype	"00010"	Transmission Release	TS 24.581 [88] clause 9.2.7 and Table 9.2.2.1-1	
	"10010"			ACK
SSRC	RTCP SSRC of the client		IETF RFC 3550 [76].	
	The SSRC of the message sender			OFF-NETWORK
name	MCV0			
User ID	Not Present			

Derivation Path: TS 24.581 [88] Table 9.2.7-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
User ID		The User ID field is used in off-network only. The User ID field carries the MCVideo ID of the transmission participant sending the Transmission Release message.	TS 24.581 [88] clause 9.2.3.8	OFF-NETWORK
User ID	px_MCVideo_ID_User_A			
Transmission Indicator				
Transmission Indicator	"1000000000000000"	Normal call	TS 24.581 [88] clause 9.2.3.11	
	"0100000000000000"	Broadcast group call		BROADCAST-CALL
	"0001000000000000"	Emergency call		EMERGENCY-CALL
	"0000100000000000"	Imminent peril call		IMMPERIL-CALL

5.5.11.1.3 Queue Position Request

Table 5.5.11.1.3-1: Queue Position Request

Derivation Path: TS 24.581 [88] Table 9.2.11-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"00011"	Queue Position Request	TS 24.581 [88] clause 9.2.11 and 9.2.2.1-1	
	"10011"			ACK
SSRC	RTCP SSRC of the client		IETF RFC 3550 [76],	
	The SSRC of the message sender			OFF-NETWORK
name	MCV0			
User ID	Not Present			
User ID			TS 24.581 [88] clause 9.2.3.8	OFF-NETWORK
User ID	px_MCVideo_ID_User_A			
Track Info	Not present	The MCVideo call does not involve a non-controlling MCVideo function	TS 24.581 [88] clause 9.2.3.13	

5.5.11.1.4 Receive Media Request

Table 5.5.11.1.4-1: Receive Media Request

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.581 [88] Table 9.2.14-1				
RTCP				
Subtype	"00100"	Receive Media Request	TS 24.581 [88] clause 9.2.14 and 9.2.2.1-1	
	"10100"			ACK
SSRC	RTCP SSRC of the client		IETF RFC 3550 [76]	
	The SSRC of the message sender			OFF-NETWORK
name	MCV0			
User ID		The User ID field is used to carry the identity of the user who is requesting the reception of the media.		
User ID	px_MCVideo_ID_User_A		TS 24.581 [88] Table 9.2.3.8-2	
SSRC of transmitter	Media SSRC of remote client (Client B) as provided by the SS in the Media Transmission Notification	The SSRC of the user transmitting the media		
Transmission Indicator			TS 24.581 [88] clause 9.2.3.11	
Transmission Indicator	"1000000000000000"	Normal call		
	"0100000000000000"	Broadcast group call		BROADCAST-CALL
	"0001000000000000"	Emergency call		EMERGENCY-CALL
	"0000100000000000"	Imminent peril call		IMMPERIL-CALL
Reception Priority	if present	Describes the level of reception priority requested in a Reception Request message or granted in a Reception Granted message. The max reception priority that can be requested in a Reception Request message is negotiated between the transmission control participant and the transmission control server	TS 24.581 [88] clause 9.2.3.19 and 6.2.5.3.3	

Derivation Path: TS 24.581 [88] Table 9.2.14-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Reception Priority value	any allowed value	The reception priority (0 to 255) where 0 is the lowest reception priority and 255 is the highest reception priority. If the Reception Priority field is not included in the message the default reception priority is used as the Reception Priority value. The value of the default reception priority is 0. The default reception priority is sometimes referred to as normal reception priority.		
Track Info	Not present	The MCVideo call does not involve a non-controlling MCVideo function	TS 24.581 [88] clause 9.2.3.13	
Functional Alias	Not present			
	px_MCVideo_ID_FA_B	functional alias URI of the transmitting user	TS 24.581 [88] clause 9.2.3.21	FA

5.5.11.1.5   Void

5.5.11.1.6   Remote Transmission Request

Table 5.5.11.1.6-1: Remote Transmission Request

Derivation Path: TS 24.581 [88] Table 9.2.22-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"00111"	Remote Transmission Request	TS 24.581 [88] clause 9.2.22 and Table 9.2.2.1-1	
	"10111"			ACK
SSRC	RTCP SSRC of the client		IETF RFC 3550 [76].	
	The SSRC of the message sender			OFF-NETWORK
name	MCV0			
Remote ID		Carries the identity of the user who remotely initiated the media transmission of another user.	TS 24.581 [88] clause 9.2.3.8	
User ID	px_MCVideo_ID_User_B			
User ID		Carries the identity of the user whose media transmission is requested.	TS 24.581 [88] clause 9.2.3.8	
User ID	px_MCVideo_ID_User_A			

5.5.11.1.7 Remote Transmission Cancel Request

Table 5.5.11.1.7-1: Remote Transmission Cancel Request

Derivation Path: TS 24.581 [88] Table 9.2.24-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"01000"	Remote transmission cancel request	TS 24.581 [88] clause 9.2.24 and Table 9.2.2.1-1	
	"11000"			ACK
SSRC	RTCP SSRC of the client		IETF RFC 3550 [76].	
	The SSRC of the message sender			OFF-NETWORK
name	MCV0			
User ID		Carries the identity of the user whose media transmission is requested for cancellation.	TS 24.581 [88] clause 9.2.3.8	
User ID	px_MCVideo_ID_User_A			

5.5.11.2 Transmission Control Specific Messages Sent by the Transmission Control Server

5.5.11.2.1 Transmission Granted

Table 5.5.11.2.1-1: Transmission Granted

Derivation Path: TS 24.581 [88] Table 9.2.5-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"00000"	Transmission granted	TS 24.581 [88] clause 9.2.5 and 9.2.2.1-2	
	"10000"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server	IETF RFC 3550 [76].	
	The SSRC of the message sender	The SSRC of the transmission arbitrator		OFF-NETWORK
name	MCV1	Transmission Control messages sent by the transmission control server and transmission control participant		
Duration			TS 24.581 [88] clause 9.2.3.3	
Duration	"00000000 10000000"	128 sec (an arbitrary value)		
SSRC of granted transmission participant	Media SSRC which should be used by the client in the header of RTP packets		IETF RFC 3550 [76]	

Derivation Path: TS 24.581 [88] Table 9.2.5-1				
Information Element	Value/remark	Comment	Reference	Condition
Transmission priority	Not present	If the Transmission Priority field is not included in the message the default priority (='0') is used as the Floor Priority value		
User ID	Not present			
User ID			TS 24.581 [88] clause 9.2.3.8	OFF-NETWORK
User ID	px_MCVideo_ID_User_A			
Queue Size	Not present			
Queue Size	"0"	the number of queued MCVideo clients in the MCVideo call	TS 24.581 [88] clause 9.2.3.15	OFF-NETWORK
SSRC of queued floor participant	Not present			
	The SSRC of queued transmission participant		IETF RFC 3550 [76]	OFF-NETWORK
Queued User ID	Not present			
	px_MCVideo_ID_User_C	MCVideo ID of the transmission participant in the queue	TS 24.581 [88] clause 9.2.3.14	OFF-NETWORK
Queue Info	Not present			
Queue Info		queue position and granted transmission priority in the queue		OFF-NETWORK
queue position info	"00000001"		TS 24.581 [88] clause 9.2.3.5	
queue priority level	"00000000"		TS 24.581 [88] clause 9.2.3.2	
Transmission Indicator			TS 24.581 [88] Table 9.2.3.11-2	
Transmission Indicator	"1000000000000000"	Normal call		
	"0100000000000000"	Broadcast group call		BROADCAST-CALL
	"0001000000000000"	Emergency call		EMERGENCY-CALL
	"0000100000000000"	Imminent peril call		IMMPERIL-CALL

5.5.11.2.2   Transmission Rejected

Table 5.5.11.2.2-1: Transmission Rejected

Derivation Path: TS 24.581 [88] Table 9.2.6-1				
Information Element	Value/remark	Comment	Reference	Condition
RTCP				
Subtype	"00001"	Transmission rejected	TS 24.581 [88] clause 9.2.6 and 9.2.2.1-2	
	"10001"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server	IETF RFC 3550 [76]	

Derivation Path: TS 24.581 [88] Table 9.2.6-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	The SSRC of the message sender			OFF-NETWORK
name	MCV1			
Reject Cause		Includes the reason for the rejecting the transmission request and can be followed by a text-string explaining why the transmission request was rejected. Therefore the length of the packet will vary depending on the size of the application dependent field.	TS 24.581 [88] clause 9.2.3.4	
Reject Cause	"255"	Th<Reject cause> value set to '255' indicates that the transmission control server does not grant the transmission request due to the transmission control server local policy.	TS 24.581 [88] clause 9.2.6.2	
Reject Cause Phrase	"Other reason"	A text string encoded the text string in the SDES item CNAME.	IETF RFC 3550 [76]	
User ID	Not present			
User ID		The User ID field is used in off-network only. The User ID carries the MCVideo ID of the requesting transmission participant to which the Transmission Rejected message is sent.	TS 24.581 [88] clause 9.2.3.8	OFF-NETWORK
User ID	px_MCVideo_ID_User_A			
Transmission Indicator			TS 24.581 [88] clause 9.2.3.11	
Transmission Indicator	"1000000000000000"	Normal call		
	"0100000000000000"	Broadcast group call		BROADCAST-CALL
	"0001000000000000"	Emergency call		EMERGENCY-CALL
	"0000100000000000"	Imminent peril call		IMMPERIL-CALL

5.5.11.2.3   Transmission Arbitration Taken

Table 5.5.11.2.3-1: Transmission Arbitration Taken

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.581 [88] Table 9.2.8-1				
RTCP				
Subtype	"00010"	Transmission Arbitration Taken	TS 24.581 [88] clause 9.2.8 and 9.2.2.1-2	
	"10010"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server	IETF RFC 3550 [76]	
	The SSRC of the message sender			OFF-NETWORK
name	MCV1			
Granted Party's Identity		Identifies the MCVideo user that is granted to send media.	TS 24.581 [88] clause 9.2.3.6	
Granted Party's Identity	px_MCVideo_ID_User_A			
Permission to Request the Transmission		Indicates whether receiving parties are allowed to request the transmission.	TS 24.581 [88] clause9.2.3.7	
Permission to Request the Transmission	"1"	Coded as follows: 0 The receiver is not permitted to request transmission. 1 The receiver is permitted to request transmission		
User ID	Not Present			
User ID		The User ID field is used in off-network only. The User ID carries the MCVideo ID of the transmission participant sending the Transmission Arbitration Taken message.	TS 24.581 [88] clause 9.2.3.8	OFF-NETWORK
User ID	px_MCVideo_ID_User_A			
Message Sequence Number			TS 24.581 [88] clause 9.2.3.9	
Message Sequence Number	The value sent in the previous Transmission Arbitration Taken message, if any, increased by 1	The <Message Sequence Number> value can be between '0' and '65535'. When the '65535' value is reached, the <Message Sequence Number> value starts from '0' again.		
Transmission Indicator			TS 24.581 [88] clause 9.2.3.11	
Transmission Indicator	"1000000000000000"	Normal call.		
	"0100000000000000"	Broadcast group call		BROADCAST-CALL
	"0001000000000000"	Emergency call		EMERGENCY-CALL
	"0000100000000000"	Imminent peril call		IMMPERIL-CALL

Derivation Path: TS 24.581 [88] Table 9.2.8-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
SSRC of Granted Transmission Participant	Media SSRC of granted transmission participant:	Notation in accordance with clause 5.5.11.0.	IETF RFC 3550 [76]	

5.5.11.2.4 Transmission Arbitration Released

Table 5.5.11.2.4-1: Transmission Arbitration Released

Derivation Path: TS 24.581 [88] Table 9.2.9-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"00011"	Transmission Arbitration Release	TS 24.581 [88] clause 9.2.9 and 9.2.2.1-2	
	"10011"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server	IETF RFC 3550 [76]	
	The SSRC of the message sender			OFF-NETWORK
name	MCV1			
Granted Party's Identity		Identifies the MCVideo user that is granted to send media.	TS 24.581 [88] clause 9.2.3.6	
Granted Party's Identity	px_MCVideo_ID_User_A			
User ID	Not Present			
User ID		The User ID field is used in off-network only. The User ID carries the MCVideo ID of the transmission participant sending the Transmission Arbitration Release message.	TS 24.581 [88] clause 9.2.3.8	OFF-NETWORK
User ID	px_MCVideo_ID_User_A			
Message Sequence Number			TS 24.581 [88] clause 9.2.3.9	
Message Sequence Number	The value sent in the previous Transmission Arbitration Release message, if any, increased by 1	The <Message Sequence Number> value can be between '0' and '65535'. When the '65535' value is reached, the <Message Sequence Number> value starts from '0' again.		
Transmission Indicator			TS 24.581 [88] clause 9.2.3.11	
Transmission Indicator	"1000000000000000"	Normal call		
	"0100000000000000"	Broadcast group call		BROADCAST-CALL
	"0001000000000000"	Emergency call		EMERGENCY-CALL
	"0000100000000000"	Imminent peril call		IMMPERIL-CALL
SSRC of Granted Transmission Participant	Media SSRC of the intended recipient of the message	Notation in accordance with clause 5.5.11.0.	IETF RFC 3550 [76]	

5.5.11.2.5 Transmission Revoked

Table 5.5.11.2.5-1: Transmission Revoked

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.581 [88] Table 9.2.10-1				
RTCP				
Subtype	"00100"	Transmission Revoked	TS 24.581 [88] clause 9.2.10 and 9.2.2.1-2	
	"10100"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server	IETF RFC 3550 [76]	
	The SSRC of the message sender			OFF-NETWORK
name	MCV1			
Reject Cause		Message includes <Reject Cause> cause value in the Reject Cause field explaining why the transmission control server wants the transmission participant to stop sending media and can be followed by additional information. Therefore the length of the packet can vary depending on the value of the rejection cause.	TS 24.581 [88] clause 9.2.3.4	
Reject Cause Value	7	The <Reject Cause> value set to 7 indicates that the MCVideo client's permission to send a media is being queued. No additional information is included.	TS 24.581 [88] clause 9.2.10.2	
Reject Cause Phrase	"Queue the transmission"	A text string encoded the text string in the SDES item CNAME.	TS 24.581 [88] clause 9.2.10.2	
Transmission Indicator			TS 24.581 [88] clause 9.2.3.11	
Transmission Indicator	"1000000000000000"	Normal call		
	"0100000000000000"	Broadcast group call		BROADCAST-CALL
	"0001000000000000"	Emergency call		EMERGENCY-CALL
	"0000100000000000"	Imminent peril call		IMMPERIL-CALL

5.5.11.2.6   Queue Position Info

Table 5.5.11.2.6-1: Queue Position Info

Derivation Path: TS 24.581 [88] Table 9.2.12-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"00101"	Queue Position Info	TS 24.581 [88] clause 9.2.12 and 9.2.2.1-2	
	"10101"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server	IETF RFC 3550 [76]	
	The SSRC of the message sender			OFF-NETWORK
name	MCV1			
User ID	Not present			
User ID		The User ID field is used in off-network only. The User ID field carries the MCVideo user ID of the transmission participant sending the Queue Position Info message.	TS 24.581 [88] clause 9.2.3.8	OFF-NETWORK
User ID	px_MCVideo_ID_User_A			
SSRC of Queued Transmission Participant	Not present			
SSRC of Queued Transmission Participant	The SSRC of the queued transmission participant	Applicable only in off-network and shall carry the SSRC of the queued transmission participant.	IETF RFC 3550 [76].	OFF-NETWORK
Queued User ID	Not present			
Queued User ID	px_MCVIDEO_ID_User_B	Used in off-network only. The Queued User ID field carries the MCVideo ID of the queued transmission control participant.	TS 24.581 [88] clause 9.2.3.8	OFF-NETWORK
Queue Info		Defines the queue position and granted transmission control priority in the queue.	TS 24.581 [88] clause 9.2.3.5	
Queue Position Info	"1"	value is a binary value		
Queue Priority Level	"0"	value consists of 8 bit parameter giving the transmission priority. The value of the default priority is '0'. The default priority is sometimes referred to as normal priority.	TS 24.581 [88] clause 9.2.3.2	
Track Info	Not present	The MCVideo call does not involve a non-controlling MCVideo function	TS 24.581 [88] clause 9.2.3.13	
Transmission Control Indicator			TS 24.581 [88] clause 9.2.3.11	
Transmission Indicator	"1000000000000000"	Normal call		
	"0100000000000000"	Broadcast group call		BROADCAST-CALL
	"0001000000000000"	Emergency call		EMERGENCY-CALL

Derivation Path: TS 24.581 [88] Table 9.2.12-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	"0000100000000000"	Imminent peril call		IMMPERIL-CALL

5.5.11.2.7 Media Transmission Notification

Table 5.5.11.2.7-1: Media Transmission Notification

Derivation Path: TS 24.581 [88] Table 9.2.13-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"00110"	Media Transmission Notification	TS 24.581 [88] clause 9.2.13 and 9.2.2.1-2	
	"10110"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server	IETF RFC 3550 [76]	
	The SSRC of the message sender			OFF-NETWORK
name	MCV1			
User ID		User ID of the user transmitting the media	TS 24.581 [88] clause 9.2.3.8	
User ID	px_MCVideo_ID_User_B			
SSRC of transmitter	Media SSRC of remote client (Client B)	The SSRC of transmitter field carries the SSRC of the user transmitting the media		
Permission to Request the Transmission		Indicates whether receiving parties are allowed to request the transmission.	TS 24.581 [88] clause 9.2.3.7	
Permission to Request the Transmission value	1	The receiver is permitted to request transmission		
	0	The receiver is not permitted to request transmission		BROADCAST-CALL
Transmission Indicator			TS 24.581 [88] clause 9.2.3.11	
Transmission Indicator	"1000000000000000"	Normal Call		
	"0100000000000000"	Broadcast group call		BROADCAST-CALL
	"0001000000000000"	Emergency call		EMERGENCY-CALL
	"0000100000000000"	Imminent peril call		IMMPERIL-CALL
Track Info	Not present	The MCVideo call does not involve a non-controlling MCVideo function	TS 24.581 [88] clause 9.2.3.13	
Functional Alias	Not present			
	px_MCVideo_ID_FA_B	functional alias URI of the transmitting user	TS 24.581 [88] clause 9.2.3.21	FA
Reception Mode			TS 24.581 [88] clause 9.2.3.22	
Reception Mode value	1	The receiver is not granted permission to automatically receive media		

Derivation Path: TS 24.581 [88] Table 9.2.13-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	0	The receiver is granted permission to automatically receive media		EMERGENCY-CALL, IMMPERIL-CALL, BROADCAST-CALL

5.5.11.2.8   Receive Media Response

Table 5.5.11.2.8-1: Receive Media Response

Derivation Path: TS 24.581 [88] Table 9.2.15-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"00111"	Receive Media Response	TS 24.581 [88] clause 9.2.15 and 9.2.2.1-2	
	"10111"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server	IETF RFC 3550 [76],	
	The SSRC of the message sender			OFF-NETWORK
name	MCV1			
Result		Indicates whether media reception is possible as per the request	TS 24.581 [88] clause 9.2.3.17	
Result	"1"	0 - The receiver is not permitted (rejected) to receive the media transmission. 1 - The receiver is permitted (granted) to receive the media transmission.		
Reject Cause	Not present	Includes the reason for the rejecting the media receive request and can be followed by a text-string explaining why the media receive request was rejected. Therefore the length of the packet will vary depending on the size of the application dependent field		
SSRC of transmitter	Same value as in the corresponding Receive Media Request	The SSRC of transmitter field carries the SSRC of the user transmitting the media Notation in accordance with clause 5.5.11.0.	IETF RFC 3550 [76]	
Transmission Indicator			TS 24.581 [88] clause 9.2.3.11	
Transmission Indicator	"1000000000000000"	Normal call		
	"0100000000000000"	Broadcast group call		BROADCAST-CALL
	"0001000000000000"	Emergency call		EMERGENCY-CALL

Derivation Path: TS 24.581 [88] Table 9.2.15-1				
Information Element	Value/remark	Comment	Reference	Condition
	"0000100000000000"	Imminent peril call		IMMPERIL -CALL

5.5.11.2.9 Media Reception Notification

Table 5.5.11.2.9-1: Media Reception Notification

Derivation Path: TS 24.581 [88] Table 9.2.16-1				
Information Element	Value/remark	Comment	Reference	Condition
RTCP				
Subtype	"01000"	Media Reception Notification	TS 24.581 [88] clause 9.2.16 and 9.2.2.1-2	
	"11000"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server	IETF RFC 355 0 [76]	
	The SSRC of the message sender			OFF-NETWOR K
name	MCV1			
User ID		The User ID field is used to carry the identity of the user who is receiving the media	TS 24.581 [88] clause 9.2.3.8	
User ID	px_MCVideo_ID_User_ B			
Functional Alias	Not present			
	px_MCVideo_ID_FA_B	functional alias URI of the transmitting user	TS 24.581 [88] clause 9.2.3.21	FA

5.5.11.2.10 Void

5.5.11.2.11 Transmission Cancel Request Notify

Table 5.5.11.2.11-1: Transmission Cancel Request Notify

Derivation Path: TS 24.581 [88] Table 9.2.19-1				
Information Element	Value/remark	Comment	Reference	Condition
RTCP				
Subtype	"01010"	Transmission Cancel Request Notify	TS 24.581 [88] clause 9.2.19 and 9.2.2.1-2	
	"11010"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server	IETF RFC 3550 [76].	
	The SSRC of the message sender	The SSRC of the transmission arbitrator		OFF-NETWORK
name	MCV1	Transmission Control messages sent by the transmission control server and transmission control participant		

5.5.11.2.12   Remote Transmission Response

Table 5.5.11.2.12-1: Remote Transmission Response

Derivation Path: TS 24.581 [88] Table 9.2.23-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"01011"	Remote Transmission Response	TS 24.581 [88] clause 9.2.23 and 9.2.2.1-2	
	"11011"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server	IETF RFC 3550 [76].	
	The SSRC of the message sender			OFF-NETWORK
name	MCV1			

5.5.11.2.13   Remote Transmission Cancel Response

Table 5.5.11.2.13-1: Remote Transmission Cancel Response

Derivation Path: TS 24.581 [88] Table 9.2.25-1				
Information Element	Value/remark	Comment	Reference	Condition
RTCP				
Subtype	"01100"	Remote Transmission Cancel Response	TS 24.581 [88] clause 9.2.25 and 9.2.2.1-2	
	"11100"			ACK
SSRC	RTCP SSRC of the SS		IETF RFC 3550 [76].	
name	MCV1			

5.5.11.2.14   Media Reception Override Notification

Table 5.5.11.2.14-1: Media Reception Override Notification

Derivation Path: TS 24.581 [88] Table 9.2.28-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"01101"	Media Reception Override Notification	TS 24.581 [88] clause 9.2.28 and 9.2.2.1-2	
	"11101"			ACK
SSRC	RTCP SSRC of the SS		IETF RFC 3550 [76].	
	The SSRC of the message sender			OFF-NETWORK
name	MCV1			
User ID		Carries the identity of the user who is requesting the reception of the media.	TS 24.581 [88] clause 9.2.3.8	
User ID	px_MCVideo_ID_User_A			

Derivation Path: TS 24.581 [88] Table 9.2.28-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
SSRC of transmitter	Same value as sent to the client in the Receive Media Response (Media SSRC of client B)	The SSRC of transmitter field carries the SSRC of the user transmitting the media Notation in accordance with clause 5.5.11.0.	IETF RFC 3550 [76].	
Overriding ID		Carries the identity of the user of the overriding media.	TS 24.581 [88] clause 9.2.3.8	
User ID	px_MCVideo_ID_User_C			
Overridden ID		Carries the identity of the user of the overridden media.	TS 24.581 [88] clause 9.2.3.8	
User ID	px_MCVideo_ID_User_B			

5.5.11.2.15   Transmission End Notify

Table 5.5.11.2.15-1: Transmission End Notify

Derivation Path: TS 24.581 [88] Table 9.2.29-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"01110"	Transmission End Notify	TS 24.581 [88] clause 9.2.29 and 9.2.2.1-2	
	"11110"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the transmission control server.	IETF RFC 3550 [76].	
	The SSRC of the message sender			OFF-NETWORK
name	MCV1			
User ID		Carries the identity of the user whose media transmission has been released	TS 24.581 [88] clause 9.2.3.8	
User ID	px_MCVideo_ID_User_B			
SSRC of transmitter	Media SSRC of remote client (Client B)	The SSRC of transmitter field carries the SSRC of the user transmitting the media Notation in accordance with clause 5.5.11.0	IETF RFC 3550 [76].	

5.5.11.2.16   Transmission Idle

Table 5.5.11.2.16-1: Transmission Idle

Derivation Path: TS 24.581 [88] Table 9.2.30-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"01111"		TS 24.581 [88] clause 9.2.2.1-2	
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server	IETF RFC 3550 [76].	

Derivation Path: TS 24.581 [88] Table 9.2.30-1				
Information Element	Value/remark	Comment	Reference	Condition
	The SSRC of the message sender	The SSRC of the transmission arbitrator.		OFF-NETWORK
name	"MCV1"	Transmission Control messages sent by the Transmission Control Server and the Transmission Control Participant.		
Message Sequence Number				
Message Sequence Number	The value sent in the previous Transmission Idle message, if any, increased with 1	value is a binary value. The <Message Sequence Number> value can be between '0' and '65535'. When the '65535' value is reached, the <Message Sequence Number> value starts from '0' again		
Transmission Indicator			TS 24.581 [88] clause 9.2.3.11	
Transmission Indicator	"1000000000000000"	Normal call		
	"0100000000000000"	Broadcast group call		BROADCAST-CALL
	"0001000000000000"	Emergency call		EMERGENCY-CALL
	"0000100000000000"	Imminent peril call		IMMPERIL-CALL

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

5.5.11.3.1 Transmission End Request

Table 5.5.11.3.1-1: Transmission End Request

Derivation Path: TS 24.581 [88] Table 9.2.20-1				
Information Element	Value/remark	Comment	Reference	Condition
RTCP				
Subtype	"00000"	Transmission End Request	TS 24.581 [88] clause 9.2.20 and 9.2.2.1-3	
	"10000"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server for on-network and transmission arbitrator for off-network.	IETF RFC 3550 [76].	DOWNLINK
	RTCP SSRC of the client	The SSRC of transmission control participant		UPLINK
name	MCV2			

Derivation Path: TS 24.581 [88] Table 9.2.20-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
User ID		The User ID field is used to carry the identity of the user whose media transmission is requested to be terminated.		
User ID	px_MCVideo_ID_User_A			
Reject Cause		Includes the reason explaining why the transmission control server wants the transmission participant to stop sending media	TS 24.581 [88] clause 9.2.3.4	DOWNLINK
Reject Cause Value	8			
Reject Cause Phrase	"No receiving participant"			
Reject Cause	not present			UPLINK

5.5.11.3.2 Transmission End Response

Table 5.5.11.3.2-1: Transmission End Response

Derivation Path: TS 24.581 [88] Table 9.2.21-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"00001"	Transmission End Response	TS 24.581 [88] clause 9.2.21 and 9.2.2.1-3	
	"10001"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server for on-network and transmission arbitrator for off-network.	IETF RFC 3550 [76].	DOWNLINK
	RTCP SSRC of the client			UPLINK
name	MCV2			
User ID		The User ID field is used to carry the identity of the user whose media transmission is requested to be terminated.		
User ID	px_MCVideo_ID_User_A			

5.5.11.3.3 Media Reception End Request

Table 5.5.11.3.3-1: Media Reception End Request

Derivation Path: TS 24.581 [88] Table 9.2.26-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"00010"	Media Reception End Request	TS 24.581 [88] clause 9.2.26 and 9.2.2.1-3	
	"10010"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the transmission control server	IETF RFC 3550 [76]	DOWNLINK
	RTCP SSRC of the client	The SSRC of the transmission control participant		UPLINK
name	MCV2			
SSRC of transmitter	Media SSRC of remote client as provided in Media transmission notification message sent to the UE	The SSRC of transmitter field carries the SSRC of the user transmitting the media	IETF RFC 3550 [76]	
Transmission Indicator			TS 24.581 [88] clause 9.2.3.11	
Transmission Indicator	"1000000000000000"	Normal call		
	"0100000000000000"	Broadcast group call		BROADCAST-CALL
	"0001000000000000"	Emergency call		EMERGENCY-CALL
	"0000100000000000"	Imminent peril call		IMMPERIL-CALL

5.5.11.3.4 Media Reception End Response

Table 5.5.11.3.4-1: Media Reception End Response

Derivation Path: TS 24.581 [88] Table 9.2.27-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"00011"	Media Reception End Response	TS 24.581 [88] clause 9.2.27 and 9.2.2.1-3	
	"10011"			ACK
SSRC	RTCP SSRC of the SS	The SSRC of the transmission control server	IETF RFC 3550 [76]	DOWNLINK
	RTCP SSRC of the client	The SSRC of the transmission control participant		UPLINK
name	MCV2			
SSRC of transmitter	Media SSRC of remote client (same value as in the corresponding Media Reception End Request)	The SSRC of transmitter field carries the SSRC of the user transmitting the media	IETF RFC 3550 [76]	

5.5.11.3.5 Transmission Control Ack

Table 5.5.11.3.5-1: Transmission Control Ack

Derivation Path: TS 24.581 [88] Table 9.2.31-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
RTCP				
Subtype	"00100"	Transmission Control Ack	TS 24.581 [88] clause 9.2.31 and 9.2.2.1-3	
SSRC	RTCP SSRC of the SS	The SSRC of the Transmission Control server for on-network and transmission arbitrator for off-network.	IETF RFC 3550 [76]	DOWNLINK
	RTCP SSRC of the client	The SSRC of the transmission control participant		UPLINK
name	MCV2			
Source			TS 24.581 [88] clause 9.2.3.12	
Source	"2"	the controlling MCVideo function is the sender of the message		DOWNLINK
	"0"	the transmission participant is the sender of the message		UPLINK
Message name			TS 24.581 [88] clause 9.2.3.18	
Message Name	Message Name of the transmission control messages which requested the acknowledgement	value is as coded as an ascii name field of the RTCP APP packet containing the message to be acknowledged		
Message type			TS 24.581 [88] clause 9.2.3.10	
Message Type	'0000xxxx' with 'xxxx' being the lower four bits of the subtype of the message to be acknowledged	Message Type of the transmission control messages which requested the acknowledgement		

5.5.12 MSRP Messages for MCData

5.5.12.1 MSRP SEND

5.5.12.1.1 MSRP SEND from the UE

Table 5.5.12.1.1-1: MSRP SEND from the UE

Derivation Path: RFC 4975 [120] clause 9				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transaction Identifier				
value	any allowed value			
To-Path				
value	MSRP URI as provided by the SS in its SDP message sent to the UE during call establishment			
From-Path				
value	MSRP URI as provided by the UE during call establishment			
Message-ID				
value	any allowed value	In case of chunking the same Message-ID shall be used for all chunks of the message		
Byte-Range				
range-start	1 for the first chunk of a message, length of all previous chunks for a second or later chunk of the message			
	1			EMPTY_S END_REQ
range-end	any allowed value			
	0			EMPTY_S END_REQ
total length	any allowed value	may be a specific length or "*"		
	0			EMPTY_S END_REQ
Content-Type	as specified by the test case		TS 24.582 [89], clause 6.4	
	not present			EMPTY_S END_REQ
data	as specified by the test case			
	not present			EMPTY_S END_REQ
End-line				
transact-id	same value as used in Transaction Identifier field			
continuation-flag	"+" in case of chunking when further chunks will follow; "$" in case of the message's last chunk or if the MSRP SEND request contains the entire message			
	"$"			EMPTY_S END_REQ

Condition	Explanation
EMPTY_SEND_REQ	Empty SEND request to bind the TCP connection to an MSRP session
For further conditions see table 5.5.1-1	

Table 5.5.12.1.1-2..4: Void

5.5.12.1.2   MSRP SEND from the SS

Table 5.5.12.1.2-1: MSRP SEND from the SS

Derivation Path: RFC 4975 [120] clause 9				
Information Element	Value/remark	Comment	Reference	Condition
Transaction Identifier				
value	value assigned by the SS	The SS shall use a different value for each SEND request sent to the UE during a test case		
To-Path				
value	MSRP URI as provided by the UE in its SDP message sent to the SS during call establishment			
From-Path				
value	MSRP URI as provided by the SS in its SDP message sent to the UE during call establishment			
Message-ID				
value	value assigned by the SS	The SS shall use a different value for each message sent to the UE during a test case (NOTE 1)		
Byte-Range				
range-start	1			
range-end	length of the message in bytes	NOTE 1		
	0			EMPTY_SEND_REQ
total length	length of the message in bytes	NOTE 1		
	0			EMPTY_SEND_REQ
Content-Type	as specified by the test case		TS 24.582 [89], clause 6.4	
	not present			EMPTY_SEND_REQ
data	as specified by the test case			
	not present			EMPTY_SEND_REQ
End-line				
transact-id	same value as used in Transaction Identifier field			
continuation-flag	"$"	NOTE 1		
NOTE 1: It is assumed that in general there is no chunking in DL for MCData test cases.				

Condition	Explanation
EMPTY_SEND_REQ	Empty SEND request to bind the TCP connection to an MSRP session
For further conditions see table 5.5.1-1	

Table 5.5.12.1.2-2: Void

5.5.12.2   MSRP 200 (OK)

5.5.12.2.1   MSRP 200 (OK) from the UE

Table 5.5.12.2.1-1: MSRP 200 (OK) from the UE

Derivation Path: RFC 4975 [120] clause 9				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transaction Identifier				
value	same value as received in the MSRP SEND request			
To-Path				
value	Same value as received in the From-Path of the MSRP SEND request	According to Table 5.5.12.1.2-1 the SS sends only one URI in its SEND requests	RFC 4975 clause 7.2	
From-Path				
value	MSRP URI of the UE (as provided by the UE in its SDP message sent to the SS during call establishment)		RFC 4975 clause 7.2	
End-line				
transact-id	same value as used in Transaction Identifier field			
continuation-flag	"$"			

5.5.12.2.2 MSRP 200 (OK) from the SS

Table 5.5.12.2.2-1: MSRP 200 (OK) from the SS

Information Element	Value/remark	Comment	Reference	Condition
Transaction Identifier				
value	same value as received in the MSRP SEND message			
To-Path				
value	same value as received in the From-Path of the MSRP SEND request	According to Table 5.5.12.1.1-1 it is assumed that the UE sends only one URI in its SEND requests	RFC 4975 clause 7.2	
From-Path				
value	MSRP URI of the SS (as provided by the SS in its SDP message sent to the UE during call establishment)		RFC 4975 clause 7.2	
End-line				
transact-id	same value as used in Transaction Identifier field			
continuation-flag	"$"			

Derivation Path: RFC 4975 [120] clause 9

5.5.13 Default XML messages and elements for XML security

5.5.13.1 XML signature for integrity protection of MIME bodies

Table 5.5.13.1-1: XML signature MIME body from the UE

Derivation Path: TS 24.379 [9] annex F.6.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Signatures		list of N signatures for the signed XML bodies of a SIP message		
Signature [n]		n ∈ {1..N}		
id	any value if present			
SignedInfo				
CanonicalizationAlgorithm	any value	canonicalisation method e.g. "http://www.w3.org/TR/2001/REC-xml-c14n-20010315"		
SignatureAlgorithm	"HMAC-SHA-256"	Hashing algorithm to be applied to sign the SignedInfo with the key given in the KeyInfo		
Reference				
URI	same value as the Content-ID of the XML MIME body the signature belongs to			
DigestAlgorithm	"SHA-256"	Hashing algorithm to be applied to sign the data object		
DigestValue	Hash signing the data object (referred to by the URI)			
SignatureValue	Hash signing the SignedInfo	The signing key is derived from the CSK according to TS 33.180 [94] Annex F.1.4 with FC = 0x52 XPK-ID = CSK-ID		
KeyInfo				
KeyName	base64 encoded CSK-ID			

Table 5.5.13.1-2: XML signature MIME body from the SS

Information Element	Value/remark	Comment	Reference	Condition
Derivation Path: TS 24.379 [9] annex F.6.2				
Signatures		list of N signatures for the signed XML bodies of a SIP message		
Signature [n]		n ∈ {1..N}		
id	"signature" & n			
SignedInfo				
CanonicalizationAlgorithm	"http://www.w3.org/TR/2001/REC-xml-c14n-20010315"	canonicalisation method		
SignatureAlgorithm	"HMAC-SHA-256"	Hashing algorithm to be applied to sign the SignedInfo with the key given in the KeyInfo		
Reference				
URI	same value as the Content-ID of the XML MIME body the signature belongs to			
DigestAlgorithm	"SHA-256"	Hashing algorithm to be applied to sign the data object		
DigestValue	Hash signing the data object (referred to by the URI)			
SignatureValue	Hash signing the SignedInfo	The signing key is derived from the CSK according to TS 33.180 [94] Annex F.1.4 with FC = 0x52 XPK-ID = CSK-ID		
KeyInfo				
KeyName	base64 encoded CSK-ID			

5.5.13.2 XML <EncryptedData> element for encryption of XML element content

Table 5.5.13.2-1: XML <EncryptedData> element from the UE

Derivation Path: XML Encryption Syntax, Version 1.1 [108] clause 9.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
EncryptedData				
Type attribute	"http://www.w3.org/2001/04/xmlenc#Content" if present			
EncryptionMethod	if present			
Algorithm attribute	"http://www.w3.org/2009/xmlenc11#aes128-gcm"			
KeyInfo	if present			
KeyName	base64 encoded CSK-ID	The CSK-ID is provided by the UE at CSK distribution		
CipherData				
CipherValue	encrypted XML element content	The encryption key is derived from the CSK according to TS 33.180 [94] Annex F.1.4 with FC = 0x51 XPK-ID = CSK-ID	TS 33.180 [94] clause 9.3.4.2	

Table 5.5.13.2-2: XML <EncryptedData> element from the SS

Derivation Path: XML Encryption Syntax, Version 1.1 [108] clause 9.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
EncryptedData				
Type attribute	"http://www.w3.org/2001/04/xmlenc#Content"			
EncryptionMethod				
Algorithm attribute	"http://www.w3.org/2009/xmlenc11#aes128-gcm"			
KeyInfo				
KeyName	base64 encoded CSK-ID	The CSK-ID is provided by the UE at CSK distribution		
CipherData				
CipherValue	encrypted XML element content	The encryption key is derived from the CSK according to TS 33.180 [94] Annex F.1.4 with FC = 0x51 XPK-ID = CSK-ID	TS 33.180 [94] clause 9.3.4.2	

5.5.13.3 Encrypted XML URI attribute

Table 5.5.13.3-1: Encrypted XML URI attribute

Delivery Path: RFC 3261 [22] clause 19.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
SIP URI				
scheme	"sip"			
user	semicolon separated list of:		TS 24.379 [9] clause 6.6.2.3.4	
	base64 encoded encrypted URI	The encryption key is derived from the CSK according to TS 33.180 [94] Annex F.1.4 with FC = 0x51 XPK-ID = CSK-ID		
	"iv=" & base64 encoded 96-bit random initialisation vector (IV)	IV as used by AES-128 encryption algorithm		
	"key-id=" & base64 encoded encryption key identifier (XPK-ID)	with XPK-ID = CSK-ID		
	"alg=128-aes-gcm"	AES-128 encryption algorithm		
password	not present			
host	"mc1-encryption.3gppnetwork.org"		TS 24.379 [9] clause 6.6.2.3.4; TS 23.003 [69] clause 26.2	
port	not present			
uri parameters	not present			
headers	not present			

5.5.14 Default MCVideo Call Control Off-network Messages and Other Information Elements

5.5.14.1 GROUP CALL PROBE

Table 5.5.14.1-1: GROUP CALL PROBE from the UE to Other UEs

Derivation Path: TS 24.281 [86] Table 17.1.2.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Group call probe message identity	"10000001"		
MCVideo group ID	px_MCVideo_Group_A_ID		

5.5.14.2 GROUP CALL ANNOUNCEMENT

Table 5.5.14.2-1: GROUP CALL ANNOUNCEMENT from the UE to other UEs

Derivation Path: TS 24.281 [86] Table 17.1.3.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Group call announcement message Identity	"10000010"		
Call identifier	a random number uniformly distributed between (0, 65535) generated at the beginning of a call establishment		
Call type	"00000001"	Basic Group Call	
	"00000011"		EMERGEN CY-CALL
	"00000100"		IMMPERIL-CALL
Refresh interval	10000	The Refresh interval contains a number denoting the minimum time interval (milliseconds) between two successive periodic announcements. NOTE: TS 24.281 [26] clause 9.3.2.4.3.1 states that the refresh interval of the call is fixed to 10 seconds (10000 ms)	
Call start time	The Call start time value is an unsigned integer containing UTC time of the time when a call was started, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).		
Last call type change time	The Last call type change time value is an unsigned integer containing UTC time of the time when a call priority was changed, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).		
MCVideo group ID	px_MCVideo_Group_A_ID		
SDP	As described in TS36.579-1, Table 5.5.3.1.3-2		
Originating MCPTT user ID	px_MCVideo_ID_User_A	pre-set MCVideo user ID	
Last user to change call type	The ID of the last user to change contents		
Confirm mode indication	Present		
Probe response	Not Present		

5.5.14.3 GROUP CALL ACCEPT

Table 5.5.14.3-1: GROUP CALL ACCEPT from the UE to other UEs

Derivation Path: TS 24.281 [86] Table 17.1.4.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Group call accept message identity	"10000011"		
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Call type	"00000001"	Basic Group Call	
	"00000011"		EMERGENCY-CALL
	"00000100"		IMMPERIL-CALL
MCVideo group ID	px_MCVideo_Group_A_ID		
Sending MCVideo user ID	px_MCVideo_ID_User_A		

5.5.14.4 GROUP CALL EMERGENCY END

Table 5.5.14.4-1: GROUP CALL EMERGENCY END from the UE to other UEs

Derivation Path: TS 24.281 [86] Table 17.1.13.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Group call emergency end message identity	"10000100"		
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Last call type change time	The Last call type change time value is an unsigned integer containing UTC time of the time when a call priority was changed, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).		
Last user to change call type	px_MCVideo_ID_User_A	The ID of the last user to change contents	
MCVideo group ID	px_MCVideo_Group_A_ID		
Originating MCVideo user ID	px_MCVideo_ID_User_A		

5.5.14.5 GROUP CALL IMMINENT PERIL END

Table 5.5.14.5-1: GROUP CALL IMMINENT PERIL END from the UE to other UEs

Derivation Path: TS 24.281 [86] Table 17.1.12.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Group call imminent peril end message identity	"10000101"		
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Last call type change time	The Last call type change time value is an unsigned integer containing UTC time of the time when a call priority was changed, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds).		
Last user to change call type	px_MCVideo_ID_User_A	The ID of the last user to change contents	
MCVideo group ID	px_MCVideo_Group_A_ID		
Originating MCVideo user ID	px_MCVideo_ID_User_A		

5.5.14.6 GROUP CALL BROADCAST

Table 5.5.14.6-1: GROUP CALL BROADCAST from the UE to other UEs

Derivation Path: TS 24.281 [86] Table 17.1.18.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Group call broadcast message identity	"10000110"		
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Call type	"00000010"	Broadcast Group Call	
Originating MCVideo user ID	px_MCVideo_ID_User_A		
MCVideo group ID	px_MCVideo_Group_A_ID		
SDP	As described in TS36.579-1, Table 5.5.3.1.3-2		

5.5.14.7 GROUP CALL BROADCAST END

Table 5.5.14.7.1-1: GROUP CALL BROADCAST END from the UE to other UEs

Derivation Path: TS 24.281 [86] Table 17.1.19.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Group Call Broadcast end message identity	"10000111"		
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
MCVideo group ID	px_MCVideo_Group_A_ID		
Originating MCVideo user ID	px_MCVideo_ID_User_A		

5.5.14.8 PRIVATE CALL SETUP REQUEST

Table 5.5.14.8-1: PRIVATE CALL SETUP REQUEST from the UE to another UE

Derivation Path: TS 24.281 [86] Table 17.1.5.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Private call setup request message identity	"10001000"		
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Commencement mode	"00000000"	Automatic Commencement Mode	
Call type	"00000101"	Private Call	
MCVideo user ID of the caller	px_MCVideo_ID_User_A		
MCVideo user ID of the callee	px_MCVideo_ID_User_B		
SDP offer	As described in TS36.579-1, Table 5.5.3.1.3-2 with condition PRIVATE_CALL		
User location	Not Present		

5.5.14.9 PRIVATE CALL RINGING

Table 5.5.14.9-1: PRIVATE CALL RINGING from the UE to another UE

Derivation Path: TS 24.281 [86] Table 17.1.6.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Private call ringing message identity	"10001001"		
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
MCVideo user ID of the caller	px_MCVideo_ID_User_A		
MCVideo user ID of the callee	px_MCVideo_ID_User_B		

5.5.14.10 PRIVATE CALL ACCEPT

Table 5.5.14.10-1: PRIVATE CALL ACCEPT from the UE to another UE

Derivation Path: TS 24.281 [86] Table 17.1.7.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Private call accept message identity	"10001010"		
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
MCVideo user ID of the caller	px_MCVideo_ID_User_A		
MCVideo user ID of the callee	px_MCVideo_ID_User_B		
SDP answer	As described in TS36.579-1, Table 5.5.3.1.3-2 with condition PRIVATE_CALL		

5.5.14.11 PRIVATE CALL REJECT

Table 5.5.5.11.1-1: PRIVATE CALL REJECT from the UE to another UE

Derivation Path: TS 24.281 [86] Table 17.1.8.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Private call reject message identity	"10001011"		
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
Reason	"00000000"	00000000 = REJECT; 00000001 = MEDIA FAILURE; 00000010 = BUSY; 00000011 = E2E SECURITY CONTEXT FAILURE; 00000100 = FAILED	
MCVideo user ID of the caller	px_MCVideo_ID_User_A		
MCVideo user ID of the callee	px_MCVideo_ID_User_B		

5.5.14.12 PRIVATE CALL RELEASE

Table 5.5.14.12-1: PRIVATE CALL RELEASE from the UE to another UE

Derivation Path: TS 24.281 [86] Table 17.1.9.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Private call release message identity	"10001100"		
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
MCVideo user ID of the caller	px_MCVideo_ID_User_A		
MCVideo user ID of the callee	px_MCVideo_ID_User_B		

5.5.14.13 PRIVATE CALL RELEASE ACK

Table 5.5.14.13-1: PRIVATE CALL RELEASE ACK from the UE to another UE

Derivation Path: TS 24.281 [86] Table 17.1.10.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Private call release ack message identity	"10001101"		
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
MCVideo user ID of the caller	px_MCVideo_ID_User_A		
MCVideo user ID of the callee	px_MCVideo_ID_User_B		

5.5.14.14 PRIVATE CALL ACCEPT ACK

Table 5.5.14.14-1: PRIVATE CALL ACCEPT ACK from the UE to another UE

Derivation Path: TS 24.281 [86] Table 17.1.11.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Private call accept ack message identity	"10001110"		
Call identifier	a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment		
MCVideo user ID of the caller	px_MCVideo_ID_User_A		
MCVideo user ID of the callee	px_MCVideo_ID_User_B		

5.5.14.15   GROUP EMERGENCY ALERT

Table 5.5.14.15.1-1: GROUP EMERGENCY ALERT from the UE to other UEs

Derivation Path: TS 24.281 [86] Table 17.1.14.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Group emergency alert message identity	"10001111"		
MCVideo group ID	px_MCVideo_Group_A_ID		
Originating MCVideo user ID	px_MCVideo_ID_User_A		
Organization name	px_MCX_DomainName_Organization_A		
User location	Not Present		
User location			USER_LOC
Latitude	any allowed value		
Longitude	any allowed value		
Altitude	Not present, or any allowed value	Optional IE	
Accuracy	any allowed value		
Timestamp	any allowed value		

Condition	**Explanation**
USER_LOC	If requested, shall set the location IE with UE (MCPVideo Client) current location

5.5.14.16   GROUP EMERGENCY ALERT ACK

Table 5.5.14.16.1-1: GROUP EMERGENCY ALERT ACK from the UE to other UEs

Derivation Path: TS 24.281 [86] Table 17.1.15.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Group emergency alert ack message identity	"10010000"		
MCVideo group ID	px_MCVideo_Group_A_ID		
Originating MCVideo user ID	px_MCVideo_ID_User_B		
Sending MCVideo user ID	px_MCVideo_ID_User_A		

5.5.14.17   GROUP EMERGENCY ALERT CANCEL

Table 5.5.14.17.1-1: GROUP EMERGENCY ALERT CANCEL from the UE to other UEs

Derivation Path: TS 24.281 [86] Table 17.1.16.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Group emergency alert cancel message identity	"10010001"		
MCVideo group ID	px_MCVideo_Group_A_ID		
Originating MCVideo user ID	px_MCVideo_ID_User_A		
Sending MCVideo user ID	px_MCVideo_ID_User_A		

5.5.14.18 GROUP EMERGENCY ALERT CANCEL ACK message

Table 5.5.14.18.1-1: GROUP EMERGENCY ALERT CANCEL ACK from the UE to other UEs

Derivation Path: TS 24.281 [86] Table 17.1.17.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Group emergency alert cancel ack message identity	"10010010"		
MCVideo group ID	px_MCVideo_Group_A_ID		
Originating MCVideo user ID	px_MCVideo_ID_User_A		
Sending MCVideo user ID	px_MCVideo_ID_User_B		

5.5.14.19 PRIVATE REMOTE VIDEO PUSH REQUEST message

Table 5.5.14.19-1: PRIVATE REMOTE VIDEO PUSH REQUEST from the UE to another UE

Derivation Path: TS 24.381 [86] Table 17.1.20.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Remote video push setup request message identity	"10010011"		
Call identifier	a random number uniformly distributed between (0, 65535) generated at the beginning of a call establishment		
MCVideo remote push requester	px_MCVideo_ID_User_A	TS 24.281, Section 13.3.2.2.1	
MCVideo remote push call originator	px_MCVideo_ID_User_A	The stored caller ID	
MCVideo remote push call recipient	px_MCVideo_ID_User_B	The stored callee ID	
Video Information	The Video Information IE is used to indicate the source (user/group) of the video being pushed.	TS 24.281, Sections 13.3.2.2.1 and 17.2.17, Figure 17.2.17-1, Tables 17.2.17-1 and 17.2.17-2.	
Source ID type	"00000000"	user ID	
Length of Source ID contents			
Source ID	px_MCVideo_ID_User_A		

5.5.14.20   GROUP REMOTE VIDEO PUSH REQUEST message

Table 5.5.14.20-1: GROUP REMOTE VIDEO PUSH REQUEST from the UE to another UE

Derivation Path: TS 24.281 [86] Table 17.1.21.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Remote video push setup request message identity	"10010100"		
Call identifier	a random number uniformly distributed between (0, 65535) generated at the beginning of a call establishment		
MCVideo remote push requester	px_MCVideo_ID_User_A		
MCVideo remote push call originator	px_MCVideo_ID_User_A	The stored caller ID	
MCVideo remote push call recipient	px_MCVideo_Group_A_ID	The stored group recipient ID	
Video Information		The Video Information IE is used to indicate the source (user/group) of the video being pushed.	
Source ID type	"00000001"	group ID	
Length of Source ID contents			
Source ID	px_MCVideo_Group_A_ID		

5.5.14.21   VIDEO PUSH TRYING RESPONSE message

Table 5.5.14.21-1: VIDEO PUSH TRYING RESPONSE from UE to other UE

Derivation Path: TS 24.281 [86] Table 17.1.22.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Remote video push trying response message identity	"10010101"		
Call identifier	a random number uniformly distributed between (0, 65535) generated at the beginning of a call establishment		

5.5.14.22 NOTIFY VIDEO PUSH message

Table 5.5.14.22-1: NOTIFY VIDEO PUSH message content

Information Element	Value/remark	Comment	Condition
Derivation Path: TS 24.281 [86] Table 17.1.23.1-1			
Remote video push notification message identity	"10010110"		
Call identifier	a random number uniformly distributed between (0, 65535) generated at the beginning of a call establishment		
Result	"00000000"	00000000 = SUCCESS 00000001 =FAILURE	
MCVideo remote push request notifier	px_MCVideo_ID_User_A	TS 24.281, section 13.3.2.2.6	
MCVideo remote push request notification recipient	px_MCVideo_ID_User_B		
MCVideo remote push call recipient user	Not present		
	px_MCVideo_ID_User_A		PRIVATE-CALL
MCVideo remote push call recipient group	Not present		
	px_MCVideo_Group_A_ID		GROUP-CALL
Reason	Not present		

5.6 Reference configurations

5.6.1 General

The Reference configuration requirements provided in clause 5.6 specify configuration values that are expected to be pre-configured in the UE before a test is started. The exception to this requirement are tests which verify the communication exchange which allows a MCPTT device to be enabled for the provision of MCPTT cervices e.g. test case 5.1 in TS 36.579-2 [2].

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

For any end-point to use or access end-to-end secure communications, it needs to be provisioned with keying material associated to its identity by the KMS as specified in 3GPP TS 33.180 [94]. To avoid dynamic allocation of key material before each test case is run, the following keying information needs to be preconfigured in the UE. For convenience, the information is provided in the form of an XML which can be provided/pre-configured in the UE e.g. by a Key Management Server (KMS) as specified in 3GPP TS 33.180 [94].

```
<?xml version="1.0" encoding="UTF-8"?>
<SignedKmsResponse xmlns= "TOBEDEFINED" xmlns:xsi = "http://www.w3.org/2001/XMLSchema-instance"
    xmlns:ds = "http://www.w3.org/2000/09/xmldsig#" xmlns:se = "TOBEDEFINED"
    xsi:schemaLocation = "TOBEDEFINED SE_KmsInterface_XMLSchema.xsd" Id = "xmldoc">
<KmsResponse xmlns= "TOBEDEFINED"  Version = "1.0.0">
  <KmsUri>kms.example.org</KmsUri>
  <UserUri>user@example.org</UserUri>
  <Time>2014-01-26T10:07:14</Time>
  <KmsId>KMSProvider12345</KmsId>
  <ClientReqUrl>http://kms.example.org/keymanagement/identity/v1/keyprov</ClientReqUrl>
  <KmsMessage>
    <KmsKeyProv Version = "1.0.0" xsi:type = "se:KmsKeyProvTkType">
      <KmsKeySet Version = "1.1.0">
        <KmsUri>kms.example.org</KmsUri>
        <CertUri>cert1.kms.example.org</CertUri>
        <Issuer>www.example.org</Issuer>
        <UserUri>user@example.org</UserUri>
        <UserID>0123456789ABCDEF0123456789ABCDEF</UserID>
        <ValidFrom>2017-07-31T17:00:00</ValidFrom>
        <ValidTo>2018-07-31T16:59:59</ValidTo>
```

```
            <KeyPeriodNo>3710502000</KeyPeriodNo>
            <Revoked>false</Revoked>
            <UserDecryptKey xsi:type = "se:EncKeyContentType">
              <EncryptedKey xmlns = "http://www.w3.org/2001/04/xmlenc#">
                <EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#kw-aes256"/>
                <ds:KeyInfo>
                  <ds:KeyName>tk.12.user@example.org</KeyName>
                </ds:KeyInfo>
                <CipherData>
                  <CipherValue>DEADBEEF</CipherValue>
                </CipherData>
              </EncryptedKey>
            </UserDecryptKey>
            <UserSigningKeySSK xsi:type = "se:EncKeyContentType">
              <EncryptedKey xmlns = "http://www.w3.org/2001/04/xmlenc#">
                <EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#kw-aes256"/>
                <ds:KeyInfo>
                  <ds:KeyName>tk.12.user@example.org</KeyName>
                </ds:KeyInfo>
                <CipherData>
                  <CipherValue>DEADBEEF</CipherValue>
                </CipherData>
              </EncryptedKey>
            </UserSigningKeySSK>
            <UserPubTokenPVT xsi:type = "se:EncKeyContentType">
              <EncryptedKey xmlns = "http://www.w3.org/2001/04/xmlenc#">
                <EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#kw-aes256"/>
                <ds:KeyInfo>
                  <ds:KeyName>tk.12.user@example.org</KeyName>
                </ds:KeyInfo>
                <CipherData>
                  <CipherValue>DEADBEEF</CipherValue>
                </CipherData>
              </EncryptedKey>
            </UserPubTokenPVT>
          </KmsKeySet>
          <NewTransportKey xmlns= "TOBEDEFINED">
              <EncryptedKey xmlns="http://www.w3.org/2001/04/xmlenc#"
Type="http://www.w3.org/2001/04/xmlenc#EncryptedKey">
                  <EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#kw-aes256"/>
                  <ds:KeyInfo>
                    <ds:KeyName>tk.12.user@example.org</KeyName>
                  </ds:KeyInfo>
                  <CipherData>
                    <CipherValue>DEADBEEF</CipherValue>
                  </CipherData>
                  <CarriedKeyName>tk.13.user@example.org</CarriedKeyName>
              </EncryptedKey>
          </NewTransportKey>
      </KmsKeyProv>
   </KmsMessage>
</KmsResponse>
<Signature xmlns="http://www.w3.org/2000/09/xmldsig#">
    <SignedInfo>
      <CanonicalizationMethod Algorithm="http://www.w3.org/TR/2001/REC-xml-c14n-20010315"/>
      <SignatureMethod Algorithm="http://www.w3.org/2001/04/xmldsig-more#hmac-sha256">
        <HMACOutputLength>128</HMACOutputLength>
      </SignatureMethod>
      <Reference URI="#xmldoc">
        <DigestMethod Algorithm="http://www.w3.org/2001/04/xmlenc#sha256"/>
        <DigestValue>nnnn</DigestValue>
      </Reference>
    </SignedInfo>
    <SignatureValue>DEADBEEF</SignatureValue>
    <KeyInfo>
      <KeyName>tk.12.user@example.org</KeyName>
    </KeyInfo>
  </Signature>
</SignedKmsResponse>
```

5.6.3   XML schema for MCPTT location information

```
From TS 24.379 clause F.3.2:
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:mcpttloc="urn:3gpp:ns:mcpttLocationInfo:1.0"
```

```
targetNamespace="urn:3gpp:ns:mcpttLocationInfo:1.0" elementFormDefault="qualified"
attributeFormDefault="unqualified"
xmlns:xenc="http://www.w3.org/2001/04/xmlenc#">

    <xs:import namespace="http://www.w3.org/2001/04/xmlenc#"/>

    <xs:element name="location-info" id="loc">
        <xs:annotation>
            <xs:documentation>Root element, contains all information related to location
configuration, location request and location reporting for the MCPTT service</xs:documentation>
        </xs:annotation>
        <xs:complexType>
            <xs:choice>
                <xs:element name="Configuration" type="mcpttloc:tConfigurationType"/>
                <xs:element name="Request" type="mcpttloc:tRequestType"/>
                <xs:element name="Report" type="mcpttloc:tReportType"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0"
maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
            </xs:choice>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>
    </xs:element>
    <xs:complexType name="tConfigurationType">
        <xs:sequence>
            <xs:element name="NonEmergencyLocationInformation"
type="mcpttloc:tRequestedLocationType" minOccurs="0"/>
            <xs:element name="EmergencyLocationInformation" type="mcpttloc:tRequestedLocationType"
minOccurs="0"/>
            <xs:element name="TriggeringCriteria" type="mcpttloc:TriggeringCriteriaType"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:attribute name="ConfigScope">
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:enumeration value="Full"/>
                    <xs:enumeration value="Update"/>
                </xs:restriction>
            </xs:simpleType>
        </xs:attribute>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>
    <xs:complexType name="tRequestType">
        <xs:complexContent>
            <xs:extension base="mcpttloc:tEmptyType">
                <xs:attribute name="RequestId" type="xs:string" use="required"/>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="tReportType">
        <xs:sequence>
            <xs:element name="TriggerId" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="CurrentLocation" type="mcpttloc:tCurrentLocationType"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:attribute name="ReportID" type="xs:string" use="optional"/>
        <xs:attribute name="ReportType" use="required">
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:enumeration value="Emergency"/>
                    <xs:enumeration value="NonEmergency"/>
                </xs:restriction>
            </xs:simpleType>
        </xs:attribute>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>
    <xs:complexType name="TriggeringCriteriaType">
        <xs:sequence>
            <xs:element name="CellChange" type="mcpttloc:tCellChange" minOccurs="0"/>
            <xs:element name="TrackingAreaChange" type="mcpttloc:tTrackingAreaChangeType"
minOccurs="0"/>
            <xs:element name="PlmnChange" type="mcpttloc:tPlmnChangeType" minOccurs="0"/>
            <xs:element name="MbmsSaChange" type="mcpttloc:tMbmsSaChangeType" minOccurs="0"/>
            <xs:element name="MbsfnAreaChange" type="mcpttloc:tMbsfnAreaChangeType" minOccurs="0"/>
            <xs:element name="PeriodicReport" type="mcpttloc:tIntegerAttributeType" minOccurs="0"/>
```

```
                <xs:element name="TravelledDistance" type="mcpttloc:tIntegerAttributeType"
minOccurs="0"/>
                <xs:element name="McpttSignallingEvent" type="mcpttloc:tSignallingEventType"
minOccurs="0"/>
                <xs:element name="GeographicalAreaChange" type="mcpttloc:tGeographicalAreaChange"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>
        <xs:complexType name="tCellChange">
            <xs:sequence>
                <xs:element name="AnyCellChange" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>
                <xs:element name="EnterSpecificCell" type="mcpttloc:tSpecificCellType" minOccurs="0"
maxOccurs="unbounded"/>
                <xs:element name="ExitSpecificCell" type="mcpttloc:tSpecificCellType" minOccurs="0"
maxOccurs="unbounded"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>
        <xs:complexType name="tEmptyType"/>
        <xs:simpleType name="tEcgi">
            <xs:restriction base="xs:string">
                <xs:pattern value="\d{3}\d{3}[0-1]{28}"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:complexType name="tSpecificCellType">
            <xs:simpleContent>
                <xs:extension base="mcpttloc:tEcgi">
                    <xs:attribute name="TriggerId" type="xs:string" use="required"/>
                </xs:extension>
            </xs:simpleContent>
        </xs:complexType>
        <xs:complexType name="tEmptyTypeAttribute">
            <xs:complexContent>
                <xs:extension base="mcpttloc:tEmptyType">
                    <xs:attribute name="TriggerId" type="xs:string" use="required"/>
                </xs:extension>
            </xs:complexContent>
        </xs:complexType>
        <xs:complexType name="tTrackingAreaChangeType">
            <xs:sequence>
                <xs:element name="AnyTrackingAreaChange" type="mcpttloc:tEmptyTypeAttribute"
minOccurs="0"/>
                <xs:element name="EnterSpecificTrackingArea" type="mcpttloc:tTrackingAreaIdentity"
minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="ExitSpecificTrackingArea" type="mcpttloc:tTrackingAreaIdentity"
minOccurs="0" maxOccurs="unbounded"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>
        <xs:simpleType name="tTrackingAreaIdentityFormat">
            <xs:restriction base="xs:string">
                <xs:pattern value="\d{3}\d{3}[0-1]{16}"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:complexType name="tTrackingAreaIdentity">
            <xs:simpleContent>
                <xs:extension base="mcpttloc:tTrackingAreaIdentityFormat">
                    <xs:attribute name="TriggerId" type="xs:string" use="required"/>
                </xs:extension>
            </xs:simpleContent>
        </xs:complexType>
        <xs:complexType name="tPlmnChangeType">
            <xs:sequence>
                <xs:element name="AnyPlmnChange" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>
                <xs:element name="EnterSpecificPlmn" type="mcpttloc:tPlmnIdentity" minOccurs="0"
maxOccurs="unbounded"/>
                <xs:element name="ExitSpecificPlmn" type="mcpttloc:tPlmnIdentity" minOccurs="0"
maxOccurs="unbounded"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
```

```
    </xs:complexType>
    <xs:simpleType name="tPlmnIdentityFormat">
        <xs:restriction base="xs:string">
            <xs:pattern value="\d{3}\d{3}"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="tPlmnIdentity">
        <xs:simpleContent>
            <xs:extension base="mcpttloc:tPlmnIdentityFormat">
                <xs:attribute name="TriggerId" type="xs:string" use="required"/>
            </xs:extension>
        </xs:simpleContent>
    </xs:complexType>
    <xs:complexType name="tMbmsSaChangeType">
        <xs:sequence>
            <xs:element name="AnyMbmsSaChange" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>
            <xs:element name="EnterSpecificMbmsSa" type="mcpttloc:tMbmsSaIdentity" minOccurs="0"/>
            <xs:element name="ExitSpecificMbmsSa" type="mcpttloc:tMbmsSaIdentity" minOccurs="0"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>
    <xs:simpleType name="tMbmsSaIdentityFormat">
        <xs:restriction base="xs:integer">
            <xs:minInclusive value="0"/>
            <xs:maxInclusive value="65535"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="tMbmsSaIdentity">
        <xs:simpleContent>
            <xs:extension base="mcpttloc:tMbmsSaIdentityFormat">
                <xs:attribute name="TriggerId" type="xs:string" use="required"/>
            </xs:extension>
        </xs:simpleContent>
    </xs:complexType>
    <xs:complexType name="tMbsfnAreaChangeType">
        <xs:sequence>
            <xs:element name="EnterSpecificMbsfnArea" type="mcpttloc:tMbsfnAreaIdentity"
minOccurs="0"/>
            <xs:element name="ExitSpecificMbsfnArea" type="mcpttloc:tMbsfnAreaIdentity"
minOccurs="0"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>
    <xs:simpleType name="tMbsfnAreaIdentityFormat">
        <xs:restriction base="xs:integer">
            <xs:minInclusive value="0"/>
            <xs:maxInclusive value="255"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="tMbsfnAreaIdentity">
        <xs:simpleContent>
            <xs:extension base="mcpttloc:tMbsfnAreaIdentityFormat">
                <xs:attribute name="TriggerId" type="xs:string" use="required"/>
            </xs:extension>
        </xs:simpleContent>
    </xs:complexType>
    <xs:complexType name="tIntegerAttributeType">
        <xs:simpleContent>
            <xs:extension base="xs:integer">
                <xs:attribute name="TriggerId" type="xs:string" use="required"/>
            </xs:extension>
        </xs:simpleContent>
    </xs:complexType>
    <xs:complexType name="tTravelledDistanceType">
        <xs:sequence>
            <xs:element name="TravelledDistance" type="xs:positiveInteger"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>
    <xs:complexType name="tSignallingEventType">
        <xs:sequence>
            <xs:element name="InitialLogOn" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>
```

```
                <xs:element name="GroupCallNonEmergency" type="mcpttloc:tEmptyTypeAttribute"
minOccurs="0"/>
                <xs:element name="PrivateCallNonEmergency" type="mcpttloc:tEmptyTypeAttribute"
minOccurs="0"/>
                <xs:element name="LocationConfigurationReceived" type="mcpttloc:tEmptyTypeAttribute"
minOccurs="0"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type=" mcpttloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>
        <xs:complexType name="tEmergencyEventType">
            <xs:sequence>
                <xs:element name="GroupCallEmergency" type="mcpttloc:tEmptyTypeAttribute"
minOccurs="0"/>
                <xs:element name="GroupCallImminentPeril" type="mcpttloc:tEmptyTypeAttribute"
minOccurs="0"/>
                <xs:element name="PrivateCallEmergency" type="mcpttloc:tEmptyTypeAttribute"
minOccurs="0"/>
                <xs:element name="InitiateEmergencyAlert" type="mcpttloc:tEmptyTypeAttribute"
minOccurs="0"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>
        <xs:complexType name="tRequestedLocationType">
            <xs:sequence>
                <xs:element name="ServingEcgi" type="mcpttloc:tEmptyType" minOccurs="0"/>
                <xs:element name="NeighbouringEcgi" type="mcpttloc:tEmptyType" minOccurs="0"
maxOccurs="unbounded"/>
                <xs:element name="MbmsSaId" type="mcpttloc:tEmptyType" minOccurs="0"/>
                <xs:element name="MbsfnArea" type="mcpttloc:tEmptyType" minOccurs="0"/>
                <xs:element name="GeographicalCordinate" type="mcpttloc:tEmptyType" minOccurs="0"/>
                <xs:element name="minimumIntervalLength" type="xs:positiveInteger"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>

        <xs:complexType name="tCurrentLocationType">
            <xs:sequence>
                <xs:element name="CurrentServingEcgi" type="mcpttloc:tLocationType" minOccurs="0"/>
                <xs:element name="NeighbouringEcgi" type="mcpttloc:tLocationType" minOccurs="0"
maxOccurs="unbounded"/>
                <xs:element name="MbmsSaId" type="mcpttloc:tLocationType" minOccurs="0"/>
                <xs:element name="MbsfnArea" type="mcpttloc:tLocationType" minOccurs="0"/>
                <xs:element name="CurrentCoordinate" type="mcpttloc:tPointCoordinate" minOccurs="0"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>

        <xs:simpleType name="protectionType">
            <xs:restriction base="xs:string">
                <xs:enumeration value="Normal"/>
                <xs:enumeration value="Encrypted"/>
            </xs:restriction>
        </xs:simpleType>

        <xs:complexType name="tLocationType">
            <xs:choice minOccurs="1" maxOccurs="1">
                <xs:element name="Ecgi" type="mcpttloc:tEcgi" minOccurs="0"/>
                <xs:element name="SaId" type="mcpttloc:tMbmsSaIdentity" minOccurs="0"/>
                <xs:element name="MbsfnAreaId" type="mcpttloc:tMbsfnAreaIdentity" minOccurs="0"/>
                <xs:any namespace="##other" processContents="lax"/>
                <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
            </xs:choice>
            <xs:attribute name="type" type="protectionType"/>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>

        <xs:complexType name="tGeographicalAreaChange">
            <xs:sequence>
                <xs:element name="AnyAreaChange" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>
```

```
            <xs:element name="EnterSpecificAreaType" type="mcpttloc:tSpecificAreaType"
minOccurs="0"/>
            <xs:element name="ExitSpecificAreaType" type="mcpttloc:tSpecificAreaType"
minOccurs="0"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>
    <xs:complexType name="tSpecificAreaType">
        <xs:sequence>
            <xs:element name="GeographicalArea" type="mcpttloc:tGeographicalAreaDef"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:attribute name="TriggerId" type="xs:string" use="required"/>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>

    <xs:complexType name="tPointCoordinate">
        <xs:sequence>
            <xs:element name="longitude" type="mcpttloc:tCoordinateType"/>
            <xs:element name="latitude" type="mcpttloc:tCoordinateType"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>

    <xs:complexType name="tCoordinateType">
        <xs:choice minOccurs="1" maxOccurs="1">
            <xs:element name="threebytes" type="mcpttloc:tThreeByteType" minOccurs="0"/>
            <xs:any namespace="##other" processContents="lax"/>
            <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
        </xs:choice>
        <xs:attribute name="type" type="protectionType"/>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>

    <xs:simpleType name="tThreeByteType">
        <xs:restriction base="xs:integer">
            <xs:minInclusive value="0"/>
            <xs:maxInclusive value="16777215"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="tGeographicalAreaDef">
        <xs:sequence>
            <xs:element name="PolygonArea" type="mcpttloc:tPolygonAreaType" minOccurs="0"/>
            <xs:element name="EllipsoidArcArea" type="mcpttloc:tEllipsoidArcType" minOccurs="0"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>
    <xs:complexType name="tPolygonAreaType">
        <xs:sequence>
            <xs:element name="Corner" type="mcpttloc:tPointCoordinate" minOccurs="3"
maxOccurs="15"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>
    <xs:complexType name="tEllipsoidArcType">
        <xs:sequence>
            <xs:element name="Center" type="mcpttloc:tPointCoordinate"/>
            <xs:element name="Radius" type="xs:nonNegativeInteger"/>
            <xs:element name="OffsetAngle" type="xs:unsignedByte"/>
            <xs:element name="IncludedAngle" type="xs:unsignedByte"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>
    <xs:complexType name="anyExtType">
        <xs:sequence>
            <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
        </xs:sequence>
```

```
        </xs:complexType>
</xs:schema>
```

5.6.4   XML schema for MCVideo location information

```
From TS 24.281 clause F.3.2:
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:mcvideoloc="urn:3gpp:ns:mcvideoLocationInfo:1.0"
targetNamespace="urn:3gpp:ns:mcvideoLocationInfo:1.0" elementFormDefault="qualified"
attributeFormDefault="unqualified"
xmlns:xenc="http://www.w3.org/2001/04/xmlenc#">

    <xs:import namespace="http://www.w3.org/2001/04/xmlenc#"/>

    <xs:element name="location-info" id="loc">
        <xs:annotation>
            <xs:documentation>Root element, contains all information related to location
configuration, location request and location reporting for the MCVideo service</xs:documentation>
        </xs:annotation>
        <xs:complexType>
            <xs:choice>
                <xs:element name="Configuration" type="mcvideoloc:tConfigurationType"/>
                <xs:element name="Request" type="mcvideoloc:tRequestType"/>
                <xs:element name="Report" type="mcvideoloc:tReportType"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0"
maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
            </xs:choice>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>
    </xs:element>
    <xs:complexType name="tConfigurationType">
        <xs:sequence>
            <xs:element name="NonEmergencyLocationInformation"
type="mcvideoloc:tRequestedLocationType" minOccurs="0"/>
            <xs:element name="EmergencyLocationInformation" type="mcvideoloc:tRequestedLocationType"
minOccurs="0"/>
            <xs:element name="TriggeringCriteria" type="mcvideoloc:TriggeringCriteriaType"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:attribute name="ConfigScope">
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:enumeration value="Full"/>
                    <xs:enumeration value="Update"/>
                </xs:restriction>
            </xs:simpleType>
        </xs:attribute>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>
    <xs:complexType name="tRequestType">
        <xs:complexContent>
            <xs:extension base="mcvideoloc:tEmptyType">
                <xs:attribute name="RequestId" type="xs:string" use="required"/>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="tReportType">
        <xs:sequence>
            <xs:element name="TriggerId" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="CurrentLocation" type="mcvideoloc:tCurrentLocationType"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:attribute name="ReportID" type="xs:string" use="optional"/>
        <xs:attribute name="ReportType" use="required">
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:enumeration value="Emergency"/>
                    <xs:enumeration value="NonEmergency"/>
                </xs:restriction>
            </xs:simpleType>
        </xs:attribute>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
```

```
        </xs:complexType>
        <xs:complexType name="TriggeringCriteriaType">
            <xs:sequence>
                <xs:element name="CellChange" type="mcvideoloc:tCellChange" minOccurs="0"/>
                <xs:element name="TrackingAreaChange" type="mcvideoloc:tTrackingAreaChangeType"
minOccurs="0"/>
                <xs:element name="PlmnChange" type="mcvideoloc:tPlmnChangeType" minOccurs="0"/>
                <xs:element name="MbmsSaChange" type="mcvideoloc:tMbmsSaChangeType" minOccurs="0"/>
                <xs:element name="MbsfnAreaChange" type="mcvideoloc:tMbsfnAreaChangeType"
minOccurs="0"/>
                <xs:element name="PeriodicReport" type="mcvideoloc:tIntegerAttributeType"
minOccurs="0"/>
                <xs:element name="TravelledDistance" type="mcvideoloc:tIntegerAttributeType"
minOccurs="0"/>
                <xs:element name="McvideoSignallingEvent" type="mcvideoloc:tSignallingEventType"
minOccurs="0"/>
                <xs:element name="GeographicalAreaChange" type="mcvideoloc:tGeographicalAreaChange"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>
        <xs:complexType name="tCellChange">
            <xs:sequence>
                <xs:element name="AnyCellChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>
                <xs:element name="EnterSpecificCell" type="mcvideoloc:tSpecificCellType" minOccurs="0"
maxOccurs="unbounded"/>
                <xs:element name="ExitSpecificCell" type="mcvideoloc:tSpecificCellType" minOccurs="0"
maxOccurs="unbounded"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>
        <xs:complexType name="tEmptyType"/>
        <xs:simpleType name="tEcgi">
            <xs:restriction base="xs:string">
                <xs:pattern value="\d{3}\d{3}[0-1]{28}"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:complexType name="tSpecificCellType">
            <xs:simpleContent>
                <xs:extension base="mcvideoloc:tEcgi">
                    <xs:attribute name="TriggerId" type="xs:string" use="required"/>
                </xs:extension>
            </xs:simpleContent>
        </xs:complexType>
        <xs:complexType name="tEmptyTypeAttribute">
            <xs:complexContent>
                <xs:extension base="mcvideoloc:tEmptyType">
                    <xs:attribute name="TriggerId" type="xs:string" use="required"/>
                </xs:extension>
            </xs:complexContent>
        </xs:complexType>
        <xs:complexType name="tTrackingAreaChangeType">
            <xs:sequence>
                <xs:element name="AnyTrackingAreaChange" type="mcvideoloc:tEmptyTypeAttribute"
minOccurs="0"/>
                <xs:element name="EnterSpecificTrackingArea" type="mcvideoloc:tTrackingAreaIdentity"
minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="ExitSpecificTrackingArea" type="mcvideoloc:tTrackingAreaIdentity"
minOccurs="0" maxOccurs="unbounded"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>
        <xs:simpleType name="tTrackingAreaIdentityFormat">
            <xs:restriction base="xs:string">
                <xs:pattern value="\d{3}\d{3}[0-1]{16}"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:complexType name="tTrackingAreaIdentity">
            <xs:simpleContent>
                <xs:extension base="mcvideoloc:tTrackingAreaIdentityFormat">
                    <xs:attribute name="TriggerId" type="xs:string" use="required"/>
                </xs:extension>
            </xs:simpleContent>
```

```
        </xs:complexType>
        <xs:complexType name="tPlmnChangeType">
            <xs:sequence>
                <xs:element name="AnyPlmnChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>
                <xs:element name="EnterSpecificPlmn" type="mcvideoloc:tPlmnIdentity" minOccurs="0"
maxOccurs="unbounded"/>
                <xs:element name="ExitSpecificPlmn" type="mcvideoloc:tPlmnIdentity" minOccurs="0"
maxOccurs="unbounded"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>
        <xs:simpleType name="tPlmnIdentityFormat">
            <xs:restriction base="xs:string">
                <xs:pattern value="\d{3}\d{3}"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:complexType name="tPlmnIdentity">
            <xs:simpleContent>
                <xs:extension base="mcvideoloc:tPlmnIdentityFormat">
                    <xs:attribute name="TriggerId" type="xs:string" use="required"/>
                </xs:extension>
            </xs:simpleContent>
        </xs:complexType>
        <xs:complexType name="tMbmsSaChangeType">
            <xs:sequence>
                <xs:element name="AnyMbmsSaChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>
                <xs:element name="EnterSpecificMbmsSa" type="mcvideoloc:tMbmsSaIdentity" minOccurs="0"/>
                <xs:element name="ExitSpecificMbmsSa" type="mcvideoloc:tMbmsSaIdentity" minOccurs="0"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>
        <xs:simpleType name="tMbmsSaIdentityFormat">
            <xs:restriction base="xs:integer">
                <xs:minInclusive value="0"/>
                <xs:maxInclusive value="65535"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:complexType name="tMbmsSaIdentity">
            <xs:simpleContent>
                <xs:extension base="mcvideoloc:tMbmsSaIdentityFormat">
                    <xs:attribute name="TriggerId" type="xs:string" use="required"/>
                </xs:extension>
            </xs:simpleContent>
        </xs:complexType>
        <xs:complexType name="tMbsfnAreaChangeType">
            <xs:sequence>
                <xs:element name="EnterSpecificMbsfnArea" type="mcvideoloc:tMbsfnAreaIdentity"
minOccurs="0"/>
                <xs:element name="ExitSpecificMbsfnArea" type="mcvideoloc:tMbsfnAreaIdentity"
minOccurs="0"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>
        <xs:simpleType name="tMbsfnAreaIdentityFormat">
            <xs:restriction base="xs:integer">
                <xs:minInclusive value="0"/>
                <xs:maxInclusive value="255"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:complexType name="tMbsfnAreaIdentity">
            <xs:simpleContent>
                <xs:extension base="mcvideoloc:tMbsfnAreaIdentityFormat">
                    <xs:attribute name="TriggerId" type="xs:string" use="required"/>
                </xs:extension>
            </xs:simpleContent>
        </xs:complexType>
        <xs:complexType name="tIntegerAttributeType">
            <xs:simpleContent>
                <xs:extension base="xs:integer">
                    <xs:attribute name="TriggerId" type="xs:string" use="required"/>
                </xs:extension>
            </xs:simpleContent>
```

```
            </xs:complexType>
            <xs:complexType name="tTravelledDistanceType">
                <xs:sequence>
                    <xs:element name="TravelledDistance" type="xs:positiveInteger"/>
                    <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                    <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
                </xs:sequence>
                <xs:anyAttribute namespace="##any" processContents="lax"/>
            </xs:complexType>
            <xs:complexType name="tSignallingEventType">
                <xs:sequence>
                    <xs:element name="InitialLogOn" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>
                    <xs:element name="GroupCallNonEmergency" type="mcvideoloc:tEmptyTypeAttribute"
minOccurs="0"/>
                    <xs:element name="PrivateCallNonEmergency" type="mcvideoloc:tEmptyTypeAttribute"
minOccurs="0"/>
                    <xs:element name="LocationConfigurationReceived" type="mcvideoloc:tEmptyTypeAttribute"
minOccurs="0"/>
                    <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                    <xs:element name="anyExt" type=" mcvideoloc:anyExtType" minOccurs="0"/>
                </xs:sequence>
                <xs:anyAttribute namespace="##any" processContents="lax"/>
            </xs:complexType>
            <xs:complexType name="tEmergencyEventType">
                <xs:sequence>
                    <xs:element name="GroupCallEmergency" type="mcvideoloc:tEmptyTypeAttribute"
minOccurs="0"/>
                    <xs:element name="GroupCallImminentPeril" type="mcvideoloc:tEmptyTypeAttribute"
minOccurs="0"/>
                    <xs:element name="PrivateCallEmergency" type="mcvideoloc:tEmptyTypeAttribute"
minOccurs="0"/>
                    <xs:element name="InitiateEmergencyAlert" type="mcvideoloc:tEmptyTypeAttribute"
minOccurs="0"/>
                    <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                    <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
                </xs:sequence>
                <xs:anyAttribute namespace="##any" processContents="lax"/>
            </xs:complexType>
            <xs:complexType name="tRequestedLocationType">
                <xs:sequence>
                    <xs:element name="ServingEcgi" type="mcvideoloc:tEmptyType" minOccurs="0"/>
                    <xs:element name="NeighbouringEcgi" type="mcvideoloc:tEmptyType" minOccurs="0"
maxOccurs="unbounded"/>
                    <xs:element name="MbmsSaId" type="mcvideoloc:tEmptyType" minOccurs="0"/>
                    <xs:element name="MbsfnArea" type="mcvideoloc:tEmptyType" minOccurs="0"/>
                    <xs:element name="GeographicalCordinate" type="mcvideoloc:tEmptyType" minOccurs="0"/>
                    <xs:element name="minimumIntervalLength" type="xs:positiveInteger"/>
                    <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                    <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
                </xs:sequence>
                <xs:anyAttribute namespace="##any" processContents="lax"/>
            </xs:complexType>

            <xs:complexType name="tCurrentLocationType">
                <xs:sequence>
                    <xs:element name="CurrentServingEcgi" type="mcvideoloc:tLocationType" minOccurs="0"/>
                    <xs:element name="NeighbouringEcgi" type="mcvideoloc:tLocationType" minOccurs="0"
maxOccurs="unbounded"/>
                    <xs:element name="MbmsSaId" type="mcvideoloc:tLocationType" minOccurs="0"/>
                    <xs:element name="MbsfnArea" type="mcvideoloc:tLocationType" minOccurs="0"/>
                    <xs:element name="CurrentCoordinate" type="mcvideoloc:tPointCoordinate" minOccurs="0"/>
                    <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                    <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
                </xs:sequence>
                <xs:anyAttribute namespace="##any" processContents="lax"/>
            </xs:complexType>

            <xs:simpleType name="protectionType">
                <xs:restriction base="xs:string">
                    <xs:enumeration value="Normal"/>
                    <xs:enumeration value="Encrypted"/>
                </xs:restriction>
            </xs:simpleType>

            <xs:complexType name="tLocationType">
                <xs:choice minOccurs="1" maxOccurs="1">
                    <xs:element name="Ecgi" type="mcvideoloc:tEcgi" minOccurs="0"/>
                    <xs:element name="SaId" type="mcvideoloc:tMbmsSaIdentity" minOccurs="0"/>
```

```
            <xs:element name="MbsfnAreaId" type="mcvideoloc:tMbsfnAreaIdentity" minOccurs="0"/>
            <xs:any namespace="##other" processContents="lax"/>
            <xs:element name="anyExt" type="mcvideoinfo:anyExtType" minOccurs="0"/>
        </xs:choice>
        <xs:attribute name="type" type="protectionType"/>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>

    <xs:complexType name="tGeographicalAreaChange">
        <xs:sequence>
            <xs:element name="AnyAreaChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>
            <xs:element name="EnterSpecificAreaType" type="mcvideoloc:tSpecificAreaType"
minOccurs="0"/>
            <xs:element name="ExitSpecificAreaType" type="mcvideoloc:tSpecificAreaType"
minOccurs="0"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>
    <xs:complexType name="tSpecificAreaType">
        <xs:sequence>
            <xs:element name="GeographicalArea" type="mcvideoloc:tGeographicalAreaDef"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:attribute name="TriggerId" type="xs:string" use="required"/>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>

    <xs:complexType name="tPointCoordinate">
        <xs:sequence>
            <xs:element name="longitude" type="mcvideoloc:tCoordinate"/>
            <xs:element name="latitude" type="mcvideoloc:tCoordinate"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>

    <xs:complexType name="tCoordinateType">
        <xs:choice minOccurs="1" maxOccurs="1">
            <xs:element name="threebytes" type="mcvideoloc:tThreeByteType" minOccurs="0"/>
            <xs:any namespace="##other" processContents="lax"/>
            <xs:element name="anyExt" type="mcvideoinfo:anyExtType" minOccurs="0"/>
        </xs:choice>
        <xs:attribute name="type" type="protectionType"/>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>

    <xs:simpleType name="tThreeByteType">
        <xs:restriction base="xs:integer">
            <xs:minInclusive value="0"/>
            <xs:maxInclusive value="16777215"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="tGeographicalAreaDef">
        <xs:sequence>
            <xs:element name="PolygonArea" type="mcvideoloc:tPolygonAreaType" minOccurs="0"/>
            <xs:element name="EllipsoidArcArea" type="mcvideoloc:tEllipsoidArcType" minOccurs="0"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>
    <xs:complexType name="tPolygonAreaType">
        <xs:sequence>
            <xs:element name="Corner" type="mcvideoloc:tPointCoordinate" minOccurs="3"
maxOccurs="15"/>
            <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
        </xs:sequence>
        <xs:anyAttribute namespace="##any" processContents="lax"/>
    </xs:complexType>
    <xs:complexType name="tEllipsoidArcType">
        <xs:sequence>
            <xs:element name="Center" type="mcvideoloc:tPointCoordinate"/>
            <xs:element name="Radius" type="xs:nonNegativeInteger"/>
```

```
                <xs:element name="OffsetAngle" type="xs:unsignedByte"/>
                <xs:element name="IncludedAngle" type="xs:unsignedByte"/>
                <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>
            </xs:sequence>
            <xs:anyAttribute namespace="##any" processContents="lax"/>
        </xs:complexType>
        <xs:complexType name="anyExtType">
            <xs:sequence>
                <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
            </xs:sequence>
        </xs:complexType>
</xs:schema>
```

Annex A (informative):
Change history

						Change history	
Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
2017-02	R5#74	R5-171298	-	-	-	Introduction of TS 36.579-1.	0.0.1
2017-05	R5#75	R5-172100	-	-	-	Introduction of default message content for some media control messages, some generic procedures from R5-172078 Default MCPTT media plane control messages R5-172079 Generic MCPTT procedures	0.0.2
2017-06	RAN5#75	-	-	-	-	lifted to v0.1.0 because of technical contents	0.1.0
2017-08	RAN5#76	R5-173766	-	-	-	Implemented approved: R5-173702 'Various updates of MCPTT TS 36579-1' R5-173703 'Update of MCPTT generic procedures' R5-173704 'New Generic procedures ProSe and MCPTT' R5-173705 'Update default media plane control messages' R5-173706 'Update of MCPTT Default MCPTT call control Off-network messages' R5-173707 'Update of MCPTT MIKEY-SAKKE I.MESSAGE' R5-173766 'Update of TS 36.579-1 to version 0.2.0' R5-174599 'SIP message defaults for 36.579-1' R5-174600 'MCPTT Off-Network Group Call Signaling Message Defaults'	0.2.0
2017-12	RAN5#77	R5-176835	-	-	-	Implemented approved: R5-177000 "Update of SIP Message Defaults for MCPTT" R5-176345 "Update of Specific SIP messages in Generic procedures" R5-177001 "Update of Generic procedures for SIP registration" R5-176347 "New Generic Procedure for ProSe group calls Announcing-Discoveree procedure for group member discovery" R5-176348 "New Generic Procedure for ProSe group calls Monitoring/Discoverer procedure for group member discovery" R5-177002 "Update with UE Configuration Defaults" - References updates	0.3.0
2017-12	RAN#78	RP-172182	-	-	-	Draft version for information purposes to the RAN PIneary	1.0.0
2018-03	RAN5#78	R5-180684	-	-	-	Implemented approved: R5-180534 "Update of Section 5.5.2 and 5.5.3 for TS 36.579-1" R5-180535 "Update of Section 5.5.5 for TS 36.579-1" R5-180536 "Update of Section 5.5.6 for TS 36.579-1" R5-181241 "Update of Section 5.5.9 TS 36.579-1" R5-180633 "Update of Default HTTP message and other information elements" R5-180634 "Update of Default MCPTT configuration management messages" R5-180635 "New Generic procedures for MCPTT Authorization/Configuration and Key Generation" R5-18063 "New Generic procedures for MCPTT communication in E-UTRA / Change of cells" R5-180637 "Generic Test Procedure for MCPTT communication over MBMS" R5-180638 "Various updates to 36579-1"	1.1.0
2018-03	RAN#79	RP-180126	-	-	-	Draft version for approval to move the spec under revision control to the RAN Plenary	2.0.0
2018-03	RAN#79	-	-	-	-	Editorial changes and promoted to v13.0.0	13.0.0
2018-06	RAN#80	R5-182418	0001	-	F	Addition and correction of GNSS information	13.1.0
2018-06	RAN#80	R5-182419	0002	-	F	Editorial correction of typos and incorrect references	13.1.0
2018-06	RAN#80	R5-182430	0003	-	F	Editorial Update of 36.579-2 for style H6	13.1.0
2018-06	RAN#80	R5-182431	0004	-	F	Update of TC 5.1 for MCPTT APN	13.1.0
2018-06	RAN#80	R5-182432	0005	-	F	Updates of Location information messages in 36.579-2	13.1.0
2018-06	RAN#80	R5-182489	0008	-	F	Update of MCPTT TC 6.1.1.1	13.1.0
2018-06	RAN#80	R5-182510	0009	-	F	Correction to MCPTT TC of 6.1.1.8, 6.1.1.11, 6.1.2.5 and 6.1.2.7	13.1.0
2018-06	RAN#80	R5-183167	0006	1	F	Updates of TC 6.3.1	13.1.0
2018-06	RAN#80	R5-183168	0007	1	F	Updates of TC 6.3.2	13.1.0
2018-09	RAN#81	R5-185084	0009	-	F	Update to TLS setup	13.2.0
2018-09	RAN#81	R5-185122	0007	1	F	Corrections to MCPTT Authorization	13.2.0
2018-09	RAN#81	R5-184685	0008	-	F	Update of default message contents for new Rel-14 TCs for Private Call Call-Back and Ambient listening call	14.0.0
2018-12	RAN#82	R5-186878	0010	-	F	Correction to Generic Test Procedure for MCPTT pre-established session establishment CO	14.1.0
2018-12	RAN#82	R5-186879	0011	-	F	Editorial update of the default SDP and Resource-list Messages	14.1.0
2018-12	RAN#82	R5-186880	0012	-	F	Update of default MCPTT media plane control messages and other information elements to reflect latest Rel-13 core specs	14.1.0
2018-12	RAN#82	R5-186881	0013	-	F	Update of XML schema for MCPTT location information to reflect latest Rel-13 core specs	14.1.0
2018-12	RAN#82	R5-187709	0014	1	F	Corrections to clause 5.5.9 of 36.579-1	14.1.0
2018-12	RAN#82	R5-187710	0015	1	F	Corrections to clause 5.5.7.1 of 36.579-1	14.1.0

2018-12	RAN#82	R5-187711	0016	1	F	Update for Resource-lists in 36.579-1	14.1.0
2018-12	RAN#82	R5-187712	0017	1	F	Correction to Table 5.5.1-1 in 36.579-1	14.1.0
2018-12	RAN#82	R5-187713	0018	1	F	Correction to Table 5.5.4.10.1-1 in 36.579-1	14.1.0
2018-12	RAN#82	R5-187714	0019	1	F	Correction to Table 5.5.4.2-1 in 36.579-1	14.1.0
2018-12	RAN#82	R5-187715	0020	1	F	Correction to SIP NOTIFY message in 36.579-1	14.1.0
2018-12	RAN#82	R5-187716	0021	1	F	Correction to SIP SUBSCRIBE message in 36.579-1	14.1.0
2018-12	RAN#82	R5-187717	0022	1	F	Update of Generic Test 5.3.2 in 36.579-1	14.1.0
2019-03	RAN#83	R5-191210	0023	-	F	Correction of default contents in SIP INVITE from the UE	14.2.0
2019-03	RAN#83	R5-191902	0024	-	F	Update to MCPTT floor control default messages	14.2.0
2019-03	RAN#83	R5-192155	0025	-	F	Update 36.579-1 Section 4.2 and 4.3	14.2.0
2019-03	RAN#83	R5-192156	0026	-	F	Update 36.579-1 Delete clauses inside the present spec	14.2.0
2019-03	RAN#83	R5-192157	0027	-	F	Update 36.579-1 Blue text removal	14.2.0
2019-06	RAN#84	R5-194001	0028	-	F	Correction of default contents in the SIP INVITE from the UE	14.3.0
2019-06	RAN#84	R5-194665	0030	-	F	Typo for MCPTT in 36.579-1	14.3.0
2019-06	RAN#84	R5-195216	0029	1	F	Update of UE registration procedure for location info configuration	14.3.0
2019-06	RAN#84	R5-195217	0031	1	F	References and derivation path updates for SIP messages	14.3.0
2019-09	RAN#85	R5-196773	0045	-	F	Updates to conditions Table 5.5.1-1	14.4.0
2019-09	RAN#85	R5-196983	0046	-	F	Correction of SIP messages	14.4.0
2019-09	RAN#85	R5-197133	0044	1	F	Update for MCVideo and MCData services	14.4.0
2019-09	RAN#85	R5-197229	0038	1	F	Correction of default contents in the SIP REGISTER	14.4.0
2019-09	RAN#85	R5-197293	0043	2	F	Update to Generic Procedure 5.3.3	14.4.0
2019-09	RAN#85	R5-197294	0047	-	F	Correction and addition of references or values and editorial comments	14.4.0
2019-09	RAN#85	R5-197295	0041	2	F	Corrections to MCPTT UE registration procedures	14.4.0
2019-12	RAN#86	R5-198159	0050		F	Corrections to SIP signalling for MCPTT CO and CT communication procedures	14.5.0
2019-12	RAN#86	R5-199043	0049	1	F	Correction to default HTTP messages	14.5.0
2019-12	RAN#86	R5-199044	0051	1	F	Corrections to MCPTT UE registration procedures	14.5.0
2019-12	RAN#86	R5-199045	0052	1	F	Additions of further references	14.5.0
2019-12	RAN#86	R5-199046	0053	1	F	Corrections related to MIKEY protocol	14.5.0
2019-12	RAN#86	R5-199047	0054	1	F	Correction to default messages for MCPTT group management and configuration management	14.5.0
2019-12	RAN#86	R5-199048	0055	1	F	Correction of default SDP message and other information elements	14.5.0
2019-12	RAN#86	R5-199051	0056	1	F	SDP Default for MCVideo and MCData	14.5.0
2019-12	RAN#86	R5-199052	0058	1	F	Adding MCVideo Transmission Control Messages	14.5.0
2019-12	RAN#86	R5-199053	0060	1	F	Updates TS 33.179 references to TS 33.180	14.5.0
2019-12	RAN#86	R5-199077	0048	2	F	Correction to default SIP messages	14.5.0
2020-03	RAN#87	R5-200264	0063	-	F	Corrections to default SIP message and other information elements	14.6.0
2020-03	RAN#87	R5-200265	0064	-	F	Addition of further references	14.6.0
2020-03	RAN#87	R5-200301	0065	-	F	Corrections to default HTTP message and other information elements	14.6.0
2020-03	RAN#87	R5-200385	0066	-	F	Corrections to default MCPTT configuration management messages and other information elements	14.6.0
2020-03	RAN#87	R5-201220	0062	1	F	Corrections to MCPTT UE registration procedures	14.6.0
2020-06	RAN#88	R5-202552	0069	1	F	Correcting core spec reference for APN requirements	14.7.0
2020-06	RAN#88	R5-202698	0073	1	F	SDP updates for MCVideo and MCData	14.7.0
2020-06	RAN#88	R5-202699	0076	1	F	Default MCVideo Transmission Control Messages	14.7.0
2020-06	RAN#88	R5-203001	0077	1	F	SIP 202 (Accepted) message default	14.7.0
2020-06	RAN#88	R5-203073	0067	1	F	Updates to MCX generic test procedures and default message contents	14.7.0
2020-06	RAN#88	R5-203074	0068	1	F	Updates to generic test procedure for MCPTT Authorization/Configuration and Key Generation	14.7.0
2020-09	RAN#89	R5-204226	0082	-	F	Addition of XML schema for MCVideo location information	14.8.0
2020-09	RAN#89	R5-204229	0083	-	F	MCVideo and MCData in Clause 4	14.8.0
2020-09	RAN#89	R5-204490	0084	1	F	MCVideo and MCData in Clause 5.5.7	14.8.0
2020-09	RAN#89	R5-204491	0085	1	F	Updates to UE configuration document	14.8.0
2020-09	RAN#89	R5-204492	0086	1	F	Update of content with Rel-14 requirements	14.8.0
2020-09	RAN#89	R5-204533	0078	1	F	New MCPTT Common Procedures for CT/CO session establishment	14.8.0
2020-09	RAN#89	R5-204534	0079	1	F	Updates to MCX generic test procedures and default message contents	14.8.0
2020-09	RAN#89	R5-204535	0081	1	F	Description of the distribution of MSCCK and MuSiK	14.8.0
2020-12	RAN#90	R5-206053	0094		F	PIDF body modifications	14.9.0
2020-12	RAN#90	R5-206084	0096		F	Condition updates for default MCS configuration management messages	14.9.0
2020-12	RAN#90	R5-206108	0097		F	Update of MCPTT Floor Control Messages for Rel-14	14.9.0
2020-12	RAN#90	R5-206445	0087	1	F	Correction to Generic Test Procedure for MCPTT pre-established session establishment CO	14.9.0
2020-12	RAN#90	R5-206446	0088	1	F	Correction to MCPTT Common Procedures for CT/CO session establishment	14.9.0
2020-12	RAN#90	R5-206447	0089	1	F	New MCPTT generic test procedures	14.9.0
2020-12	RAN#90	R5-206448	0090	1	F	Update to Default Message Content	14.9.0

2020-12	RAN#90	R5-206449	0091	1	F	Updates for Group Communications Key retrieval	14.9.0
2020-12	RAN#90	R5-206450	0093	1	F	Second group configuration retrieval process modification	14.9.0
2020-12	RAN#90	R5-206451	0095	1	F	Existing Generic Test Procedures Updates	14.9.0
2020-12	RAN#90	R5-206422	0098	1	F	Update of MCPTT Floor Control Messages for Rel-15	15.0.0
2020-12	RAN#90	R5-206423	0099	1	F	MCPTT Configuration Doc Update for Rel-15 Location	15.0.0
2021-03	RAN#91	R5-210205	0101	-	F	Correction to Generic Test Procedure for MCPTT CT group call establishment, manual commencement	15.1.0
2021-03	RAN#91	R5-210207	0103	-	F	New MCPTT generic test procedures	15.1.0
2021-03	RAN#91	R5-210208	0104	-	F	Update to Default HTTP message - POST	15.1.0
2021-03	RAN#91	R5-210210	0106	-	F	Update to Default Message Content - INVITE	15.1.0
2021-03	RAN#91	R5-210211	0107	-	F	Update to Default Message Content - Pidf	15.1.0
2021-03	RAN#91	R5-210213	0109	-	F	Update to Default Message Content - SDP	15.1.0
2021-03	RAN#91	R5-210214	0110	-	F	Update to Default Message Content - SIP 200 (OK)	15.1.0
2021-03	RAN#91	R5-210215	0111	-	F	Update to Default Message Content - UPDATE	15.1.0
2021-03	RAN#91	R5-210216	0112	-	F	Update to Default Message Content AFFILIATION-COMMAND	15.1.0
2021-03	RAN#91	R5-210217	0113	-	F	Update to Default Message Content MIKEY-SAKKE I_MESSAGE	15.1.0
2021-03	RAN#91	R5-210218	0114	-	F	Update to Default Message Content SIP 180 (Ringing) and SIP 183 (Session progress)	15.1.0
2021-03	RAN#91	R5-210219	0115	-	F	Update to Default Message Content SIP MESSAGE	15.1.0
2021-03	RAN#91	R5-210220	0116	-	F	Update to Default Message Content SUBSCRIBE	15.1.0
2021-03	RAN#91	R5-210221	0117	-	F	Update to the MCS GKTP document	15.1.0
2021-03	RAN#91	R5-210319	0118	-	F	Update to references clause	15.1.0
2021-03	RAN#91	R5-210994	0120	-	F	Update to default MCPTT media plane control messages	15.1.0
2021-03	RAN#91	R5-211354	0121	1	F	Update of References in 36.579-1	15.1.0
2021-03	RAN#91	R5-211517	0100	1	F	Addition of a generic procedure for MCPTT radio bearer establishment for use of pre-established session	15.1.0
2021-03	RAN#91	R5-211518	0102	1	F	Correction to generic test procedure for MCPTT pre-established session establishment	15.1.0
2021-03	RAN#91	R5-211519	0108	1	F	Update to Default Message Content - REFER and Resource-List	15.1.0
2021-03	RAN#91	R5-211520	0119	1	F	MCPTT Info Corrections	15.1.0
2021-06	RAN#92	R5-212145	0123	-	F	Removal of redundant references to TS 36.579-1	15.2.0
2021-06	RAN#92	R5-212146	0124	-	F	Addition of SIP 487 default message and update of User Profile for first-to-call and request remotely initiated call	15.2.0
2021-06	RAN#92	R5-212288	0128	-	F	Correction to generic test procedure 5.3.13	15.2.0
2021-06	RAN#92	R5-212289	0129	-	F	Correction to generic test procedure 5.3.16	15.2.0
2021-06	RAN#92	R5-212290	0130	-	F	Correction to generic test procedure 5.3.19	15.2.0
2021-06	RAN#92	R5-212291	0131	-	F	Correction to generic test procedure 5.3.22	15.2.0
2021-06	RAN#92	R5-212293	0133	-	F	Correction to generic test procedure 5.3.5	15.2.0
2021-06	RAN#92	R5-212294	0134	-	F	Correction to Resource List message content	15.2.0
2021-06	RAN#92	R5-212295	0135	-	F	Correction to SDP message content	15.2.0
2021-06	RAN#92	R5-212298	0138	-	F	Update to Default Message Content - Connect	15.2.0
2021-06	RAN#92	R5-212299	0139	-	F	Update to Default Message Content - INVITE	15.2.0
2021-06	RAN#92	R5-212301	0141	-	F	Update to Default Message Content - SIP MESSAGE	15.2.0
2021-06	RAN#92	R5-212302	0142	-	F	Update to Default Message Content - SIP PUBLISH	15.2.0
2021-06	RAN#92	R5-212303	0143	-	F	Update to Default Message Content SIP 4xx	15.2.0
2021-06	RAN#92	R5-212304	0144	-	F	Update to general conditions	15.2.0
2021-06	RAN#92	R5-212305	0145	-	F	Update to references clause	15.2.0
2021-06	RAN#92	R5-212354	0146	-	F	Correction to default message content Location-Info	15.2.0
2021-06	RAN#92	R5-212665	0148	-	F	Additions to MCPTT Group Configuration	15.2.0
2021-06	RAN#92	R5-213265	0151	-	F	Additions to MCPTT Floor Control Defaults 5.5.6	15.2.0
2021-06	RAN#92	R5-213266	0152	-	F	Additions to MCPTT Group Configuration Defaults 5.5.7	15.2.0
2021-06	RAN#92	R5-213267	0153	-	F	Update of MCVideo Transmission Control Default Messages 5.5.11	15.2.0
2021-06	RAN#92	R5-213588	0149	1	F	Addition of Functional Alias Generic Procedures	15.2.0
2021-06	RAN#92	R5-213589	0150	1	F	Addition of Functional Alias to MCPTT Config Documents 5.5.8	15.2.0
2021-06	RAN#92	R5-213653	0126	1	F	Correction to Default Message content HTTP POST, PUT and DELETE	15.2.0
2021-06	RAN#92	R5-213654	0127	1	F	Correction to default message content MCPTT-Info	15.2.0
2021-06	RAN#92	R5-213655	0132	1	F	Correction to generic test procedure 5.3.3	15.2.0
2021-06	RAN#92	R5-213656	0137	1	F	New generic test procedure for group creation	15.2.0
2021-06	RAN#92	R5-213657	0140	1	F	Update to Default Message Content - REFER	15.2.0
2021-09	RAN#93	R5-214625	0154	-	F	Addition of clause 5.3.27 - Generic Test Procedure for MCPTT CO Temporary Group Creation	15.3.0
2021-09	RAN#93	R5-214626	0155	-	F	Addition of clause 5.3.28 - Generic Test Procedure for MCPTT CO Temporary Group Tear Down	15.3.0
2021-09	RAN#93	R5-214630	0159	-	F	Correction of clause 5.3.24 - Generic Test Procedure for UE intitated MCPTT functional alias status determination and subscription	15.3.0
2021-09	RAN#93	R5-214631	0160	-	F	Correction of clause 5.3.25 - Generic Test Procedure for UE inititated MCPTT functional alias status change	15.3.0
2021-09	RAN#93	R5-214632	0161	-	F	Correction of clause 5.3.26 - Generic Test Procedure for MCPTT CO Group Creation	15.3.0
2021-09	RAN#93	R5-214633	0162	-	F	Correction of clause 5.3.3 – Generic Test Procedure for MCPTT pre-established session establishment CO	15.3.0

2021-09	RAN#93	R5-214635	0164	-	F	Correction of clause 5.5.2.11 – SIP PUBLISH	15.3.0
2021-09	RAN#93	R5-214646	0175	-	F	Correction of clause 5.5.4.3 - HTTP POST	15.3.0
2021-09	RAN#93	R5-214918	0182	-	F	MCX IUT	15.3.0
2021-09	RAN#93	R5-215370	0183	-	F	Correction of General extension payload in Mikey message	15.3.0
2021-09	RAN#93	R5-215383	0184	-	F	Correction of XCAP Root URI in HTTP GET Requests	15.3.0
2021-09	RAN#93	R5-215728	0156	1	F	Addition of clause 5.3.29 - Generic Test Procedure for MCPTT Subscription and Notification	15.3.0
2021-09	RAN#93	R5-215729	0157	1	F	Correction of clause 5.3.15 – Generic Test Procedure for MCPTT CO session modification without implicit Floor Control	15.3.0
2021-09	RAN#93	R5-215730	0158	1	F	Correction of clause 5.3.22 - Generic Test Procedure for NW initiated temporary group creation	15.3.0
2021-09	RAN#93	R5-215731	0163	1	F	Correction of clause 5.5.1 – General	15.3.0
2021-09	RAN#93	R5-215732	0165	1	F	Correction of clause 5.5.2.14 – SIP SUBSCRIBE	15.3.0
2021-09	RAN#93	R5-215733	0166	1	F	Correction of clause 5.5.2.5 – SIP INVITE	15.3.0
2021-09	RAN#93	R5-215734	0167	1	F	Correction of clause 5.5.2.8 – SIP NOTIFY	15.3.0
2021-09	RAN#93	R5-215735	0168	1	F	Correction of clause 5.5.3.1 – SDP Message	15.3.0
2021-09	RAN#93	R5-215736	0169	1	F	Correction of clause 5.5.3.11 – PoC-Settings	15.3.0
2021-09	RAN#93	R5-215737	0170	1	F	Correction of clause 5.5.3.12 – XCAP-DIFF	15.3.0
2021-09	RAN#93	R5-215738	0171	1	F	Correction of clause 5.5.3.2 – MCS Info Lists	15.3.0
2021-09	RAN#93	R5-215739	0172	1	F	Correction of clause 5.5.3.3 – Resource Lists	15.3.0
2021-09	RAN#93	R5-215740	0173	1	F	Correction of clause 5.5.3.5 – PIDF	15.3.0
2021-09	RAN#93	R5-215741	0174	1	F	Correction of clause 5.5.4.1 – General conditions	15.3.0
2021-09	RAN#93	R5-215742	0176	1	F	Correction of clause 5.5.4.4 - HTTP PUT	15.3.0
2021-09	RAN#93	R5-215743	0177	1	F	Correction of clause 5.5.4.5 - HTTP DELETE	15.3.0
2021-09	RAN#93	R5-215745	0179	1	F	Correction of clause 5.5.4.7 - HTTP 201 (Created)	15.3.0
2021-09	RAN#93	R5-215746	0180	1	F	Correction of clause 5.5.6.7 - Floor Taken	15.3.0
2021-09	RAN#93	R5-215747	0181	1	F	Correction of clause 5.5.7.1 - MCPTT Group Configuration	15.3.0
2021-09	RAN#93	R5-216282	0185	1	F	Addition of MIKEY-SAKKE I_MESSAGE Table 5.5.9.1-1A CSK download sent by the SS	15.3.0
2021-09	RAN#93	-	-	-	-	Editorial fixes	15.3.1
2021-12	RAN#94	R5-216663	0187	-	F	Correction of clause 5.5.2.11 - SIP PUBLISH	15.4.0
2021-12	RAN#94	R5-216664	0188	-	F	Correction of clause 5.5.2.12 - SIP REFER	15.4.0
2021-12	RAN#94	R5-216665	0189	-	F	Correction of clause 5.5.2.13 - SIP REGISTER	15.4.0
2021-12	RAN#94	R5-216667	0191	-	F	Correction of clause 5.5.2.16.3 - SIP 183 (Session Progress)	15.4.0
2021-12	RAN#94	R5-216668	0192	-	F	Correction of clause 5.5.2.17.1 - SIP 200 (OK)	15.4.0
2021-12	RAN#94	R5-216669	0193	-	F	Correction of clause 5.5.2.2 - SIP BYE	15.4.0
2021-12	RAN#94	R5-216670	0194	-	F	Correction of clause 5.5.2.5 - SIP INVITE	15.4.0
2021-12	RAN#94	R5-216671	0195	-	F	Correction of clause 5.5.2.7 - SIP MESSAGE	15.4.0
2021-12	RAN#94	R5-216672	0196	-	F	Correction of clause 5.5.2.8 - SIP NOTIFY	15.4.0
2021-12	RAN#94	R5-216674	0198	-	F	Correction of clause 5.5.3.10 - MCData Protected Payload Message	15.4.0
2021-12	RAN#94	R5-216676	0200	-	F	Correction of clause 5.5.3.2 - MCPTT-Info from the UE	15.4.0
2021-12	RAN#94	R5-216677	0201	-	F	Correction of clause 5.5.3.3 - Resource-lists	15.4.0
2021-12	RAN#94	R5-216678	0202	-	F	Correction of clause 5.5.3.4 - Location-info	15.4.0
2021-12	RAN#94	R5-216679	0203	-	F	Correction of clause 5.5.3.6 - SIMPLE-FILTER	15.4.0
2021-12	RAN#94	R5-216680	0204	-	F	Correction of clause 5.5.3.8 - SDS Signalling Payload	15.4.0
2021-12	RAN#94	R5-216681	0205	-	F	Correction of clause 5.5.3.9 - MCData Data Payload	15.4.0
2021-12	RAN#94	R5-216682	0206	-	F	Correction of clause 5.5.4 - Default HTTP message and other information elements	15.4.0
2021-12	RAN#94	R5-216684	0208	-	F	Correction of clause 5.5.7 - Default MCPTT group management messages and other information elements	15.4.0
2021-12	RAN#94	R5-216686	0210	-	F	Correction of clause 5.5.9.1 - MIKEY-SAKKE I_MESSAGE	15.4.0
2021-12	RAN#94	R5-216687	0211	-	F	Correction of Generic Test Procedure for MCPTT CO call establishment using a pre-established session 5.3.9	15.4.0
2021-12	RAN#94	R5-216689	0213	-	F	Correction of Generic Test Procedure for MCPTT CO call release keeping the pre-established session 5.3.11	15.4.0
2021-12	RAN#94	R5-216690	0214	-	F	Correction of Generic Test Procedure for MCPTT CO Group Creation 5.3.26	15.4.0
2021-12	RAN#94	R5-216691	0215	-	F	Correction of Generic Test Procedure for MCPTT CO session establishment/modification without provisional responses other than 100 Trying 5.3.7	15.4.0
2021-12	RAN#94	R5-216692	0216	-	F	Correction of Generic Test Procedure for MCPTT CO session modification without implicit Floor Control 5.3.15	15.4.0
2021-12	RAN#94	R5-216693	0217	-	F	Correction of Generic Test Procedure for MCPTT CO Temporary Group Creation 5.3.27	15.4.0
2021-12	RAN#94	R5-216694	0218	-	F	Correction of Generic Test Procedure for MCPTT CO Temporary Group Tear Down 5.3.28	15.4.0
2021-12	RAN#94	R5-216695	0219	-	F	Correction of Generic Test Procedure for MCPTT CT call release 5.3.12	15.4.0
2021-12	RAN#94	R5-216696	0220	-	F	Correction of Generic Test Procedure for MCPTT CT call release keeping the pre-established session 5.3.13	15.4.0
2021-12	RAN#94	R5-216697	0221	-	F	Correction of Generic Test Procedure for MCPTT CT group call establishment, manual commencement 5.3.5	15.4.0

2021-12	RAN#94	R5-216698	0222	-	F	Correction of Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying 5.3.4	15.4.0
2021-12	RAN#94	R5-216700	0224	-	F	Correction of Generic Test Procedure for MCPTT Subscription and Notification 5.3.29	15.4.0
2021-12	RAN#94	R5-216701	0225	-	F	Correction of Generic Test Procedure for MCPTT UE registration 5.4.2	15.4.0
2021-12	RAN#94	R5-216702	0226	-	F	Correction of Generic Test Procedure for UE initiated MCPTT functional alias status change 5.3.25	15.4.0
2021-12	RAN#94	R5-216703	0227	-	F	Correction of Generic Test Procedure for UE initiated MCPTT functional alias status determination and subscription 5.3.24	15.4.0
2021-12	RAN#94	R5-217632	0229	-	F	Update of Clause 5.5.8.3 MCPTT User Profile	15.4.0
2021-12	RAN#94	R5-217905	0186	1	F	5.5.7.3 MCDATA Group Configuration Updates	15.4.0
2021-12	RAN#94	R5-217964	0190	1	F	Correction of clause 5.5.2.14 - SIP SUBSCRIBE	15.4.0
2021-12	RAN#94	R5-217965	0197	1	F	Correction of clause 5.5.3.1 - SDP Message	15.4.0
2021-12	RAN#94	R5-217966	0199	1	F	Correction of clause 5.5.3.12 - Xcap-diff documents	15.4.0
2021-12	RAN#94	R5-217967	0207	1	F	Correction of clause 5.5.6.1 - 5.5.6.13 - Default MCPTT media plane control messages from UE	15.4.0
2021-12	RAN#94	R5-217968	0212	1	F	Correction of Generic Test Procedure for MCPTT CO call release 5.3.10	15.4.0
2021-12	RAN#94	R5-217985	0209	1	F	Correction of clause 5.5.8 - Default MCS configuration management messages and other information elements	15.4.0
2021-12	RAN#94	R5-217986	0223	1	F	Correction of Generic Test Procedure for MCPTT pre-established session establishment CO 5.3.3	15.4.0
2021-12	RAN#94	R5-217987	0228	1	F	New MCX generic test procedures for SIP MESSAGE message flows	15.4.0
2022-03	RAN#95	R5-220461	0231	-	F	Correction of clause 2 - References	15.5.0
2022-03	RAN#95	R5-220462	0232	-	F	Correction of clause 5.4 - Generic test procedures for UE operation over E-UTRA/EPC	15.5.0
2022-03	RAN#95	R5-220463	0233	-	F	Correction of clause 5.5.11 - Default MCVideo Transmission Control Messages and other Information Elements	15.5.0
2022-03	RAN#95	R5-220464	0234	-	F	Correction of clause 5.5.12 - MSRP Messages for MCData	15.5.0
2022-03	RAN#95	R5-220465	0235	-	F	Correction of clause 5.5.2.16 - SIP 1xx	15.5.0
2022-03	RAN#95	R5-220466	0236	-	F	Correction of clause 5.5.2.17 - SIP 2xx	15.5.0
2022-03	RAN#95	R5-220467	0237	-	F	Correction of clause 5.5.2.5 - SIP INVITE	15.5.0
2022-03	RAN#95	R5-220468	0238	-	F	Correction of clause 5.5.2.7 - SIP MESSAGE	15.5.0
2022-03	RAN#95	R5-220469	0239	-	F	Correction of clause 5.5.2-11 - SIP PUBLISH	15.5.0
2022-03	RAN#95	R5-220470	0240	-	F	Correction of clause 5.5.2-8 - SIP NOTIFY	15.5.0
2022-03	RAN#95	R5-220472	0242	-	F	Correction of clause 5.5.3.10 - MCData Protected Payload Message	15.5.0
2022-03	RAN#95	R5-220474	0244	-	F	Correction of clause 5.5.3.8 - MCData Data signalling messages	15.5.0
2022-03	RAN#95	R5-220475	0245	-	F	Correction of clause 5.5.4 - Default HTTP message and other information elements	15.5.0
2022-03	RAN#95	R5-220476	0246	-	F	Correction of clause 5.5.6 - Default MCPTT media plane control messages and other information elements	15.5.0
2022-03	RAN#95	R5-220477	0247	-	F	Correction of clause 5.5.7 - Default MCX group management messages and other information elements	15.5.0
2022-03	RAN#95	R5-220478	0248	-	F	Correction of clause 5.5.8 - Default MCS configuration management messages and other information elements	15.5.0
2022-03	RAN#95	R5-220479	0249	-	F	Correction of clause 5.5.9.1 - CSK download by the SS	15.5.0
2022-03	RAN#95	R5-220480	0250	-	F	Removal of clause 5.5.3.13	15.5.0
2022-03	RAN#95	R5-221545	0230	1	F	Additional Rel-15 parameters for MCVideo User Profile 5.5.8.7	15.5.0
2022-03	RAN#95	R5-222026	0241	1	F	Correction of clause 5.5.3.1 - SDP Message	15.5.0
2022-03	RAN#95	R5-222027	0243	1	F	Correction of clause 5.5.3.6 - SIMPLE-FILTER	15.5.0
2022-03	RAN#95	R5-222028	0251	1	F	Restructuring of clause 5.3 - Generic test procedures for UE MCS operation	15.5.0
2022-06	RAN#96	R5-222141	0252	-	F	New MCData off-network signalling messages in 5.5.3.8	15.6.0
2022-06	RAN#96	R5-222142	0253	-	F	New MCVideo Off-network Message Defaults 5.5.14	15.6.0
2022-06	RAN#96	R5-222392	0254	-	F	Addition of clause 5.5.3.15 - Conference-info	15.6.0
2022-06	RAN#96	R5-222394	0256	-	F	Correction of clause 5.5.2.14 - SIP SUBSCRIBE	15.6.0
2022-06	RAN#96	R5-222396	0258	-	F	Correction of clause 5.5.3.2 - MCS Info Lists	15.6.0
2022-06	RAN#96	R5-222398	0260	-	F	Correction of clause 5.5.8 - Default MCS configuration management messages and other information elements	15.6.0
2022-06	RAN#96	R5-222399	0261	-	F	Corrections of clause 5.5.3.1 - SDP message	15.6.0
2022-06	RAN#96	R5-222400	0262	-	F	Extensions of clause 2 - References	15.6.0
2022-06	RAN#96	R5-223477	0255	1	F	Correction of clause 5.3 - Generic test procedures for UE MCS operation	15.6.0
2022-06	RAN#96	R5-223478	0259	1	F	Correction of clause 5.5.3.6 - SIMPLE-FILTER	15.6.0
2022-09	RAN#97	R5-223942	0263	-	F	Correction of clause 5.3A - Generic test procedures for UE MCPTT operation	15.7.0
2022-09	RAN#97	R5-223943	0264	-	F	Correction of clause 5.3B - Generic test procedures for UE MCVideo operation	15.7.0
2022-09	RAN#97	R5-223944	0265	-	F	Correction of clause 5.5.11 - Default MCVideo Transmission Control Messages and other Information Elements	15.7.0

2022-09	RAN#97	R5-223945	0266	-	F	Correction of clause 5.5.2 - Default SIP message and other information elements	15.7.0
2022-09	RAN#97	R5-223946	0267	-	F	Correction of clause 5.5.3.1 - SDP Message	15.7.0
2022-09	RAN#97	R5-223947	0268	-	F	Correction of clause 5.5.6 - Default MCPTT media plane control messages and other information elements	15.7.0
2022-09	RAN#97	R5-223948	0269	-	F	Correction of clause 5.5.8 - Default MCS configuration management messages and other information elements	15.7.0
2022-09	RAN#97	R5-223949	0270	-	F	Correction of clause 5.5.9 - Default miscellaneous messages and other information elements	15.7.0
2022-09	RAN#97	R5-225275	0271	1	F	Correction of KMS Request URIs in HTTP POST	15.7.0
2022-12	RAN#98	R5-226060	0272		F	Correction of clause 5.3.3 - MCX pre-established session establishment CO	15.8.0
2022-12	RAN#98	R5-226061	0273		F	Correction of clause 5.3B.3 - MCVideo Media Transmission Notification and Request CT	15.8.0
2022-12	RAN#98	R5-226062	0274		F	Correction of clause 5.5.1 - General	15.8.0
2022-12	RAN#98	R5-226064	0276		F	Correction of clause 5.5.12 - MSRP Messages for MCData	15.8.0
2022-12	RAN#98	R5-226065	0277		F	Correction of clause 5.5.2 - Default SIP message and other information elements	15.8.0
2022-12	RAN#98	R5-226066	0278		F	Correction of clause 5.5.3.2 - MCS Info Lists	15.8.0
2022-12	RAN#98	R5-226067	0279		F	Correction of clause 5.5.3.4 - Location-info	15.8.0
2022-12	RAN#98	R5-226068	0280		F	Correction of clause 5.5.3.8 - MCData Data signalling messages	15.8.0
2022-12	RAN#98	R5-226069	0281		F	Correction of clause 5.5.6 - Default MCPTT media plane control messages and other information elements	15.8.0
2022-12	RAN#98	R5-226070	0282		F	Correction of clause 5.5.8 - Default MCS configuration management messages and other information elements	15.8.0
2022-12	RAN#98	R5-226532	0283		F	Editorial correction of 5.3B.7	15.8.0
2022-12	RAN#98	R5-226683	0284		F	Correction of clause 5.3A.1 - MCPTT CO session establishment/modification without provisional responses other than 100 Trying	15.8.0
2022-12	RAN#98	R5-226685	0285		F	Correction of clause 5.3B.1 - MCVideo CO session establishment/modification without provisional responses other than 100 Trying	15.8.0
2022-12	RAN#98	R5-227614	0275	1	F	Correction of clause 5.5.11 - Default MCVideo Transmission Control Messages and other Information Elements	15.8.0
2023-03	RAN#99	R5-230126	0288	-	F	Correction of clause 5.3A - Generic test procedures for UE MCPTT operation	15.9.0
2023-03	RAN#99	R5-230128	0290	-	F	Correction of clause 5.3C - Generic test procedures for UE MCData operation	15.9.0
2023-03	RAN#99	R5-230131	0293	-	F	Correction of clause 5.5.3.2 - MCS Info Lists	15.9.0
2023-03	RAN#99	R5-230133	0295	-	F	Correction of clause 5.5.3.4 - Location-info	15.9.0
2023-03	RAN#99	R5-230134	0296	-	F	Correction of clause 5.5.7 - Default MCX group management messages and other information elements	15.9.0
2023-03	RAN#99	R5-230135	0297	-	F	Correction of clause 5.5.8 - Default MCS configuration management messages and other information elements	15.9.0
2023-03	RAN#99	R5-230295	0298	-	F	Correction of clause 5.5.4.6 - HTTP 200 OK	15.9.0
2023-03	RAN#99	R5-231936	0287	1	F	Correction of clause 5.3 - Generic test procedures for UE MCS operation	15.9.0
2023-03	RAN#99	R5-231937	0289	1	F	Correction of clause 5.3B - Generic test procedures for UE MCVideo operation	15.9.0
2023-03	RAN#99	R5-231938	0291	1	F	Correction of clause 5.4 - Generic test procedures for UE operation over E-UTRA/EPC	15.9.0
2023-03	RAN#99	R5-231939	0292	1	F	Correction of clause 5.5.2 - Default SIP message and other information elements	15.9.0
2023-03	RAN#99	R5-231940	0294	1	F	Correction of clause 5.5.3.3 - Resource-lists	15.9.0
2023-03	RAN#99	R5-231917	0299	1	F	New Rel-16 parameters for MCPTT User Profile	16.0.0
2023-06	RAN#100	R5-232214	0301	-	F	Correction of clause 5.5.11.3.5	16.1.0
2023-06	RAN#100	R5-232215	0302	-	F	Correction of clause 5.5.4.10.1	16.1.0
2023-06	RAN#100	R5-232216	0303	-	F	Correction of clause 5.5.6.11	16.1.0
2023-06	RAN#100	R5-232218	0305	-	F	Correction of clause 5.5.8.3	16.1.0
2023-06	RAN#100	R5-233293	0313	-	F	Addition of generic Functional Alias Generic Procedures	16.1.0
2023-06	RAN#100	R5-233294	0311	1	F	Updates to SDP Message from the SS for MCData	16.1.0
2023-06	RAN#100	R5-233488	0306	1	F	Updates to MCData UE Configuration and User Profile	16.1.0
2023-06	RAN#100	R5-233489	0308	1	F	Updates to MCData PIDF for functional alias	16.1.0
2023-06	RAN#100	R5-233490	0309	1	F	Updates to 5.3.3 Pre-Established Session Establishment Generic TC	16.1.0
2023-06	RAN#100	R5-233491	0310	1	F	Updates to MCData-Info from the UE	16.1.0
2023-06	RAN#100	R5-233492	0312	1	F	Updates to SDP Message from the UE for MCData	16.1.0
2023-09	RAN#101	R5-233848	0314	-	F	Correction of clause 5.5.3.1.1	16.2.0
2023-09	RAN#101	R5-233849	0315	-	F	Correction of clause 5.5.3.2.1	16.2.0
2023-09	RAN#101	R5-233850	0316	-	F	Correction of clause 5.5.4.3	16.2.0
2023-09	RAN#101	R5-233851	0317	-	F	Correction of clauses 5.3.36 and 5.3.37	16.2.0
2023-09	RAN#101	R5-233852	0318	-	F	Removal of clauses 5.3A.9 and 5.3A.10	16.2.0
2023-09	RAN#101	R5-234572	0319	-	F	Updates to 5.3.3 Pre-Established Session Establishment Generic TC	16.2.0
2023-09	RAN#101	R5-234585	0320	-	F	Updates for Resource-lists for MCData	16.2.0

2023-09	RAN#101	R5-235403	0321	1	F	Addition of new generic procedure CO MCData call establishment using a pre-established session	16.2.0
2023-09	RAN#101	R5-235404	0322	1	F	Addition of new generic procedure MCData CO call release keeping the pre-established session	16.2.0
2023-12	RAN#102	R5-236320	0323		F	Correction of clause 5.5.11	16.3.0
2023-12	RAN#102	R5-236321	0324		F	Correction of clause 5.5.3.1	16.3.0
2023-12	RAN#102	R5-236322	0325		F	Correction of clause 5.5.3.2	16.3.0
2023-12	RAN#102	R5-236323	0326		F	Correction of clause 5.5.6	16.3.0
2023-12	RAN#102	R5-236324	0327		F	Corrections of generic test procedures in clause 5.3 and clause 5.3C	16.3.0
2023-12	RAN#102	R5-236601	0328		F	Addition of MCPTT User Profile Rules for Affiliation	16.3.0
2023-12	RAN#102	R5-237437	0329	1	F	Addition of MCPTT_Regoup Default	16.3.0
2024-03	RAN#103	R5-240555	0330	-	F	Corrections of clause 5.3.2	16.4.0
2024-03	RAN#103	R5-240556	0331	-	F	Corrections of clause 5.3.29	16.4.0
2024-03	RAN#103	R5-240557	0332	-	F	Corrections of clause 5.3.32	16.4.0
2024-03	RAN#103	R5-240558	0333	-	F	Corrections of clause 5.4.2	16.4.0
2024-03	RAN#103	R5-240559	0334	-	F	Corrections of clause 5.5.1	16.4.0
2024-03	RAN#103	R5-240560	0335	-	F	Corrections of clause 5.5.2.11	16.4.0
2024-03	RAN#103	R5-240561	0336	-	F	Corrections of clause 5.5.2.13	16.4.0
2024-03	RAN#103	R5-240562	0337	-	F	Corrections of clause 5.5.2.19.4	16.4.0
2024-03	RAN#103	R5-240563	0338	-	F	Corrections of clause 5.5.2.7.2	16.4.0
2024-03	RAN#103	R5-240564	0339	-	F	Corrections of clause 5.5.3.3.1A	16.4.0
2024-03	RAN#103	R5-240565	0340	-	F	Corrections of clause 5.5.9.1	16.4.0
2024-03	RAN#103	R5-240566	0341	-	F	Corrections of references to 24.282	16.4.0
2024-03	RAN#103	R5-240897	0342	-	F	Corrections to Table 5.5.3.1-3 MCData Resource-lists	16.4.0
2024-03	RAN#103	R5-240898	0343	-	F	Addition of Location-info for MCData	16.4.0

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