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

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

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

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

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

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

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

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

1 Scope

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

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

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

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

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

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

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

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

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

[6] 3GPP TS 36.508: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); Common Test Environments for User Equipment (UE) Conformance Testing".

[7] 3GPP TS 22.179: "Mission Critical Push To Talk (MCPTT) over LTE; Stage 1".

[8] 3GPP TS 23.179: "Functional architecture and information flows to support mission critical communication services; Stage 2".

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

[10] 3GPP TS 24.380: "Mission Critical Push To Talk (MCPTT) floor control; Protocol specification".

[11] 3GPP TS 24.481: "Mission Critical Services (MCS) group management; Protocol specification".

[12] 3GPP TS 24.482: "Mission Critical Services (MCS) identity management; Protocol specification".

[13] 3GPP TS 24.483: "Mission Critical Services (MCS) Management Object (MO)".

[14] 3GPP TS 24.484: "Mission Critical Services (MCS) configuration management; Protocol specification".

[15] 3GPP TS 33.179: "Security of Mission Critical Push-To-Talk (MCPTT) over LTE".

[16] 3GPP TS 24.229: "IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[17] Void

[18] Void

[19] Void

[20] Void

[21] Void

[22] IETF RFC 3261 (June 2002): "SIP: Session Initiation Protocol".

[23] IETF RFC 6509 (February 2012): "MIKEY-SAKKE: Sakai-Kasahara Key Encryption in Multimedia Internet KEYing (MIKEY)".

[24] IETF RFC 3830: "MIKEY: Multimedia Internet KEYing".

[25] IETF RFC 6043: "MIKEY-TICKET: Ticket-Based Modes of Key Distribution in Multimedia Internet KEYing (MIKEY)".

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

[27] IETF RFC 4566 (July 2006): "SDP: Session Description Protocol".

[28] Void

[29] IETF RFC 3841 (August 2004): "Caller Preferences for the Session Initiation Protocol (SIP)".

[30] IETF RFC 4028 (April 2005): "Session Timers in the Session Initiation Protocol (SIP)".

[31] IETF RFC 6050 (November 2010): "A Session Initiation Protocol (SIP) Extension for the Identification of Services".

[32] IETF RFC 3325 (November 2002): "Private Extensions to the Session Initiation Protocol (SIP) for Asserted Identity within Trusted Networks".

[33] IETF RFC 3840 (August 2004): "Indicating User Agent Capabilities in the Session Initiation Protocol (SIP)".

[34] IETF RFC 5373 (November 2008): "Requesting Answering Modes for the Session Initiation Protocol (SIP)".

[35] IETF RFC 5366 (October 2008): "Conference Establishment Using Request-Contained Lists in the Session Initiation Protocol (SIP)".

[36] IETF RFC 4488 (May 2006): "Suppression of Session Initiation Protocol (SIP) REFER Method Implicit Subscription".

[37] IETF RFC 4538 (June 2006): "Request Authorization through Dialog Identification in the Session Initiation Protocol (SIP)".

[38] IETF RFC 3515 (April 2003): "The Session Initiation Protocol (SIP) Refer Method".

[39] IETF RFC 6665 (July 2012): "SIP-Specific Event Notification".

[40] IETF RFC 4412 (February 2006): "Communications Resource Priority for the Session Initiation Protocol (SIP)".

[41] Void

[42] Void

[43] IETF RFC 3903 (October 2004): "Session Initiation Protocol (SIP) Extension for Event State Publication".

[44] IETF RFC 4567 (July 2006): "Key Management Extensions for Session Description Protocol (SDP) and Real Time Streaming Protocol (RTSP)".

[45] IETF RFC 8101 "IANA Registration of New Session Initiation Protocol (SIP) Resource-Priority Namespace for Mission Critical Push To Talk service".

[46] Void

[47] Void

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

[49] Void

[50] Void

[51] IETF RFC 7913 (June 2016): "P-Access-Network-Info ABNF Update".

[52] IETF RFC 7315 (July 2014): "Private Header (P-Header) Extensions to the Session Initiation Protocol (SIP) for the 3GPP".

[53] IETF RFC 3329 (January 2003): "Security Mechanism Agreement for the Session Initiation Protocol (SIP)".

[54] IETF RFC 5031 (January 2008): "A Uniform Resource Name (URN) for Emergency and Other Well-Known Services".

[55] IETF RFC 3581 (August 2003): "An Extension to the Session Initiation Protocol (SIP) for Symmetric Response Routing".

[56] IETF RFC 3312 (October 2002): "Integration of resource management and Session Initiation Protocol (SIP)".

[57] IETF RFC 7134: "The Management Policy of the Resource Priority Header (RPH) Registry Changed to "IETF Review"".

[58] IETF RFC 5621 (September 2009): "Message Body Handling in the Session Initiation Protocol (SIP)".

[59] IETF RFC 4867: "RTP Payload Format and File Storage Format for the Adaptive Multi-Rate (AMR) and Adaptive Multi-Rate Wideband (AMR-WB) Audio Codecs".

[60] IETF RFC 5009 (September 2007): "Private Header (P-Header) Extension to the Session Initiation Protocol (SIP) for Authorization of Early Media".

[61] IETF RFC 3842 (August 2004) "A Message Summary and Message Waiting Indication Event Package for the Session Initiation Protocol (SIP)".

[62] IETF RFC 6442 (December 2011): "Location Conveyance for the Session Initiation Protocol".

[63] IETF RFC 6335: "Internet Assigned Numbers Authority (IANA) Procedures for the Management of the Service Name and Transport Protocol Port Number Registry".

[64] 3GPP TS 26.114: "IP Multimedia Subsystem (IMS); Multimedia telephony; Media handling and interaction".

[65] 3GPP TS 23.032: "Universal Geographical Area Description (GAD)".

[66] 3GPP TS 26.171: "Speech codec speech processing functions; Adaptive Multi-Rate - Wideband (AMR-WB) speech codec; General description".

[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".

[70] 3GPP TS 33.310: "Network Domain Security (NDS); Authentication Framework (AF)".

[71] Void

[72] IETF RFC 2617: "HTTP Authentication: Basic and Digest Access Authentication".

[73] 3GPP TS 31.102: "Characteristics of the Universal Subscriber Identity Module (USIM) application".

[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".

[77] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".

[78] 3GPP TS 24.334: "Proximity-services (ProSe) User Equipment (UE) to ProSe function protocol aspects; Stage 3".

[79] 3GPP TS 31.101: "UICC-terminal interface; Physical and logical characteristics.

[80] 3GPP TS 31.103: "Characteristics of the IP Multimedia Services Identity Module (ISIM) application".

[81] IETF RFC 6809 (November 2012): "Mechanism to Indicate Support of Features and Capabilities in the Session Initiation Protocol (SIP)".

[82] IETF RFC 7462 (March 2015): "URNs for the Alert-Info Header Field of the Session Initiation Protocol (SIP)".

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

[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".

[94] 3GPP TS 33.180: "Security of the mission critical service".

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

[96] IETF RFC 3310: "Hypertext Transfer Protocol (HTTP) Digest Authentication Using Authentication and Key Agreement (AKA)".

[97] IETF RFC 3262: "Reliability of Provisional Responses in the Session Initiation Protocol (SIP)".

[98] IETF RFC 6507: "Elliptic Curve-Based Certificateless Signatures for Identity-Based Encryption (ECCSI)".

[99] IETF RFC 6508: "Sakai-Kasahara Key Encryption (SAKKE)".

[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)".

[103] IETF RFC 4354 "A Session Initiation Protocol (SIP) Event Package and Data Format for Various Settings in Support for the Push-to-Talk over Cellular (PoC) Service"

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

[105] HTML 4.01 Specification: https://www.w3.org/TR/html401/.

[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

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.

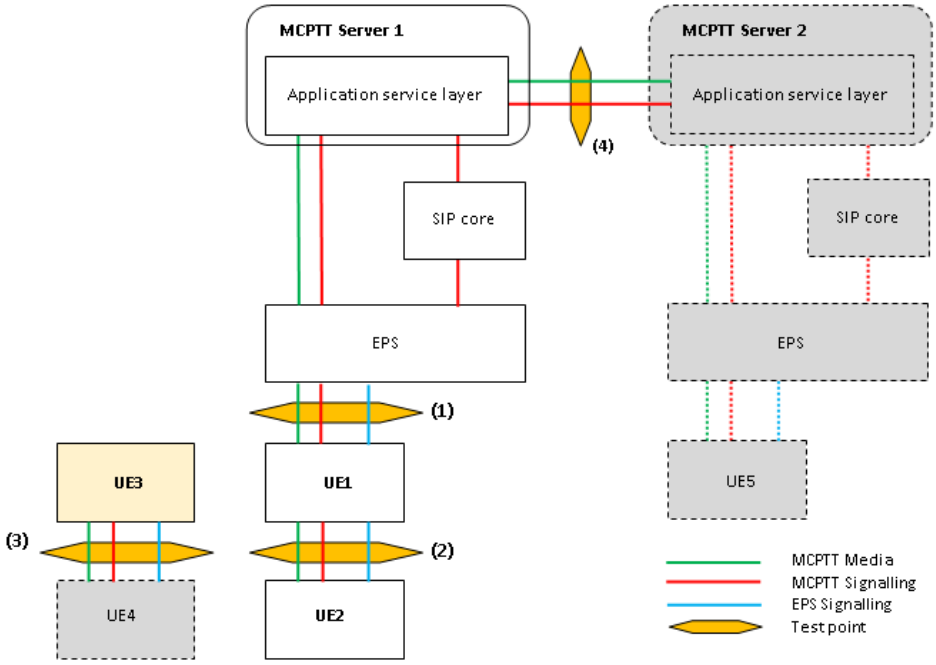

Figure 4.1.1: MCPTT Conformance testing test points model

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].

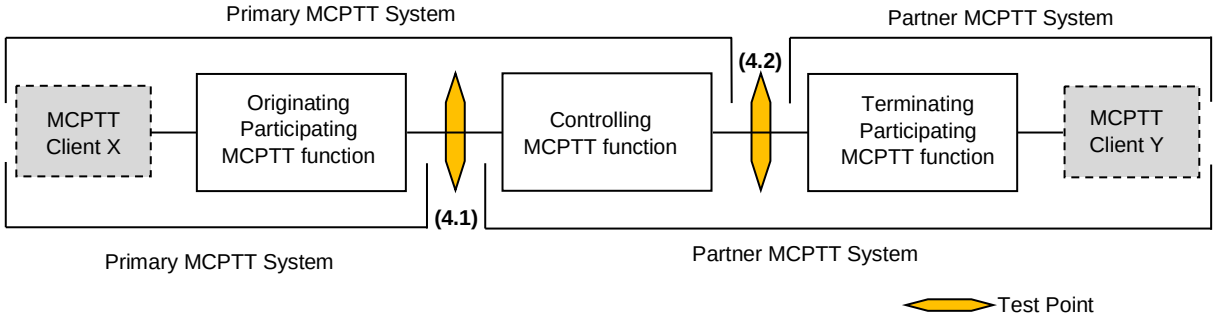

Figure 4.1.2: MCPTT Conformance testing Client-to-Client test points model

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)).

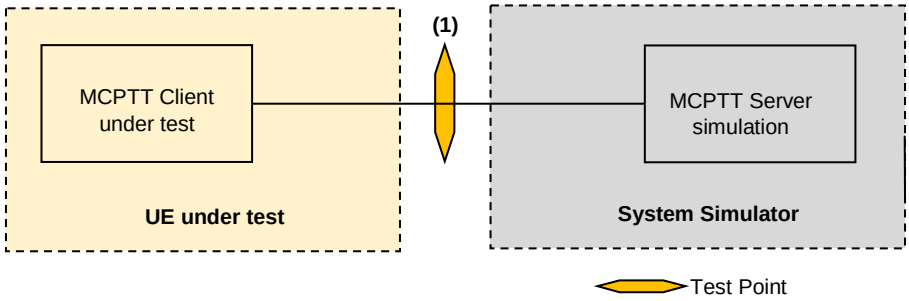

Figure 4.2.1: Testing the MCPTT Client (on-network)

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.

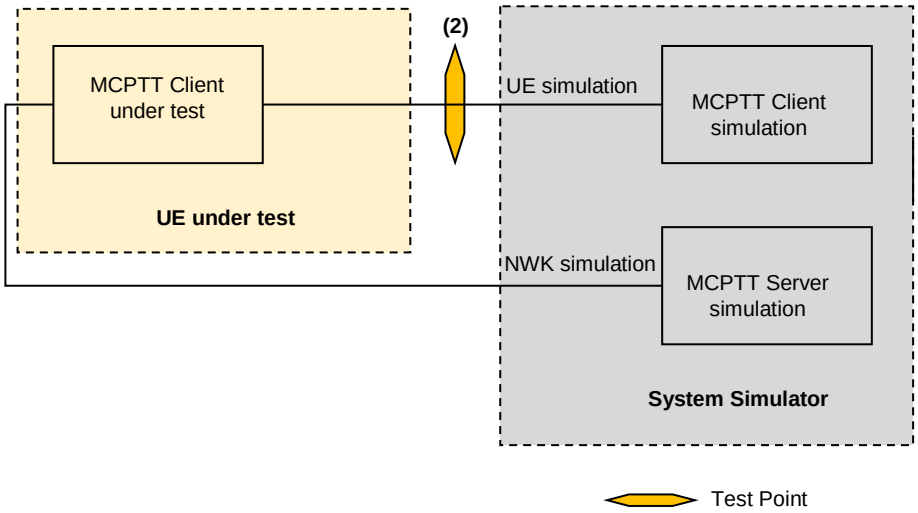

Figure 4.2.2: Testing the MCPTT Client (on-network) Relay side

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.

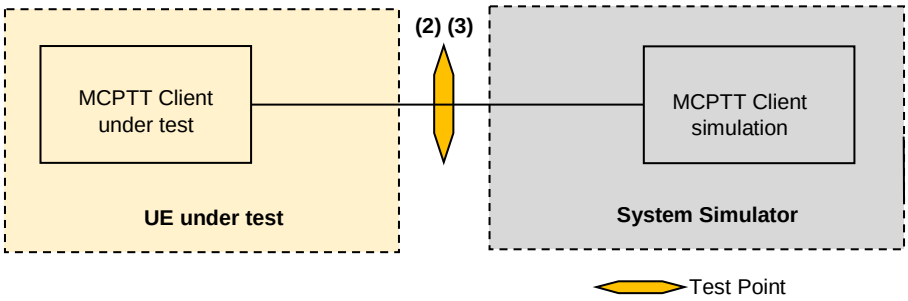

Figure 4.2.3: Testing the MCPTT Client (off-network)

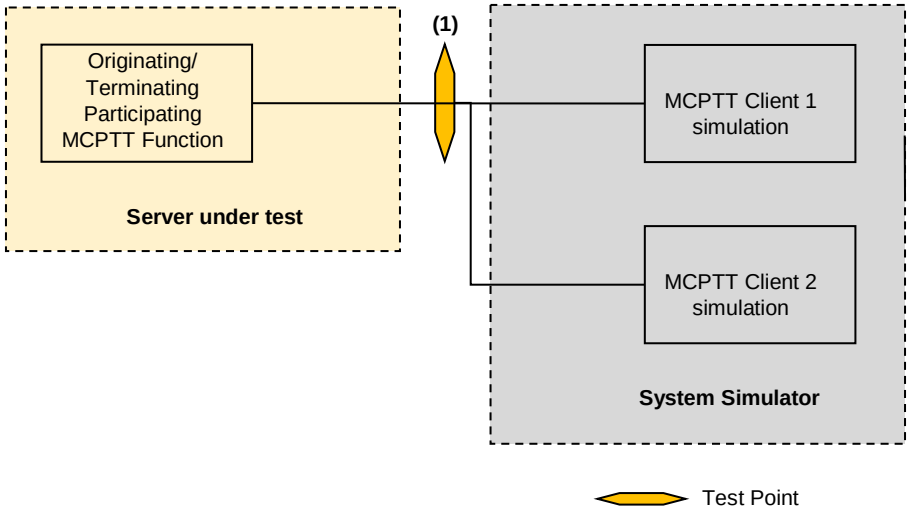

Figure 4.2.4: Testing the MCPTT Server (server-to-client)

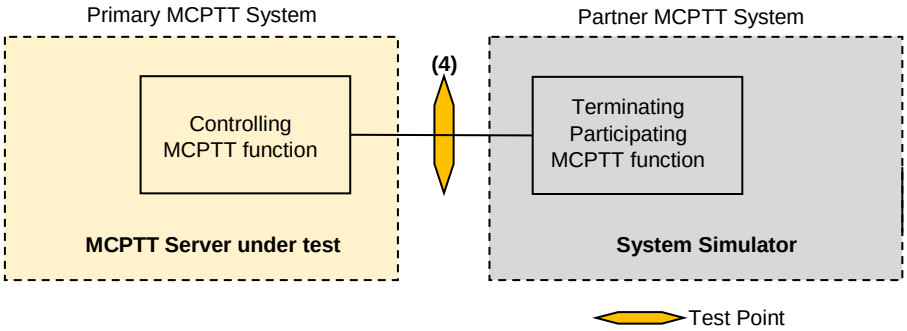

Figure 4.2.5: Testing the MCPTT Server (server-to-server), Controlling function

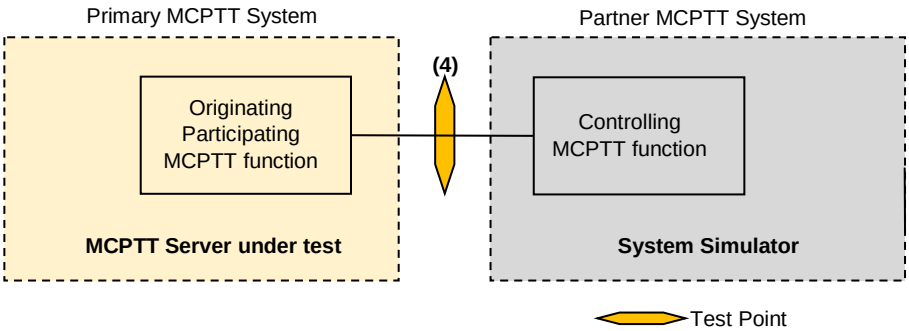

Figure 4.2.6: Testing the MCPTT Server (server-to-server), Originating function

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.

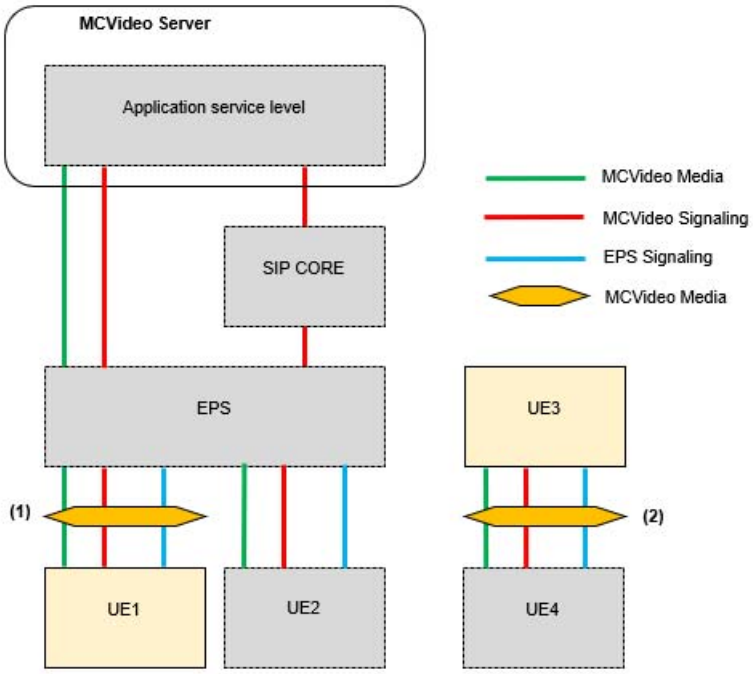

Figure 4.5.1: MCVideo Conformance testing test points model

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)).

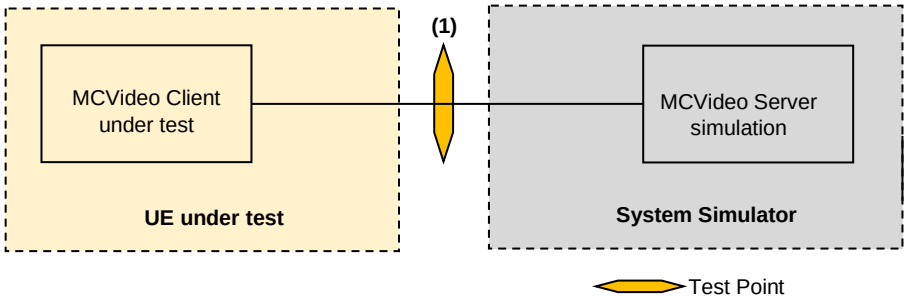

Figure 4.6.1: Testing the MCVideo Client (on-network)

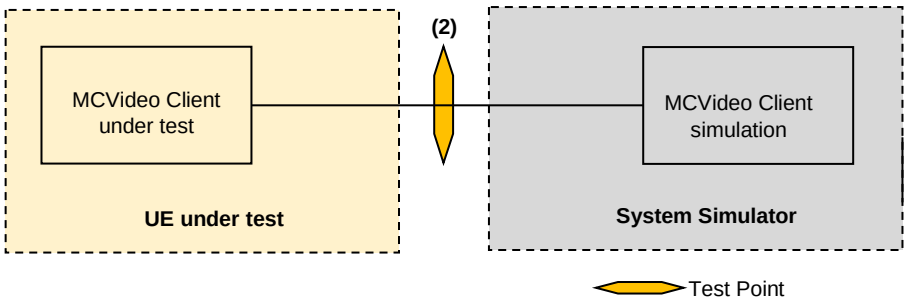

Figure 4.6.2: Testing the MCVideo Client (off-network)

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.

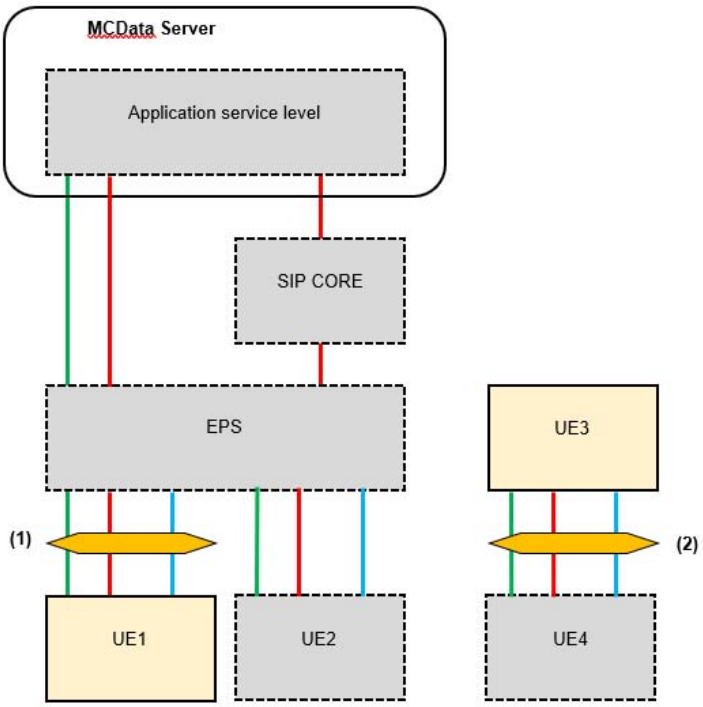

Figure 4.8.1: MCData Conformance testing test points model

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)).

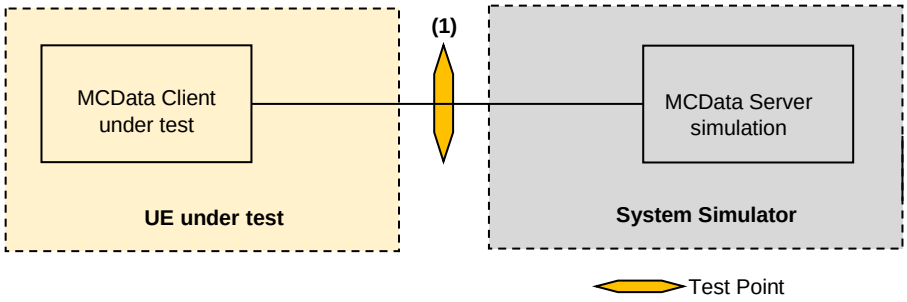

Figure 4.9.1: Testing the MCData Client (on-network)

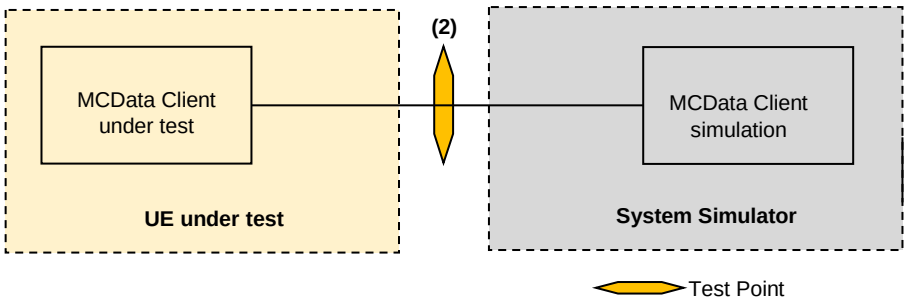

Figure 4.9.2: Testing the MCData Client (off-network)

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 Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation

5.3.2.1 Initial conditions

System Simulator:

- SS (MCPTT 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 MCPTT operation in the MCPTT configuration document).

Implementation Under Test (IUT):

- UE (MCPTT client)
  - The MCPTT Client has been provisioned with the Initial UE Configuration Data as specified in clause 5.5.8.1 allowing for the location of the configuration management server for configuration of the MCPTT UE initial configuration management object (MO) and the default MCPTT user profile configuration management object (MO).
  - 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_MCPTT_User_A_username, px_MCPTT_User_A_password as provided in TS 36.579-5 [5], Table 9.2-1: MCPTT 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 Definition of system information messages

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

5.3.2.3 Procedures

Table 5.3.2.3-1: MCPTT user authentication

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Void	-	-	-	-
2	Void	-	-	-	-
-	EXCEPTION: Depending on the UE capabilities, the UE (MCX client) executes the sequence described in Table 5.3.2.3-1A	-	-	-	-
-	EXCEPTION: The messages below up to and including step 7 are transmitted over a secure TLS tunnel that has been established by the UE (MCPTT 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 "lower case letter" identifies a step sequence that takes place when one or the other is the case.	-	-	-	-
3a1	The UE (MCPTT client) sends an OpenID Connect Authentication Request using HTTP GET.	-->	HTTP GET (Authorization)	-	P
3b1	The UE (MCPTT client) sends an OpenID Connect Authentication Request using HTTP POST.	-->	HTTP POST (Authorization)	-	P
4	The SS sends a HTTP 200 (OK) including the HTML form requesting username and password.	<--	HTTP 200 (OK)	-	-
5	Make the UE user provide user credentials: username and password (px_MCX_User_A_username, px_MCX_User_A_password). NOTE 2	-	-	-	-
6	The UE (MCPTT client) sends an HTTP POST Request message to the SS 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 to 10 are transmitted over a secure TLS tunnel that has been established by the UE (MCPTT 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 (MCPTT client) sends an HTTP POST Request message to the SS (OIDC Token Request message), passing the authorization code obtained in step 7.	-->	HTTP POST	-	P
10	The SS sends a HTTP 200 (OK) providing id_token, access_token and refresh token.	<--	HTTP 200 (OK)	-	-
-	EXCEPTION: The messages in steps 11 to 14 are transmitted over a secure TLS tunnel that has been established by the UE (MCPTT 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 (MCPTT client) sends a HTTP POST message presenting the access token obtained in step 10 to the SS over HTTP for Key Management Initialisation. NOTE: Step 11 is the start of the second stage which was started in Step 2. Steps 11 through 14 involve Key Management Authorization. The MCPTT Client/Key Management Client presents the access token to the Key Management Server. The end result is the user gets specific key material.	-->	HTTP POST	-	P

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
12	The SS replies to the UE with identity specific key information.	<--	HTTP 200 (OK)	-	-
13	The UE (MCPTT client) sends a HTTP POST message presenting an access token to the SS over HTTP for Key Material Request.	-->	HTTP POST	-	P
14	The SS replies to the UE with identity specific key information.	<--	HTTP 200 (OK)	-	-
15-32	Void	-	-	-	-
NOTE 1: Void. NOTE 1A: Void. NOTE 2: The UE is expected to prompt the MCPTT user for their 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.					

Table 5.3.2.3-1A: MCPTT Initial UE Configuration Request

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The UE (MCPTT client) sends an HTTP GETrequestto retrieve the initial UE configuration from the Server	-->	HTTP GET (initial UE configuration)	-	P
2	The SS sends a HTTP 200 (OK) including the initial UE configuration document	<--	HTTP 200 (OK)	-	-

Table 5.3.2.3-2: MCPTT Service Authorization and Key Generation

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: In parallel to procedure of all steps below the behaviour of table 5.3.2.3-2A, the behaviour of table 5.3.2.3-2B and the behaviour of table 5.3.2.3-2C takes place.	-	-	-	-
-	EXCEPTION: Steps 1a1-1b2 describe behaviour that depends on UE implementation; the "lower case letter" identifies a step sequence that takes place when one or the other is the case. NOTE: Step 1a1 is the start of the third stage which was started in Step 3 of table 5.3.2.3-1. Steps 1a1 and 1b1 involve User Service Authorization.	-	-	-	-
1a1	The UE (MCPTT client) sends a SIP REGISTER request for service authorisation.	-->	SIP REGISTER	-	P
1a2	The SS (MCPTT server) sends SIP 200 (OK). NOTE: The user is now authorized for MCPTT service.	<--	SIP 200 (OK)	-	-
1a3	The UE (MCPTT client) sends a SIP PUBLISH request for update of PoC-settings (NOTE 1).	-->	SIP PUBLISH	-	P
1a4	The SS (MCPTT server) sends SIP 200 (OK).	<--	SIP 200 (OK)	-	-
1b1	The UE (MCPTT client) sends a SIP PUBLISH request for service authorisation and update of PoC-settings (NOTE 1).	-->	SIP PUBLISH	--	P
1b2	The SS (MCPTT server) sends SIP 200 (OK). NOTE: The user is now authorized for MCPTT service.	<--	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 5.3.2.3-2A.					

Table 5.3.2.3-2A: Configuration management subscription and notification procedure

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The UE (MCPTT client) sends a SIP SUBSCRIBE - subscription to multiple documents simultaneously - to the SS containing the access token and a resource list mime body containing a list of the following documents: MCPTT UE Configuration document, MCPTT User Profile Configuration Document, and the MCPTT Service configuration document. The base URI of each list entry is set to the CMS XCAP-ROOT-URI. NOTE: Step 1 is the start of the fourth stage which was started in Step 3 of table 5.3.2.3-1. Steps 1 through 10 involve Configuration Management Authorization. The end result of the fourth stage is that the MCPTT Client receives 3 configuration documents: UE Configuration Document, User Profile Configuration Document, and the Service Configuration Document.	-->	SIP SUBSCRIBE	-	P
2	The SS sends a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
3	The SS sends a SIP NOTIFY message to the UE that contains the XCAP-URI 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 (MCPTT client) sends a SIP 200 (OK) message.	-->	SIP 200 (OK)	-	P
5	The UE (MCPTT client) sends an HTTP GET Request message to the SS that contains the access token and the XCAP-URI of the MCPTT UE Configuration Document. NOTE: The MCPTT Client is requesting the MCPTT UE Configuration Document.	-->	HTTP GET	-	P
6	The SS sends the HTTP 200 (OK) message including the MCPTT UE Configuration Document.	<--	HTTP 200 (OK)	-	-
7	The UE (MCPTT client) sends an HTTP GET Request message to the SS that contains the access token and the XCAP-URI of the MCPTT User Profile Configuration Document. NOTE: The MCPTT Client is requesting the MCPTT User Profile Configuration Document.	-->	HTTP GET	-	P
8	The SS sends the HTTP 200 (OK) message including the MCPTT User Profile Configuration Document. NOTE: The MCPTT User Profile Configuration Document includes information on MCPTT groups including for which groups the MCPTT Client is a member. The MCPTT User Profile Configuration Document includes Group A as a group for which the MCPTT 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 (MCPTT client) sends an HTTP GET Request message to the SS that contains the access token and the XCAP-URI of the MCPTT Service Configuration Document. NOTE: The MCPTT Client is requesting the MCPTT Service Configuration Document.	-->	HTTP GET	-	P
10	The SS sends the HTTP 200 (OK) message including the MCPTT Service Configuration Document.	<--	HTTP 200 (OK)	-	--

Table 5.3.2.3-2B: Group document subscription and notification procedure

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The UE (MCPTT client) sends a SIP SUBSCRIBE to the SS, containing the access token and a resource list mime body and a list of the Groups to be obtained. The base URI of each list entry is set to the GMS XCAP-ROOT-URI, and the MCPTT group ID identifies a group document. NOTE: Step 1 is the start of the fifth stage which was started in Step 2 of table 5.3.2.3-1. Steps 1 through 6 involve Group Management Authorization. The end result is the MCPTT Client will receive group information for Group A. The MCPTT Client will also get the Group Master Key (GMK) for the group which will be used to derive keys for the group. There will also be a Group User Key Identifier (GUK-ID), and a Group Master Key Identifier (GMK-ID). According TS 33.180 [94], clause 7.4.1, the GMK shall be used as the MIKEY Traffic Generating Key (TGK) and the GUK-ID shall be used as the MIKEY CSB ID. These shall be used to generate the SRTP Master Key and SRTP Master Salt as specified in IETF RFC 3830 [24].	-->	SIP SUBSCRIBE	-	P
2	The SS sends a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
3	The SS sends a SIP NOTIFY message to the UE that contains the XCAP-URI of the Group documents.	<--	SIP NOTIFY	-	-
-	EXCEPTION: The order of steps 4 and 5 depends on UE and SS implementation and is not checked by the implementation	-	-	-	-
4	The UE (MCPTT client) sends a SIP 200 (OK) message.	-->	SIP 200 (OK)	-	P
5	The UE (MCPTT client) sends an HTTP GET Request message to the SS that contains the access token and the XCAP-URI of the Group Configuration document.	-->	HTTP GET	-	P
6	The SS sends the HTTP 200 (OK) message including the Group Document 'MCPTT UE Configuration document'. NOTE 1	<--	HTTP 200 (OK)	-	-
-	EXCEPTION: Steps 7a1-7a2 describe behaviour that depends on UE implementation; the "lower case letter" identifies a step sequence that takes place when one or the other is the case.	**-**	**-**		
7a1	IF the Resource-Lists received from the UE at step 1 contains an entry referring to an MCPTT-GKTP document THEN the SS sends a SIP NOTIFY message to the UE containing the group key transport payloads (GKTP) document.	<--	SIP NOTIFY		
7a2	The UE (MCPTT client) sends a SIP 200 (OK) message.	-->	SIP 200 (OK)		
NOTE 1: This completes MCPTT service enabling on the UE.					

Table 5.3.2.3-2C: Group communication key retrieval procedure

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS starts timer Timer_1 = 5 seconds.	-	-	-	-
-	EXCEPTION: Steps 2a5-3a1 describe behaviour that depends on UE implementation; the "lower case letter" identifies a step sequence that takes place when one or the other is the case.	-	-	-	-
2a1	The UE (MCPTT client) sends a SIP SUBSCRIBE to the SS, creating a new dialog and containing the access token and a resource list mime body containing an entry to request group key transport payloads (GKTP) document.	-->	SIP SUBSCRIBE	-	P
2a2	The SS sends a SIP 200 (OK) message	<--	SIP 200 (OK)	-	-
2a3	The SS sends a SIP NOTIFY message to the UE containing the group key transport payloads (GKTP) document.	<--	SIP NOTIFY	-	-
2a4	The UE (MCPTT client) sends a SIP 200 (OK) message.	-->	SIP 200 (OK)	-	P
2a5	The SS stops Timer_1.	-	-	-	-
2b1	Timer_1 expires	-	-		
NOTE: This key retrieval from the GMS is necessary for the MCX UE under test to enable ciphering exchanged media in group communications.					

5.3.2.4 Specific message contents

Table 5.3.2.4-1: HTTP GET (Step 3a1, Table5.3.2.3-1)

Derivation Path: Table 5.5.4.2-1, condition AUTH

Table 5.3.2.4-2: HTTP POST (Step 3b1, Table 5.3.2.3-1)

Derivation Path: Table 5.5.4.3-1, condition AUTH

Table 5.3.2.4-3: HTTP 200 (OK) (Step 4, Table 5.3.2.3-1)

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 5.3.2.4-4: HTTP POST (Step 6, Table 5.3.2.3-1)

Derivation Path: Table 5.5.4.3-1, condition USERAUTH

Table 5.3.2.4-5: HTTP 302 (Found) (Step 7, Table 5.3.2.3-1)

Derivation Path: Table 5.5.4.8-1, condition AUTH.

Table 5.3.2.4-6: HTTP POST (Step 9, Table 5.3.2.3-1)

Derivation Path: Table 5.5.4.3-1, condition TOKEN

Table 5.3.2.4-7: HTTP 200 (OK) (Step 10, Table 5.3.2.3-1)

Derivation Path: Table 5.5.4.6-1, condition TOKEN

Table 5.3.2.4-8: HTTP POST (Step 11, Table 5.3.2.3-1)

Derivation Path: Table 5.5.4.33-1, condition KMSINIT.

Table 5.3.2.4-9: HTTP 200 (OK) (Step 12, Table 5.3.2.3-1)

Derivation Path: Table 5.5.4.6-1, condition KMSINIT.

Table 5.3.2.4-10: HTTP POST (Step 13, Table 5.3.2.3-1)

Derivation Path: Table 5.5.4.3-1, condition KMSKEY.

Table 5.3.2.4-11: HTTP 200 (OK) (Step 14, Table 5.3.2.3-1)

Derivation Path: Table 5.5.4.6-1, condition KMSKEY.

Table 5.3.2.4-12: SIP REGISTER (Step 1a1, Table 5.3.2.3-2)

Derivation Path: Table 5.5.2.13-1, condition CONFIG

Table 5.3.2.4-13: SIP PUBLISH (Step 1b1, Table 5.3.2.3-2)

Derivation Path: Table 5.5.2.11-1, condition CONFIG

Table 5.3.2.4-13A: SIP PUBLISH (Step 1a3, Table 5.3.2.3-2)

Derivation Path: Table 5.5.2.11-1, condition POC-SETTINGS-EVENT

Table 5.3.2.4-14: SIP SUBSCRIBE (Step 1, Table 5.3.2.3-2A)

Derivation Path: Table 5.5.2.14-1, condition CONFIG

Table 5.3.2.4-15: SIP NOTIFY (Step 3, Table 5.3.2.3-2A)

Derivation Path: Table 5.5.2.8-1, condition CONFIG

Table 5.3.2.4-16: HTTP GET (Step 5, Table 5.3.2.3-2A)

Derivation Path: Table 5.5.4.2-1, condition UECONFIG.

Table 5.3.2.4-17: HTTP GET (Step 7, Table 5.3.2.3-2A)

Derivation Path: Table 5.5.4.2-1, condition UEUSERPROF.

Table 5.3.2.4-18: HTTP GET (Step 9, Table 5.3.2.3-2A)

Derivation Path: Table 5.5.4.2-1, condition UESERVCONFIG.

Table 5.3.2.4-19: HTTP 200 (OK) (Step 6, Table 5.3.2.3-2A)

Derivation Path: Table 5.5.4.6-1, condition UECONFIG.

Table 5.3.2.4-20: HTTP 200 (OK) (Step 8, Table 5.3.2.3-2A)

Derivation Path: Table 5.5.4.6-1, condition UEUSERPROF.

Table 5.3.2.4-21: HTTP 200 (OK) (Step 10, Table 5.3.2.3-2A)

Derivation Path: Table 5.5.4.6-1, condition UESERVCONFIG.

Table 5.3.2.4-22: SIP SUBSCRIBE (Step 1, Table 5.3.2.3-2B)

Derivation Path: Table 5.5.2.14-1, condition GROUPCONFIG

Table 5.3.2.4-22A: VoidTable 5.3.2.4-22B: SIP NOTIFY (Step 3, Table 5.3.2.3-2B)

Derivation Path: Table 5.5.2.8-1, condition GROUPCONFIG

Table 5.3.2.4-23: HTTP GET (Step 5, Table 5.3.2.3-2B)

Derivation Path: Table 5.5.4.2-1, condition GROUPCONFIG

Table 5.3.2.4-24: HTTP 200 (OK) (Step 6, Table 5.3.2.3-2B)

Derivation Path: Table 5.5.4.6-1, condition GROUPCONFIG.

Table 5.3.2.4-25: Void

Table 5.3.2.4-26: SIP 200 (OK) (Steps 1a2, 1a4, 1b2, Table 5.3.2.3-2, step 2, Table 5.3.2.3-2A, step 2, Table 5.3.2.3-2B)

Derivation Path: Table 5.5.2.17.1.2-1

Table 5.3.2.4-27: SIP 200 (OK) (Step 4, Table 5.3.2.3-2A, step 4, Table 5.3.2.3-2B)

Derivation Path: Table 5.5.2.17.1.1-1

Table 5.3.2.4-28: HTTP GET (Step 1, Table 5.3.2.3-1A)

Derivation Path: Table 5.5.4.2-1, condition UEINITIALCONFIG

Table 5.3.2.4-29: HTTP 200 (OK) (Step 2, Table 5.3.2.3-1A)

Derivation Path: Table 5.5.4.6-1, condition UEINITIALCONFIG

Table 5.3.2.4-30: SIP SUBSCRIBE (Step 1, Table 5.3.2.3-2C)

Derivation Path: Table 5.5.2.14-1, condition GROUPCONFIG				
Message-body				
MIME body part		**Resource-lists**		
MIME-part-headers				
Content-Type	"application/resource-lists+xml"			
MIME-part-body	Resource-lists as described in Table 5.3.2.4-31			

Table 5.3.2.4-31: Resource-Lists in SIP SUBSCRIBE (Table 5.3.2.4-30)

Derivation Path: Table 5.5.3.3.1-1 condition GROUPKEY

Table 5.3.2.4-32: SIP NOTIFY (Step 7a, Table 5.3.2.3-2B and Step 3, Table 5.3.2.3-2C)

Derivation Path: Table 5.5.2.14-1, condition GROUPCONFIG				
Message-body				
xcap-diff document	xcap-diff document as described in Table 5.3.2.4-33			

Table 5.3.2.4-33: Xcap-Diff Document (Table 5.3.2.4-32)

Derivation Path: Table5.5.3.12-2, condition GROUPKEY

5.3.2A Generic Test Procedure for MCVideo Authorization/Configuration and Key Generation

The same as the procedure described in 5.3.2 with the following exception(s):

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

5.3.2B Generic Test Procedure for MCData Authorization/Configuration and Key Generation

FFS

5.3.3 Generic Test Procedure for MCPTT pre-established session establishment CO

5.3.3.1 Initial conditions

System Simulator:

- SS (MCPTT 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 MCPTT operation in the MCPTT configuration document)

IUT:

- UE (MCPTT client)
  - The UE has performed the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in clause 5.3.2 and thereby the MCPTT client is authorised for and able to use the MCPTT service including making group and private calls on- and off-network, and, the MCPTT user is registered for receiving MCPTT service through the MCPTT 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: MCPTT pre-established session establishment CO

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Void	-	-	-	-
1A	E-UTRA/EPC signalling according to steps 2 - 8 of clause 5.4.13 'Generic Test Procedure for MCPTT radio bearer establishment for use of pre-established session' takes place	-	-	-	-
2-7	Void	-	-	-	-
8	Check: Does the UE (MCPTT Client) send a SIP INVITE message in order to create a pre-established session?	-->	SIP INVITE	-	P
8A	The SS sends SIP 100 Trying	<--	SIP 100 Trying	-	-
9	Void	-	-	-	-
10	The SS (MCPTT server) responds with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
10A	Check: Does the UE (MCPTT 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 (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.		
feature-param	"audio"	This feature tag indicates that the device supports audio as a streaming media type.		
Accept			RFC 3261 [22]	
media-range[1]	"application/sdp"			
Accept-Contact			RFC 3841 [29]	
ac-value[1]				
feature-param	"+g.3gpp.mcptt"			
req-param	"require"			
explicit-param	"explicit"			
Answer-Mode	not present			
Content-Type				
media-type	"application/sdp"			
Message-body				
SDP Message	SDP message as described in Table 5.5.3.1.1-1 with conditions PRE_ESTABLISHED, INITIAL_SDP_OFFER			

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

Derivation Path: Table 5.5.2.17.1.2-1 with 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		

5.3.3A Generic Test Procedure for MCVideo pre-established session establishment CO

The same as the procedure described in 5.3.3 with the following exception(s):

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

5.3.4 Generic Test Procedure for MCPTT 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.

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: MCPTT 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 MCPTT call establishment described in clause 5.4.4 'Generic Test Procedure for MCPTT CT communication in E-UTRA' take place.	-	-	-	-
2	The SS (MCPTT Server) sends a SIP INVITE requesting the establishment/modification of an MCPTT 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 (MCPTT client) sends SIP 100 (Trying)	-->	SIP 100 (Trying)	-	-
4	Check: Does the UE (MCPTT client) respond to the SIP INVITE with SIP 200 (OK)?	-->	SIP 200 (OK)	-	P
5	The SS (MCPTT 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:

Table 5.3.4.4-1: SIP 200 (OK) (step 4, Table 5.3.4.3-1)

Derivation Path: Table 5.5.2.17.1.1-1 with condition INVITE-RSP and MCPTT

5.3.5 Generic Test Procedure for MCPTT CT group call establishment, 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.

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: MCPTT CT group call establishment, manual commencement

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: Steps 1a1-1b1 describe 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 5.4.4 'Generic Test Procedure for MCPTT CT communication in E-UTRA' take place.	-	-	-	-
1b1	IF in RRC_IDLE state having a pre-established session, the E-UTRA/EPC actions which are related to the MCPTT call establishment described in clause 5.4.13 Generic Test Procedure for MCPTT radio bearer establishment for use of pre-established session' take place.	-	-	-	-
2	The SS (MCPTT Server) sends an initial SIP INVITE requesting the establishment of an MCPTT 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 (MCPTT 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 (MCPTT client) send SIP 183 (Session Progress) unreliably?	-->	SIP 183 (Session Progress)	-	P
5a2	The SS stops Timer_1.	-	-	-	-
5b1	Check: Does the UE (MCPTT client) send SIP 183 (Session Progress) reliably?	-->	SIP 183 (Session Progress)	-	P
5b2	The SS stops Timer_1.	-	-	-	-
5b3	The SS (MCPTT Server) acknowledges the receipt of SIP 183 (Session Progress)	<--	PRACK	-	-
5b4	The UE (MCPTT Client) responds PRACK with SIP 200 (OK)	-->	SIP 200 (OK)	-	-
5c1	Check: Does Timer_1 expire?	-	-	-	P
5A	Check: Does the UE (MCPTT client) notify the User of the incoming call request? (NOTE 1)	-	-	-	P
6	Make UE (MCPTT User) accept the call (NOTE 1)	-	-	-	-
7	Check: Does the UE (MCPTT client) respond to the SIP INVITE with SIP 200 (OK)?	-->	SIP 200 (OK)	-	P
8	The SS (MCPTT 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:

Table 5.3.5.4-1: SIP INVITE (step 2, Table 5.3.5.3-1)

Derivation Path: Table 5.5.2.5.2-1 with condition MANUAL and GROUP-CALL and MCPTT

Table 5.3.5.4-1A: SIP 183 (Session Progress) (step 5a1, Table 5.3.5.3-1)

Derivation Path: Table 5.5.2.16.3.1-1 with condition MCPTT

Table 5.3.5.4-2: SIP 183 (Session Progress) (step 5b1, Table 5.3.5.3-1)

Derivation Path: Table 5.5.2.16.3.1-1 with condition 100rel and MCPTT

Table 5.3.5.4-3: SIP 200 (OK) (step 7, Table 5.3.5.3-1)

Derivation Path: Table 5.5.2.17.1.1-1 with condition INVITE-RSP and MCPTT

5.3.6 Generic Test Procedure for MCPTT CT private call establishment, manual commencement

5.3.6.1 Initial conditions

The same initial conditions apply as specified in clause 5.3.3.1.

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: MCPTT CT private call establishment, 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 MCPTT call establishment described in clause 5.4.4 'Generic Test Procedure for MCPTT CT communication in E-UTRA' take place.	-	-	-	-
2	The SS (MCPTT Server) sends an initial SIP INVITE requesting the establishment of an MCPTT 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 (MCPTT client) sends 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 (MCPTT client) send a SIP 180 (Ringing) unreliably?	-->	SIP 180 (Ringing)	-	P
4b1	Check: Does the UE (MCPTT client) send a SIP 180 (Ringing) reliably?	-->	SIP 180 (Ringing)	-	P
4b2	The SS (MCPTT Server) acknowledges the receipt of SIP 180 (Ringing)	<--	PRACK	-	-
4b3	The UE (MCPTT Client) responds PRACK with SIP 200 (OK)	-->	SIP 200 (OK)	-	-
4A	Check: Does the UE (MCPTT client) notify the User of the incoming call request? (NOTE 1)	-	-	-	P
5	Make UE (MCPTT User) accept the call	-	-	-	-
6	Check: Does the UE (MCPTT client) respond to the SIP INVITE with SIP 200 (OK)?	-->	SIP 200 (OK)	-	P
7	The SS (MCPTT 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 with the following clarifications:

Table 5.3.6.4-1: SIP INVITE (step 2, Table 5.3.6.3-1)

Derivation Path: Table 5.5.2.5.2-1 with condition MANUAL and PRIVATE-CALL and MCPTT

Table 5.3.6.4-1A: SIP 180 (Ringing) (step 4a1, Table 5.3.6.3-1)

Derivation Path: Table 5.5.2.16.2.1-1 with condition MCPTT

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 with condition 100rel and MCPTT

Table 5.3.6.4-3: SIP 200 (OK) (step 6, Table 5.3.6.3-1)

Derivation Path: Table 5.5.2.17.1.1-1 with condition INVITE-RSP and MCPTT

5.3.7 Generic Test Procedure for MCPTT CO session establishment/modification without provisional responses other than 100 Trying

5.3.7.1 Initial conditions

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

5.3.7.2 Definition of system information messages

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

5.3.7.3 Procedure

Table 5.3.7.3-1: 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 'Generic Test Procedure for MCPTT 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 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 (NOTE1)	-	-	-	-
6a1	The SS (MCPTT server) sends a Floor Granted message.	<--	Floor Granted	-	-

NOTE1: Possibilities in SDP-offer/answer depend on the test case requirements

a. UE sends SDP offer without implicit floor request

b. UE sends SDP offer 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 ar step 6a1)

iii. SDP answer from SS contains no “mc_implicit_request”and no “mc_granted” (the UE needs to explicitly request the floor)

5.3.7.4 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 5.3.7.4-1: SIP INVITE (step 2, Table 5.3.7.3-1)

Derivation Path: Table 5.5.2.5.2-1 with condition MCPTT

Table 5.3.7.4-2: SIP 200 (OK) (step 4, Table 5.3.7.3-1)

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

5.3.8 Generic Test Procedure for MCPTT CO private call establishment, manual commencement

5.3.8.1 Initial conditions

The same initial conditions apply as specified in clause 5.3.3.1.

5.3.8.2 Definition of system information messages

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

5.3.8.3 Procedure

Table 5.3.8.3-1: MCPTT CO private call establishment, 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 MCPTT call establishment described in clause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCPTT Client) send a SIP INVITE requesting the establishment of an MCPTT call?	-->	SIP INVITE	-	P
3	The SS sends SIP 100 Trying	<--	SIP 100 (Trying)	-	-
4	The SS (MCPTT server) responds with a SIP 180 (Ringing)	<--	SIP 180 (Ringing)	-	-
5	The SS (MCPTT server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
6	Check: Does the UE (MCPTT Client) send a SIP ACK to acknowledge the session establishment/modification?	-->	SIP ACK	-	P
-	EXCEPTION: Steps 7a1 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 (NOTE1)	-	-	-	-
7a1	The SS (MCPTT server) sends a Floor Granted message.	<--	Floor Granted	-	-

NOTE1: Possibilities in SDP-offer/answer depend on the test case requirements
- a. UE sends SDP offer without implicit floor request
- b. UE sends SDP offer 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 ar step 7a1)
  - iii. SDP answer from SS contains no “mc_implicit_request”and no “mc_granted” (the UE needs to explicitly request the floor)

5.3.8.4 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 5.3.8.4-1: SIP INVITE (step 2, Table 5.3.8.3-1)

Derivation Path: Table 5.5.2.5.2-1 with condition MANUAL and PRIVATE-CALL and MCPTT

Table 5.3.8.4-2: SIP 200 (OK) (step 5, Table 5.3.8.3-1)

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

5.3.9 Generic Test Procedure for MCPTT CO call establishment using a pre-established session

5.3.9.1 Initial conditions

As specified in the test case which calls the procedure.

5.3.9.2 Definition of system information messages

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

5.3.9.3 Procedure

Table 5.3.9.3-1: 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 5.4.4 'Generic Test Procedure for MCPTT CT 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 Acknowledgement in response to the Connect message?	-->	Acknowledge	-	P

5.3.9.4 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:

none

5.3.10 Generic Test Procedure for MCPTT CO call release

5.3.10.1 Initial conditions

As specified in the test case which calls the procedure.

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: MCPTT CO call release

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT Client) send a SIP BYE request to terminate the MCPTT session?	-->	SIP BYE	-	P
2	The SS (MCPTT Server) responds with a SIP 200 (OK) message?	<--	SIP 200 (OK)	-	-
-	EXCEPTION: The SS waits 2 seconds before the SS deactivates the dedicated EPS bearer and 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.	-	-	-	-

5.3.10.4 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 Generic Test Procedure for MCPTT CO call release keeping the pre-established session

5.3.11.1 Initial conditions

As specified in the test case which calls the procedure.

5.3.11.2 Definition of system information messages

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

5.3.11.3 Procedure

Table 5.3.11.3-1: 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)	-	-
-	EXCEPTION: 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.	-	-	-	-

5.3.11.4 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 5.3.11.4-1: SIP REFER (step 1, Table 5.3.11.3-1)

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

5.3.12 Generic Test Procedure for MCPTT CT call release

5.3.12.1 Initial conditions

As specified in the test case which calls the procedure.

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: MCPTT CT call release

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS (MCPTT Server) sends a SIP BYE request to terminate the MCPTT session.	<--	SIP BYE	-	-
2	Check: Does the UE (MCPTT Client) respond with a SIP 200 (OK) message?	-->	SIP 200 (OK)	-	P
-	EXCEPTION: The SS waits 2 seconds before the SS deactivates the dedicated EPS bearer and releases the RRC connection. NOTE: 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 Generic Test Procedure for MCPTT CT call release keeping the pre-established session

5.3.13.1 Initial conditions

As specified in the test case which calls the procedure.

5.3.13.2 Definition of system information messages

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

5.3.13.3 Procedure

Table 5.3.13.3-1: MCPTT CT call release keeping the pre-established session

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	SS (MCPTT Server) releases the call by sending a Disconnect message	<--	Disconnect	-	-
2	Check: Does the UE (MCPTT Client) send an Acknowledgement to accept the release of the call?	-->	Acknowledge	-	P
-	EXCEPTION: 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.	-	-	-	-

5.3.13.4 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

5.3.14 Generic Test Procedure for MCPTT CO session modification with implicit Floor Control

5.3.14.1 Initial conditions

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

5.3.14.2 Definition of system information messages

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

5.3.14.3 Procedure

Table 5.3.14.3-1: MCPTT CO session modification with implicit Floor Control

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT Client) send a SIP INVITE requesting the establishment/modification of an MCPTT call?	-->	SIP re-INVITE	-	P
2	The SS sends 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 establishment/modification?	-->	SIP ACK	-	P
5	The SS (MCPTT Server) sends a Floor Granted message with an acknowledgement required.	<--	Floor Granted	-	-
6	Check: Does the UE (MCPTT Client) sends a Floor Ack message in response to the Floor Granted message?	-->	Floor Ack	-	P

5.3.14.4 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:

Table 5.3.14.4-1: SIP 200 (OK) (step 2, Table 5.3.14.3-1)

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

5.3.15 Generic Test Procedure for MCPTT CO session modification without implicit Floor Control

5.3.15.1 Initial conditions

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

5.3.15.2 Definition of system information messages

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

5.3.15.3 Procedure

Table 5.3.15.3-1: MCPTT CO session modification without implicit Floor Control

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT Client) send a SIP INVITE requesting the establishment/modification of an MCPTT call?	-->	SIP re-INVITE	-	P
2	The SS sends 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 establishment/modification?	-->	SIP ACK	-	P
5	The SS (MCPTT Server) sends a Floor Idle message with no acknowledgement required.	<--	Floor Idle	-	-

5.3.15.4 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 5.3.15.4-1: SIP 200 (OK) (step 2, Table 5.3.15.3-1)

Derivation Path: Table 5.5.2.17.1.2-1 with condition INVITE-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**SDP message**	RFC 4566	
MIME-part-body	SDP message as described in Table 5.3.15.4-2			

Table 5.3.15.4-2: SDP in SIP 200 (OK) (Table 5.3.15.4-1)

Derivation Path: Table 5.5.3.1.2-1 SDP Message from the SS for MCPTT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Media description[2]		**Media description for media control**		
media attribute		a= line attribute = fmtp		
fmtp				
format specific parameters				
mc_implicit_request	Not present	Parameter has no value	TS 24.380 [10] cl. 12.1.2.3	

5.3.16 Generic Test Procedure for MCPTT Floor Request – Floor Granted

5.3.16.1 Initial conditions

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

5.3.16.2 Definition of system information messages

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

5.3.16.3 Procedure

Table 5.3.16.3-1: 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 an acknowledgement required.	<--	Floor Granted	-	-
3	Check: Does the UE (MCPTT Client) send a Floor Ack message in response to the Floor Granted message?	-->	Floor Ack	-	P
4	Check: Does the UE (MCPTT Client) provide floor granted notification to the MCPTT User? (NOTE 1)	-	-	-	P
NOTE 1: This expected to be done via a suitable implementation dependent MMI.					

5.3.16.4 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:

none

5.3.17 Generic Test Procedure for MCPTT Floor Request – Floor Queue Position Info

5.3.17.1 Initial conditions

As specified in the test case which calls the procedure.

5.3.17.2 Definition of system information messages

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

5.3.17.3 Procedure

Table 5.3.17.3-1: 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 was queued message with no acknowledgement required.	<--	Floor Queue Position Info	-	-

5.3.17.4 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.

5.3.18 Generic Test Procedure for MCPTT Queuing Position Request

5.3.18.1 Initial conditions

As specified in the test case which calls the procedure.

5.3.18.2 Definition of system information messages

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

5.3.18.3 Procedure

Table 5.3.18.3-1: 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 with no acknowledgement required.	<--	Floor Queue Position Info	-	-

5.3.18.4 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

5.3.19 Generic Test Procedure for MCPTT Floor Request – Floor Deny

5.3.19.1 Initial conditions

As specified in the test case which calls the procedure.

5.3.19.2 Definition of system information messages

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

5.3.19.3 Procedure

Table 5.3.19.3-1: 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 with no acknowledgement required	<--	Floor Deny	-	-
3	Check: Does the UE (MCPTT Client) provide floor deny notification to the MCPTT User? (NOTE 1)	-	-	-	P
NOTE 1: This expected to be done via a suitable implementation dependent MMI.					

5.3.19.4 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

5.3.20 Generic Test Procedure for MCPTT Floor Release – Floor Idle

5.3.20.1 Initial conditions

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

5.3.20.2 Definition of system information messages

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

5.3.20.3 Procedure

Table 5.3.20.3-1: 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 in response to the Floor Release message	<--	Floor Ack	-	-
3	The SS (MCPTT Server) sends a Floor Idle message with no acknowledgement required.	<--	Floor Idle	-	-

5.3.20.4 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

5.3.21 Generic Test Procedure for MCPTT Floor Release – Floor Taken

5.3.21.1 Initial conditions

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

5.3.21.2 Definition of system information messages

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

5.3.21.3 Procedure

Table 5.3.21.3-1: 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 in response to the Floor Release message	<--	Floor Ack	-	-
3	The SS (MCPTT Server) sends a Floor Taken message with no acknowledgement required.	<--	Floor Taken	-	-

5.3.21.4 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

5.3.22 Generic Test Procedure for 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.

5.3.22.2 Definition of system information messages

-

5.3.22.3 Procedure

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

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The SS (MCPTT server) sends a SIP NOTIFY to the UE informing about change of group A's configuration document.	<--	SIP NOTIFY	-	-
2	The UE sends a SIP 200 (OK) message to the SS.	-->	SIP 200 (OK)	-	-
2A-2F	Void	-	-	-	-
3	The UE (MCPTT client) sends an HTTP GET Request message to the SS that contains the access token and the XCAP-URI of the Group Configuration document.	-->	HTTP GET	-	-
4	The SS (MCPTT server) sends the HTTP 200 (OK) message including the updated Group Document	<--	HTTP 200 (OK)	-	-
5	The SS (MCPTT server) sends a SIP NOTIFY message to the UE containing the group key transport payloads (GKTP) document including the group keys.	<-	SIP NOTIFY	-	-
5a1-5a2	Void	-	-	-	-
6	The UE (MCPTT 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 5.5.7.1-3				
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	
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	
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	
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	
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)

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)

Derivation Path: Table 5.5.3.12-2, condition GROUPKEY				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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)

Derivation Path: TS 24.481 [11] clause 7.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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			
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)

Derivation Path: Table 5.5.9.1-3			
Field	**Value/remark**	**Comment**	**Condition**
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.	
}			
}			
}			
..}			
}			

5.3.23 Generic Test Procedure for MCPTT CT Call establishment automatic commencement using a pre-established session

5.3.23.1 Initial conditions

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

5.3.23.2 Definition of system information messages

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

5.3.23.3 Procedure

Table 5.3.23.3-1: MCPTT CT Call establishment automatic commencement using a pre-established session

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	E-UTRA/EPC signalling according to clause 5.4.13 'Generic Test Procedure for MCPTT radio bearer establishment for use of pre-established session' 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 Acknowledgement to accept the incoming pre-arranged group call using a pre-established session?	-->	Acknowledge	-	P

5.3.23.4 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

5.3.24 Generic Test Procedure for UE initiated MCPTT functional alias status determination and subscription

5.3.24.1 Initial conditions

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

5.3.24.2 Definition of system information messages

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

5.3.24.3 Procedure

Table 5.3.24.3-1: MCPTT functional alias status determination and subscription

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User 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 MCPTT call establishment described in clause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA' take place.	-	-	-	-
3	Check: Does the UE (MCPTT Client) send a SIP SUBSCRIBE requesting the status of any existing functional aliases?	-->	SIP SUBSCRIBE	-	P
4	The SS (MCPTT server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
5	The SS (MCPTT server) sends a SIP NOTIFY with functional alias information	<--	SIP NOTIFY	-	-
6	Check: Does the UE (MCPTT Client) send a SIP 200 (OK)?	-->	SIP 200 (OK)	-	P
-	EXCEPTION: The SS waits 2 seconds before the SS deactivates the dedicated EPS bearer and 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.					

5.3.24.4 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 5.3.24.4-1: SIP SUBSCRIBE (step 3, Table 5.3.24.3-1)

Derivation Path: Table 5.5.2.14-1 with condition MCPTT				
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	
Message-body			TS 24.379 [9] clause 9A.2.1.3	
MIME body part		**MCPTT Info**		
MIME-part-body	MCPTT-Info as described in Table 5.3.24.4-2			

Table 5.3.24.4-2: MCPTT-Info in SIP SUBSCRIBE (Table 5.3.24.4-1)

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	

Table 5.3.24.4-3: SIP 200 (OK) (step 4, Table 5.3.24.3-1)

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

Table 5.3.24.4-4: SIP NOTIFY (step 5, Table 5.3.24.3-1)

Derivation Path: Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**PIDF**	TS 24.379 [9] clause 9A.2.2. 2.5	
MIME-part-body	PIDF as described in Table 5.3.24.4-5			

Table 5.3.24.4-5: PIDF in SIP NOTIFY (Table 5.3.24.4-4)

Derivation Path: Table 5.5.3.5.2-1 (NOTE 1)
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

5.3.25 Generic Test Procedure for UE initiated MCPTT functional alias status change

5.3.25.1 Initial conditions

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

5.3.25.2 Definition of system information messages

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

5.3.25.3 Procedure

Table 5.3.25.3-1: MCPTT functional alias status change

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User 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 MCPTT call establishment described in clause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA' take place.	-	-	-	-
3	Check: Does the UE (MCPTT Client) send a SIP PUBLISH requesting the status change of a functional alias?	-->	SIP PUBLISH	-	P
4	The SS (MCPTT server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
5	The SS (MCPTT server) sends a SIP NOTIFY with functional alias information	<--	SIP NOTIFY	-	-
6	Check: Does the UE (MCPTT Client) send a SIP 200 (OK)?	-->	SIP 200 (OK)	-	P
-	EXCEPTION: The SS waits 2 seconds before the SS deactivates the dedicated EPS bearer and 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.					

5.3.25.4 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 5.3.25.4-1: SIP PUBLISH (step 3, Table 5.3.25.3-1)

Derivation Path: Table 5.5.2.11-1 with 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	
MIME-part-body	MCPTT-Info as described in Table 5.3.25.4-2			
MIME body part		**PIDF**	TS 24.379 [9] clause 9A.2.1.2	
MIME-part-body	PIDF as described in Table 5.3.25.4-3			

Table 5.3.25.4-2: MCPTT-Info in SIP PUBLISH (Table 5.3.25.4-1)

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 5.3.25.4-3: PIDF in SIP PUBLISH (Table 5.3.25.4-1)

Derivation Path: Table 5.5.3.5.1-1 with condition FUNCTIONAL_ALIAS_STATUS_CHANGE

Table 5.3.25.4-4: SIP 200 (OK) (step 4, Table 5.3.25.3-1)

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

Table 5.3.25.4-5: SIP NOTIFY (step 5, Table 5.3.25.3-1)

Derivation Path: Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**PIDF**	TS 24.379 [9] clause 9A.2.2. 2.5	
MIME-part-body	PIDF as described in Table 5.3.25.4-6			

Table 5.3.25.4-6: PIDF in SIP NOTIFY (Table 5.3.25.4-5)

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

5.3.26 Generic Test Procedure for MCPTT CO Group Creation

5.3.26.1 Initial conditions

As specified in the test case which calls the procedure.

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: MCPTT CO Group Creation procedure

St	**Procedure**	**Message Sequence**		**TP**	**Verdict**
		U - S	**Message**		
1a1-1a2	Void	-	-	-	-
1	Check: Does the UE (MCPTT Client) send a HTTP PUT to the SS to request for creation of the new group?	-->	HTTP PUT	-	P
2	The SS (MCPTT Server) sends a 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:

Table 5.3.26.4-1..2: Void

Table 5.3.26.4-3: HTTP PUT (Step 1, Table 5.3.26.3-1)

Derivation Path: Table 5.5.4.4-1, condition GROUPCREATE

Table 5.3.26.4-4..25: Void

5.3.27 Generic Test Procedure for MCPTT CO Temporary Group Creation

5.3.27.1 Initial conditions

As specified in the test case which calls the procedure.

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: MCPTT CO Temporary Group Creation procedure

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT Client) send a HTTP POST to the SS to request for creation of a temporary group?	-->	HTTP POST	-	P
2	The SS (MCPTT Server) sends a 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:

Table 5.3.27.4-1: HTTP POST (Step 1, Table 5.3.27.3-1)

Derivation Path: Table 5.5.4.3-1, condition TEMPGROUP

Table 5.3.27.4-2: HTTP 200 (OK) (Step 2, Table 5.3.27.3-1)

Derivation Path: Table 5.5.4.6-1, condition TEMPGROUP

5.3.28 Generic Test Procedure for MCPTT CO Temporary Group Tear Down

5.3.28.1 Initial conditions

As specified in the test case which calls the procedure.

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: MCPTT CO Temporary Group Creation procedure

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

Table 5.3.28.4-1: HTTP DELETE (Step 1, Table 5.3.28.3-1)

Derivation Path: Table 5.5.4.5-1, condition TEMPGROUP

5.3.29 Generic Test Procedure for MCPTT 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.

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: MCPTT 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 MCPTT call establishment described in clause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA' take place.	-	-	-	-
2	Check: Does the UE (MCPTT Client) send a SIP SUBSCRIBE message request?	-->	SIP SUBSCRIBE	-	P
3	The SS (MCPTT Server) responds to the SIP SUBSCRIBE message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
4	The SS (MCPTT Server) sends a SIP NOTIFY message	<--	SIP NOTIFY	-	-
5	The UE (MCPTT Client) responds with a SIP 200 (OK) message.	-->	SIP 200 (OK)		
-	EXCEPTION: SS (MCPTT Server) releases the E-UTRA connection.	-	-	-	-

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

5.4 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

A MCPTT (or in general Mission Critical Services) capable UE, depending on implementation/deployment, may be provided with up to 3 MCPTT related APN: An APN utilised by the MCPTT service including the MCPTT service APN for the SIP-1 reference point, an MC common core services APN for the HTTP-1 reference point and a MC identity management service APN for the CSC-1 reference point (see TS 23.179 [8], clause 5.2.9).

To limit the test specification complexity utilisation of single APN/PDN to be used for all 3 MCPTT services is assumed and only 2 QCIs are used for the bearers established in regard to the PDN:

1. MCPTT (QCI=69 for signalling bearer, QCI=65 for voice)

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.

In addition to the MCPTT relevant APN, a MCPTT (or in general Mission Critical Services) capable UE may support 2 additional different APNs for which different PDNs each with its specific QCI:

2. Internet (QCI=9)

3. IMS (VOLTE QCI=5 for signalling bearer, QCI=1 for voice call)

This will result in the need the MCPTT tests to be able to handle a 3 APNs and different PDNs.

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

Consequently, for the IMS and MCPTT 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 MCPTT. 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).

In regard to the MCPTT the following shall be also taken into account

- If the PDN connection established during the initial attach by the UE is to an APN other than the MCPTT service APN, then prior to user authentication, the UE shall establish another PDN connection to the MCPTT service APN. PDN connection establishment can also be caused by a SIP registration request for MCPTT. The QCI value of 69 shall be used for the EPS bearer that transports SIP-1 reference point messaging. It is used for SIP signalling.

- For the MCPTT service APN, the MCPTT UE does not activate EPS bearers for media streams.

- The network initiates the creation of a dedicated bearer to transport the voice media. The dedicated bearer for Conversational Voice utilises the standardised QCI value of 65. The network, utilising dynamic PCC, creates no more than one dedicated bearer for voice media (the UE is required to support at minimum one UM bearer which is used for MCPTT voice).

Editor's Note: The requirements in regard to MCVideo and MCData are FFS.

5.4.2 Generic Test Procedure for 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 16Abelow the events described in table 5.4.2.3-2 take 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. NOTE 2	-	-
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.

NOTE 2: This will start a 5 stage process. The first stage involves MCPTT User Authentication and includes Steps 3a1 through 10 of Table 5.3.2.3-1. The end result of the first stage is the MCPTT Client receives 3 tokens: access token, ID token, and refresh token.

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 SIP registration for MCPTT as specified in table 5.4.2.3-2 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: SIP registration for MCPTT

St	Procedure	Message Sequence	
		U - S	Message
-	EXCEPTION: In parallel to the event described in steps 1 to 4 below the MCPTT user authentication as according to table 5.3.2.3-1 take place.		
1	The UE sends 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
3	The UE completes the security negotiation procedures, sets up a temporary set of SAs and uses those for sending another REGISTER with AKAv1-MD5 credentials.	-->	SIP REGISTER
4	The SS responds with 200 OK.	<--	SIP 200 OK
5-6	Void		
6A	The generic procedure for MCPTT Service Authorization as specified in table 5.3.2.3-2 takes place		
7	The SS (MCPTT server) sends SIP MESSAGE for configuring Location Info reporting.	<--	SIP MESSAGE
8	The UE (MCPTT client) responds with SIP 200 (OK)	-->	SIP 200 (OK)

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.

The MCPTT relevant SIP message contents, Table 5.4.2.3-2, are specified in the present document clause 5.5.2, except for the following messages.

Table 5.4.2.4-1: SIP MESSAGE (step 7)

Derivation Path: Table 5.5.2.7.2-1 SIP MESSAGE from the SS, condition LOCATION-INFO				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**MCPTT Info**		
MIME-part-body	As described in Table 5.4.2.4-1A			

Table 5.4.2.4-1A: MCPTT Info in SIP MESSAGE (Table 5.4.2.4-1)

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 5.4.2.4-2: SIP 200 (OK) (Step 8, Table 5.4.2.3-2)

Derivation Path: Table 5.5.2.17.1.1-1

Table 5.4.2.4-3: REGISTER (Step 1, Table 5.4.2.3-2)

Derivation Path: Table 5.5.2.13-1 with condition SIP_REGISTER_INITIAL

Table 5.4.2.4-4: SIP 401 (Unauthorized) (Step 2, Table 5.4.2.3-2)

Derivation Path: Table 5.5.2.19.7-1

Table 5.4.2.4-5: REGISTER (Step 3, Table 5.4.2.3-2)

Derivation Path: Table 5.5.2.13-1

Table 5.4.2.4-6: SIP 200 (OK) (Step 4, Table 5.4.2.3-2)

Derivation Path: Table 5.5.2.17.1.2-1

5.4.2A Generic Test Procedure for 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 Generic Test Procedure for 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 Generic Test Procedure for MCPTT CO communication in E-UTRA

5.4.3.1 Initial conditions

System Simulator:

- SS (MCPTT 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 (MCPTT client)
  - The test USIM set as defined in clause 5.5.10 is inserted.
  - The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in clause 5.4.2 and is in E-UTRA Registered, Idle Mode state with the MCPTT 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 MCPTT and SIP signalling.

  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.

  - Detailed initial conditions for the UE (MCPTT client) shall be specified in the TC 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 MCPTT CO communication

St	Procedure	Message Sequence	
		U - S	Message
1	Make the UE attempt an MCPTT call	-	-
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*
7	The SS configures a new data radio bearer, associated with the default EPS bearer context. The *RRCConnectionReconfiguration* message is using condition SRB2-DRB(1, 0) as specified in TS 36.508 [6] clause 4.8.2.2.1. The DRB associated with default EPS bearer context obtained during the attach procedure is established (see Preamble).	<--	RRC: *RRCConnectionReconfiguration*
-	EXCEPTION: In parallel to the events described below, depending on the test case, one of the generic procedures in clause 5.3 for MCPTT CO call establishment, starting with step 2, takes place	-	-

St	Procedure	Message Sequence	
		U - S	Message
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*
9-12	Void.	-	-
13	The SS configures a new RLC-UM data radio bearer, associated with the dedicated EPS bearer context. *RRCConnectionReconfiguration* message contains the ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST message. EPS bearer context #5 (QCI 65) according to table 6.6.2-1: Reference dedicated EPS bearer contexts is used. NOTE 1: The same MCPTT PDN address is applicable because the linked EPS bearer ID refers to the default EBC. NOTE 2: The network initiates the creation of a dedicated bearer to transport the voice media see 5.4.1A.	<--	RRC: *RRCConnectionReconfiguration* NAS: ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST
14	The UE transmits an *RRCConnectionReconfigurationComplete* message to confirm the establishment of the new data radio bearer, associated with the default EPS bearer for emergency IMS signalling.	-->	RRC: *RRCConnectionReconfigurationComplete*
15	The UE transmits an ACTIVATE DEDICATED EPS BEARER CONTEXT ACCEPT message.	-->	RRC: ULInformationTransfer NAS:ACTIVATE DEDICATED EPS BEARER CONTEXT ACCEPT

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 Generic Test Procedure for MCVideo CO communication in E-UTRA

The same as the procedure described in 5.4.3 with the following exception(s):

- The term "MCPTT" is replaced with "MCVideo".
- EPS bearer context #3 (QCI 2) according to TS 36.508 [6], table 6.6.2-1: Reference dedicated EPS bearer contexts is used.

5.4.3B Generic Test Procedure for MCData CO communication in E-UTRA

The same as the procedure described in 5.4.3 with the following exception(s):

- The term "MCPTT" is replaced with "MCData", and the term "call" with "communication".
- EPS bearer context #[9] (QCI 70) according to TS 36.508 [6], table 6.6.2-1: Reference dedicated EPS bearer contexts is used.

5.4.4 Generic Test Procedure for MCPTT CT communication in E-UTRA

5.4.4.1 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 test USIM set as defined in clause 5.5.10 is inserted.
  - The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in clause 5.4.2 and is in E-UTRA Registered, Idle Mode state with the MCPTT 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 MCPTT and SIP signalling.

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.

  - Detailed initial conditions for the UE (MCPTT client) shall be specified in the TC 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 MCPTT CT communication

St	Procedure	Message Sequence	
		U - S	Message
1	SS sends a *Paging* message to the UE 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*
7	The SS configures a new data radio bearer, associated with the default EPS bearer context. The *RRCConnectionReconfiguration* message is using condition SRB2-DRB(1, 0) as specified in TS 36.508 [6] clause 4.8.2.2.1. The DRB associated with default EPS bearer context obtained during the attach procedure is established (see Preamble).	<--	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*
-	EXCEPTION: In parallel to the events described below, depending on the test case, one of the generic procedures in clause 5.3 for MCPTT CT call establishment, starting with step 2, takes place	-	-
9-12	Void.	-	-

St	Procedure	Message Sequence	
		U - S	Message
13	The SS configures a new RLC-UM data radio bearer, associated with the dedicated EPS bearer context. *RRCConnectionReconfiguration* message contains the ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST message. EPS bearer context #5 (QCI 65/69) according to table 6.6.2-1: Reference dedicated EPS bearer contexts is used. NOTE 1: The same MCPTT PDN address is applicable because the linked EPS bearer ID refers to the default EBC. NOTE 2: The network initiates the creation of a dedicated bearer to transport the voice media see 5.4.1A.	<--	RRC: *RRCConnectionReconfiguration* NAS: ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST
14	The UE transmits an *RRCConnectionReconfigurationComplete* message to confirm the establishment of the new data radio bearer, associated with the default EPS bearer for emergency IMS signalling.	-->	RRC: *RRCConnectionReconfigurationComplete*
15	The UE transmits an ACTIVATE DEDICATED EPS BEARER CONTEXT ACCEPT message.	-->	RRC: ULInformationTransfer NAS:ACTIVATE DEDICATED EPS BEARER CONTEXT ACCEPT
16	Void	-	-

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 Generic Test Procedure for MCVideo CT communication in E-UTRA

The same as the procedure described in 5.4.4 with the following exception(s):

- The term "MCPTT" is replaced with "MCVideo".
- EPS bearer context #3 (QCI 2) according to TS 36.508 [6], table 6.6.2-1: Reference dedicated EPS bearer contexts is used.

5.4.4B Generic Test Procedure for MCData CT communication in E-UTRA

The same as the procedure described in 5.4.4 with the following exception(s):

- The term "MCPTT" is replaced with "MCData", and the term "call" with "communication".
- EPS bearer context #[9] (QCI 70) according to TS 36.508 [6], table 6.6.2-1: Reference dedicated EPS bearer contexts is used.

5.4.5 Generic Test Procedure for MCPTT 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 (MCPTT 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 (MCPTT client):

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

  - Detailed initial conditions for the UE (MCPTT 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 MCPTT 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 Generic Test Procedure for MCPTT 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 (MCPTT 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 (MCPTT client)
  - The test USIM set as defined in clause 5.5.10 is inserted.
  - Detailed initial conditions for the UE (MCPTT 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 MCPTT 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 $K_{D\text{-}sess}$ 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 Generic Test Procedure for MCPTT 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 (MCPTT Client).

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

IUT:

- UE (MCPTT client)

  ProSe related configuration

  - Same as those defined in the 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.5, or, the 'Generic Test Procedure for MCPTT 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 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.5, or, the 'Generic Test Procedure for MCPTT 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 MCPTT 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 Generic Test Procedure for MCPTT 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 (MCPTT Client).
  - Same as those defined in the 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.5, or, the 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.6.

IUT:

- UE (MCPTT client)

  ProSe related configuration
  - Same as those defined in the 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.5, or, the 'Generic Test Procedure for MCPTT 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 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment', as described in clause 5.4.5, or, the 'Generic Test Procedure for MCPTT 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 MCPTT 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 Generic Test Procedure for MCPTT communication in E-UTRA / Change of cells

5.4.9.1 Initial conditions

System Simulator:

- SS (MCPTT 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 (MCPTT client)
  - The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in clause 5.4.2 and is in E-UTRA Registered, Idle Mode state on Cell 1 with the MCPTT 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 MCPTT and SIP signalling. The UE is allowed to operate on both PLMN1 and PLMN2.

  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.

- The UE has performed the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in clause 5.3.2 and thereby the MCPTT client is authorised for and able to use the MCPTT service including making group and private calls on- and off-network, and, the MCPTT user is registered for receiving MCPTT service through the MCPTT Client. The PLMN1 is set as HPLMN and PLMN2 is set as VPLMN in Table 5.5.8.1-1: MCPTT Initial UE Configuration Defaults.

- Detailed initial conditions for the UE (MCPTT 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 take place. NOTE 2.	-	-
NOTE 1: Depending on implementation the UE may start transmitting MCPTT protocol relevant data earlier. What may be transmitted is specified in the TCs. NOTE 2: The UE may start transmitting MCPTT 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 Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-many communication out of E-UTRA coverage / Announcing/Discoveree procedure for group member discovery

5.4.10.1 Initial conditions

System Simulator:

- SS-UE1 (MCPTT 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 (MCPTT client)
  - The test USIM set as defined in clause 5.5.10 is inserted.
  - Detailed initial conditions for the UE (MCPTT 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 MCPTT 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 MCPTT procedure taking place.	-	-
-	EXCEPTION: Step 4 is repeated until the MCPTT 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 MCPTT 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 MCPTT protocol data unit in sequence with no response expected between them from the UE.
NOTE 3: What MCPTT protocol data units are included in the sidelink communication is defined in the test case using the present generic procedure.
NOTE 4: The UE may need to send more than one MCPTT 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 Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-many communication out of E-UTRA coverage / Monitoring/Discoverer procedure for group member discovery / One-to-many communication

5.4.11.1 Initial conditions

System Simulator:

- SS-UE1 (MCPTT 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 (MCPTT client)
  - The test USIM set as defined in clause 5.5.10 is inserted.
  - Detailed initial conditions for the UE (MCPTT 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 MCPTT off-network CO 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 3a1-3b3 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 MCPTT procedure taking place.	-	-
-	EXCEPTION: Step 4 is repeated until the MCPTT 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 MCPTT 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 MCPTT protocol data unit in sequence with no response expected between them from the SS-UE1.			
NOTE 3: Which MCPTT protocol data units are included in the sidelink communication is defined in the test case using the present generic procedure.			
NOTE 4: The SS-UE1 may need to send more than one MCPTT 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 Generic Test Procedure for MCPTT communication over MBMS

5.4.12.1 Initial conditions

System Simulator:

- SS (MCPTT 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 (MCPTT client):
  - E-UTRAN UE supporting MBMS services. The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in clause 5.4.2 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 (MCPTT 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: MCPTT 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 MCPTT 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 MCPTT protocol data units are sent and at which time is defined in the test case using the present generic procedure.	<--	MBMS Packet

5.4.12.4 Specific message contents

None.

5.4.13 Generic Test Procedure for MCPTT radio bearer establishment for use of pre-established session

5.4.13.1 Initial conditions

System Simulator:

- SS (MCPTT 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 (MCPTT client)
  - The test USIM set as defined in clause 5.5.10 is inserted.
  - The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in clause 5.4.2 and is in E-UTRA Registered, Idle Mode state with the MCPTT 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 MCPTT and SIP signalling.

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.

  - The UE has performed the Generic Test Procedure for MCPTT pre-established session establishment CO as specified in clause 5.3.3.
  - Detailed initial conditions for the UE (MCPTT client) shall be specified in the TC referring to the present procedure.

5.4.13.2 Definition of system information messages

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

5.4.13.3 Procedure

Table 5.4.13.3-1: MCPTT radio bearer establishment for use of pre-established session

St	Procedure	Message Sequence	
		U - S	Message
1	SS sends a *Paging* message to the UE	<--	RRC: *Paging* (PCCH)
2	The UE transmits an *RRCConnectionRequest* message	-->	RRC: *RRCConnectionRequest*
3	The 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*
7	The SS configures all DRBs, associated with the default EPS bearers established during the attach procedure and another DRB, associated with the dedicated EPS bearer established during pre-established session establishment. The *RRCConnectionReconfiguration* message is using condition SRB2-DRB(n, 1) 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). => The DRB associated with MCPTT default EPS bearer obtained during the attach procedure and the DRB associated with dedicated EPS bearer obtained during the establishment of the pre-established session get established	<--	RRC: *RRCConnectionReconfiguration*
-	EXCEPTION: In parallel to step 8, depending on the test case, the UE may start signalling on the DRBs	-	-
8	The UE transmits an *RRCConnectionReconfigurationComplete* message to confirm the establishment of radio bearers.	-->	RRC: *RRCConnectionReconfigurationComplete*

5.4.13.4 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.

5.5 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.
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.
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

Derivation Path: TS 24.229 [16], clause A.2.1.4.2, A.2.2.4.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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

Derivation Path: TS 24.229 [16], clause A.2.1.4.2, A.2.2.4.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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")		
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]	
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		

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			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]	
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 5.5.2.2.2-1: SIP BYE from the SS

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 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]	MT_CALL
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		
P-Asserted-Identity			RFC 3325 [32]	
addr-spec				
user-info and host	tsc_MCPTT_PublicServiceId_A	The URI of the SS		
port	not present			
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

Derivation Path: TS 24.229 [16], clause A.2.1.4.6, A.2.2.4.6				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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			
	px_MCVideo_PublicServiceId_A			MCVIDEO
	px_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

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	tsc_MCPTT_PublicServiceId_A	The public service identity identifying the participating MCPTT function serving the MCPTT user		
	px_MCVideo_PublicServiceId_A	The public service identity identifying the participating MCVideo function serving the MCVideo user		MCVIDEO
	px_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			MO_CALL
	URIs of the Record-Route header sent to the UE in the INVITE			MT_CALL

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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_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.		
	"+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
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) 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
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]	

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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"			
	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"			
	"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			
Accept-Contact			RFC 3841 [29]	
ac-value[1]				
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.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"			
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata.sds"			MCDATA
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

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
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		
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		
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		
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		
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		**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			
	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				

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-Type	"application/vnd.3gpp.mcptt-info+xml"			
	"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	
	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			
	As described in Table 5.5.3.3.1-2			MCVIDEO
	As described in Table 5.5.3.3.1-3			MCDATA
MIME body part		**Location info**		(EMERGENCY-CALL AND ALERT_IND) OR LOCATION-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.		
	"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	

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-part-body	Location-info as described in Table 5.5.3.4.1-1		TS 24.379 [9] clause F.3	
	Location-info as described in Table 5.5.3.4.1-2		TS 24.281 [86] clause F.3	MCVIDEO
MIME body part		**MIKEY message**		MCD_1to1
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		**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
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 ("callee")		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"			
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		
	px_MCVideo_PublicServiceId_A	SIP URI of the calling UE		MCVIDEO
	px_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			
Replaces			RFC 3891 [117] TS 24.379 [9] clause 6.3.2.2	PRE-ESTABLISHED
callid	callid of the targeted pre-established session			
replaces-params				
from-tag	to-tag of the targeted pre-established session			
to-tag	from-tag of the targeted pre-established session			
CSeq			RFC 3261 [22]	
value	Value assigned by 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**
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"			
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_PublicServiceId_A			
	px_MCVideo_PublicServiceId_A			MCVIDEO
	px_MCData_PublicServiceId_A			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	

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"	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
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	
	"+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) service.	RFC 3840 [33] clause 9	MCDATA
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"			

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	"application/vnd.3gpp.mcvideo-info+xml"			MCVIDEO
	"application/vnd.3gpp.mcdata-info+xml"			MCDATA
Accept-Contact			RFC 3841 [29]	
ac-value[1]				
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.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"			
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata.sds"			MCDATA
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"			
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		
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		
r-value				IMMPERIL-CALL

Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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		
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		
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]	
	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"			
	"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			
	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				

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-Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			
	"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	
	Location-info as described in Table 5.5.3.4.2-2		TS 24.281 [86] clause F.3	MCVIDEO
MIME body part		**MIKEY message**		MCD_1to1
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		**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
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

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	tsc_MCPTT_PublicServiceId_A	The public service identity identifying the originating participating MCPTT function serving the MCPTT user		
	px_MCVideo_PublicServiceId_A	The public service identity identifying the originating participating MCVideo function serving the MCVideo user		MCVIDEO
	px_MCData_PublicServiceId_A	The public service identity identifying the originating participating MCData function serving the MCData user		MCDATA
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		The URI of the SS		
	px_MCVideo_PublicServiceId_A	The URI of the SS		MCVIDEO
	px_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"			
	"+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"			
P-Preferred-Service			RFC 6050 [31]	
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			
	"urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
	"urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"			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**		
MIME-part-headers				
MIME-Content-Type	"application/vnd.3gpp.mcptt-info+xml"			
	"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	
	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"			
	"application/vnd.3gpp.mcvideo-affiliation-command+xml"			

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	
	MCVideo-Affiliation-Command as described in Table 5.5.3.7-2		TS 24.281 [86] clause F.4	MCVIDEO
MIME body part		**Resource lists**	RFC 5366 [35]	RESOURCE_LISTS OR MCD_1to1
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			
	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
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.		
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			
MIME body part		**MIKEY message**		MCD_1to1
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		**SDS SIGNALLING PAYLOAD**		MCDATA
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcdata-signalling"			
MIME-part-body	As described in Table 5.5.3.8.1-1		TS 24.282 [87]	
MIME body part		**DATA PAYLOAD**		MCDATA
MIME-part-headers				
Content-Type	application/vnd.3gpp.mcdata-payload			
MIME-part-body	As described in Table 5.5.3.9-1		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
MCD_1to1	A one-to-one MCData call
RESOURCE_LISTS	Resource lists is to be sent from the UE (MCPTT client)
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			
	px_MCVideo_PublicServiceId_A			MCVIDEO

Derivation Path: TS 24.229 [16], clause A.2.1.4.7a, A.2.2.4.7a				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	px_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]	
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		

Derivation Path: TS 24.229 [16], clause A.2.1.4.7a, A.2.2.4.7a				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
P-Asserted-Service			RFC 6050 [31]	MCDATA
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcdata.sds"			
Accept-Contact			RFC 3841 [29]	
ac-value[1]				
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.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"			
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata.sds"			MCDATA
req-param	"require"			
explicit-param	"explicit"			
P-Asserted-Identity			RFC 3325 [32]	MCDATA
name-addr	px_MCData_ID_User_B	The public user identity of the originating MCData User		
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"			
	"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	
	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
MIME body part		**Affiliation-Command**		AFFILIATION
MIME-part-headers				

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-Content-Type	"application/vnd.3gpp.mcptt-affiliation-command+xml"			
	"application/vnd.3gpp.mcvideo-affiliation-command+xml"			MCVIDEO
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	
	MCVideo-Affiliation-Command as described in Table 5.5.3.7-2		TS 24.281 [86] clause F.4	MCVIDEO
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			
	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
MIME-part-headers				
MIME-Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			
	"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	
	Location-info as described in Table 5.5.3.4.2-2		TS 24.281 [86] clause F.3	MCVIDEO
MIME body part		**SDS SIGNALLING PAYLOAD**		MCDATA
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcdata-signalling"			
MIME-part-body	As described in Table 5.5.3.8.2-1		TS 24.282 [87]	
MIME body part		**DATA PAYLOAD**		MCDATA
MIME-part-headers				

Derivation Path: TS 24.229 [16], clause A.2.1.4.7a, A.2.2.4.7a				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type	application/vnd.3gpp.mcdata-payload			
MIME-part-body	As described in Table 5.5.3.9-2		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	Resource lists is to be sent to the UE (MCPTT client)
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	tsc_MCPTT_PublicServiceId_A			
	px_MCVideo_PublicServiceId_A			MCVIDEO
	px_MCData_PublicServiceId_A			MCData
	"sip:" & tsc_MCX_CMS_Hostname			CONFIG
	"sip:" & tsc_MCX_GMS_Hostname			GROUPCONFIG
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 5.5.3.5-1		TS 24.379 [9] clause 9.3.1	
	PIDF as described in Table 5.5.3.5-2		TS 24.281 [86] clause 8.3.1	MCVIDEO
	PIDF as described in Table 5.5.3.5-3		TS 24.282 [87] clause 8.4.1	MCDATA
MIME body part		xcap-diff		CONFIG, GROUPCONFIG
MIME-part-headers				

Derivation Path: TS 24.229 [16] clause A.2.1.4.8, A2.2.4.8				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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	
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			GROUPCONFIG
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 5.5.3.11-1			
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			
	px_MCVideo_PublicServiceId_A			MCVIDEO
	px_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

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 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

Derivation Path: TS 24.229 [16] clause A.2.1.4.10A, A.2.2.4.10A				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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		
	px_MCVideo_PublicServiceId_A	The public service identity identifying the originating participating MCVideo function serving the MCVideo user		MCVIDEO
	px_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"			CONFIG OR 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	
	"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"			
	"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	
	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		TS 24.379 [9] clause 9.3.1	
	PIDF as described in Table 5.5.3.5-2		TS 24.281 [86] clause 8.3.1	MCVIDEO
	PIDF as described in Table 5.5.3.5-3		TS 24.282 [87] clause 8.3.1	MCDATA
MIME body part		**MIKEY**		CONFIG
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**		CONFIG OR 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.		
	"+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

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"			
	"urn:urn-7:3gpp-service.ims.icsi.mcvideo"			MCVIDEO
	"urn:urn-7:3gpp-service.ims.icsi.mcdata"			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	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	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	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	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			
	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"			
	"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	
	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

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**
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"			
	"+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"			
	"+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	
	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”			
	“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	
	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

Derivation Path: TS 24.229 [16] clause A.2.1.4.12, A.2.2.4.12				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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"			

	"+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"			
	"+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"			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]	CONFIG
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]	CONFIG
MIME body part		**MCPTT/MCVideo/MCData Info**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-info+xml"			
	"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	
	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_PublicServiceId_A	The public service identity identifying the originating participating MCPTT function serving the MCPTT user		
	px_MCVideo_PublicServiceId_A	The public service identity identifying the originating participating MCVideo function serving the MCVideo user		MCVIDEO
	px_MCData_PublicServiceId_A	The public service identity identifying the originating participating MCData function serving the MCData user		MCDATA
	"sip:" & tsc_MCX_CMS_Hostname	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
	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	GROUPCONFIG
	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_SUBSCRIBE
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_SUBSCRIBE
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

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.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

Derivation Path: TS 24.229 [16] clause A.2.1.4.13, A.2.2.4.13				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
feature-param	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.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
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
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"			
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

Derivation Path: TS 24.229 [16] clause A.2.1.4.13, A.2.2.4.13				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	"poc-settings"			MCDATA, 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"			
	"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**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-info+xml"			
	"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	
	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**		PRESENCE-EVENT
MIME-part-headers				
Content-Type	"application/simple-filter+xml"			
MIME-part-body	SIMPLE-FILTER as described in Table 5.5.3.6-1		TS 24.379 [9] clause 9.3.2	

Derivation Path: TS 24.229 [16] clause A.2.1.4.13, A.2.2.4.13				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	SIMPLE-FILTER as described in Table 5.5.3.6-2		TS 24.281 [86] clause 8.3.2	MCVIDEO
	SIMPLE-FILTER as described in Table 5.5.3.6-3		TS 24.282 [87] clause 8.4.2	MCDATA
MIME body part		**Resource-lists**		CONFIG, GROUPCONFIG
MIME-part-headers				
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 5.5.3.3.1-1			
	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		**MIKEY**	RFC 3830 [24]	CONFIG, GROUPCONFIG
MIME-part-headers				
Content-Type	"application/mikey"			
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

	Contact header with the same Contact URI and the same mandatory feature parameters as in the response for the INVITE creating the dialog			MT_CALL
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"			
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata.sds"			MCDATA
feature-param	"+g.3gpp.icsi-ref= urn:urn-7:3gpp-service.ims.icsi.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
feature-param	"audio"			MCPTT OR MCVideo
feature-param	"video"			MCVIDEO
feature-param	"text"			MCDATA
feature-param	"isfocus"			
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	Public user id of the callee (px_IMS_CalleeContact Uri)	Callee contact Uri		
port	not present			
feature-param	"+g.3gpp.mcptt"			
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata.sds"			MCDATA
feature-param	"+g.3gpp.icsi-ref= urn:urn-7:3gpp-service.ims.icsi.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
feature-param	"audio"			MCPTT OR MCVIDEO
feature-param	"video"	This feature tag indicates that the device supports video as a streaming media type.		MCVIDEO

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
feature-param	"text"	This feature tag indicates that the device supports text as a streaming media type.		MCDATA
feature-param	"isfocus"			
Supported				
option-tag	"norefersub"			
Rseq			RFC 3262 [97]	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			
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"			
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata.sds"			MCDATA
feature-param	"+g.3gpp.icsi-ref= urn:urn-7:3gpp-service.ims.icsi.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
feature-param	"audio"			MCPTT OR MCVideo
feature-param	"video"			MCVIDEO
feature-param	"text"			MCDATA
feature-param	"isfocus"			
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]	

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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	Public user id of the callee (px_IMS_CalleeContact Uri)	Callee contact Uri		
port	not present			
feature-param	"+g.3gpp.mcptt"			
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata.sds"			MCDATA
feature-param	"+g.3gpp.icsi-ref= urn:urn-7:3gpp-service.ims.icsi.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
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	"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_PublicServiceId_A			
	px_MCVideo_PublicServiceId_A			MCVIDEO
	px_MCData_PublicServiceId_A			MCDATA
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"			
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata.sds"			MCDATA
feature-param	"+g.3gpp.icsi-ref= urn:urn- 7:3gpp-service.ims.icsi.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
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
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"			

Derivation Path: RFC 3261 [22]				
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		
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			
	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	FFS		MCDATA
MIME body part		**MCPTT/MCVideo/MCData Info**		
MIME-part-header				
MIME-Content-Type	"application/vnd.3gpp.mcptt-info+xml"			
	"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	
	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]	
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

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 (px_MCPTT_PCSCF_A_URI)		
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"			
	"+g.3gpp.mcvideo"			MCVIDEO
	"+g.3gpp.mcdata.sds"			MCDATA
expires	"600000"			

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Contact				SUBSCRIBE-RSP
addr-spec				
user-info and host	tsc_MCPTT_PublicServiceId_A			
	px_MCVideo_PublicServiceId_A			MCVIDEO
	px_MCData_PublicServiceId_A			MCDATA
	"sip:" & tsc_MCX_CMS_Hostname			CONFIG
	"sip:" & tsc_MCX_GMS_Hostname			GROUPCONFIG
port	not present			
Contact				INVITE-RSP
addr-spec				
user-info and host	tsc_MCPTT_PublicServiceId_A			
	px_MCVideo_PublicServiceId_A			MCVIDEO
	px_MCData_PublicServiceId_A			MCDATA
port	not present			
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"			
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
refer-sub-value	“false”			
P-Associated-URI			RFC 3261 [22]	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			

Derivation Path: RFC 3261 [22]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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			
	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	FFS		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]	"110"			
warn-agent[1]	any value			
warn-text[1]	"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
SDP_ANSWER	SDP message is an Answer
FIRST_SDP_FROM_UE	First SDP message sent by the UE within the session
FIRST_SDP_FROM_SS	First SDP message sent by the SS within the 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_MEDIACONTROL	SDP message shall not contain a media description for media control (e.g. in case on-demand private call without floor control)
WITHOUT_SECURITY	In case of private call: SDP message shall not contain any "a=key-mgmt" attribute for end-to-end security

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		
bwtype	"AS"	bwtype:bandwidth		
bandwidth	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)		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		RFC 4567 [44]	
Session attribute	optional (NOTE 3)	a=line attribute=”ice-lite”	RFC 5245 [115]	PRE_ESTABLISHED_SESSION
ice-lite				
Media description[1]		**Media description for audio**		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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		
bwtype	"AS"	bwtype:bandwidth		
bandwidth	any allowed value		TS 26.114 [64] Table K.6	
bwtype	"RS"		RFC 3556 [113]	
bandwidth	any value if present			
bwtype	"RR"		RFC 3556 [113]	
bandwidth	any value if present			
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		Parameter 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_ESTABLISHED_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_ESTABLISHED_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		PRIVATE-CALL AND SDP_OFFER AND NOT WITHOUT_SECURITY
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		RFC 4567 [44]	
Media description[2]		Media description for media control		NOT WITHOUT _MEDIAC ONTROL
media description		m= line media = application SDP media-level section for a media-floor control entity (NOTE 2)		
media	"application"			
port	any allowed value	The port for the media-floor 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_OFFER, INITIAL_SDP_OFFER
mc_queueing	optional	Parameter has no value	TS 24.380 [10] cl. 12.1.2.3	
mc_priority	any allowed value	Any integer value in the range of 1..255	TS 24.380 [10] cl. 12.1.2.3	
mc_granted	not present			
	present	Parameter has no value	TS 24.380 [10] cl. 12.1.2.3	INITIAL_SDP_OFFER
mc_implicit_request	not present			
	present	Parameter has no value	TS 24.380 [10] cl. 12.1.2.3	IMPLICIT_GRANT_REQUESTED
format specific parameters				SDP_ANSWER
mc_queueing	optional	Parameter has no value	TS 24.380 [10] cl. 12.1.2.3	
mc_priority	same value as in the offer		TS 24.380 [10] cl. 12.1.2.3	
mc_granted	not present		TS 24.380 [10] cl. 12.1.2.3	
mc_implicit_request	not present		TS 24.380 [10] cl. 12.1.2.3	
mc_ssrc	not present		TS 24.380 [10] cl. 12.1.2.3	

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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"			

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	px_ MCVideo _User_A_ID	Username of client		
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"			

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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		
bwtype	"AS"	bwtype:bandwidth		
bandwidth	any allowed value		TS 26.114 [64] Table K.6	
Time description				
Timing		t= line		
start-time	"0"			
stop-time	"0"			
Media description[1]s		**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		
bwtype	"AS"	bwtype:bandwidth		
bandwidth	any allowed value		TS 26.114 [64] Table K.6	
bwtype	"RS"		RFC 3556 [113]	
bandwidth	any value if present			
bwtype	"RR"		RFC 3556 [113]	
bandwidth	any value if present			
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"			

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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		
media attribute	optional	a= line attribute =sendrecv Indicates send and receive mode being activated		
sendrecv		Parameter has no value		
media attribute		a= line attribute = key-mgmt		PRIVATE-CALL
key-mgmt			TS 24.281 [86] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2A	Use condition MCVIDEO	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	"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.		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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			
Bandwidth		b= line		
bwtype	"AS"	bwtype:bandwidth		
bandwidth	any allowed value		TS 26.114 [64] Table K.6	
bwtype	"RS"		RFC 3556 [113]	
bandwidth	any value if present			
bwtype	"RR"		RFC 3556 [113]	
bandwidth	any value if present			
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 = key-mgmt		PRIVATE-CALL
key-mgmt			TS 24.281 [86] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2A	Use condition MCVIDEO	RFC 4567 [44]	
Media description[3]		Media description for media control		
media description		m= line media = application SDP media-level section for a media-floor control entity		
media	"application"		3GPP TS 24.581 [88] clause 12	
port	any allowed value	The port for the media-floor control entity		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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	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			3GPP TS 24.581 [88] clause 12, clause 14	
format	"MCVideo"			
format specific parameters				SDP_OFFER, INITIAL_SDP_OFFER
mc_queueing	optional	Parameter has no value. Shall include the "mc_queueing" fmtp attribute in SDP offers when queueing of Transmission request is supported.	3GPP 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.	3GPP TS 24.581 [88] clause 12, clause 14	

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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.	3GPP TS 24.581 [88] clause 12, clause 14	
mc_granted	not present			
	present	Parameter has no value	3GPP TS 24.581 [88] clause 12, clause 14	INITIAL_SDP_OFFER
mc_implicit_request	not present			
	present	Parameter has no value	3GPP TS 24.581 [88] clause 12, clause 14	IMPLICIT_GRANT_REQUESTED
format specific parameters				SDP_ANSWER
mc_queueing	optional	Parameter has no value	3GPP TS 24.581 [88] clause 12, clause 14	
mc_priority	same value as in the offer		3GPP 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.	3GPP TS 24.581 [88] clause 12, clause 14	
mc_granted	not present		3GPP TS 24.581 [88] clause 12, clause 14	
mc_implicit_request	not present		3GPP TS 24.581 [88] clause 12, clause 14	

- 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		o= line		
username	px_MCDATA_ID_User_A	Username of client		
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		
Session Information	any allowed value	i=<session description> The "i=" field is intended to provide a free-form human-readable description of the session or the purpose of a media stream. It is not suitable for parsing by automata.		
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		
bwtype	"AS:"	bwtype:bandwidth		
bandwidth	any allowed value		TS 26.114 [64] Table K.6	
Time description				
Timing		t= line		
start-time	"0"			
stop-time	"0"			
Media description[1]		**Media description for data**		
media description		m= line media = message	RFC 4867 [59] TS 24.282 [31]	
media	"message"			
port	any allowed value	The transport port to which the media stream is sent		
proto	"TCP/MSRP "			
fmt	“*”			
media title	"message"	i= line		
Connection Data	present if session description does not contain a c=line; optional otherwise	c= line		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address"			
connection-address	IP address of the UE			
media attribute		a= line attribute = sendonly		
sendonly		No parameters associated with this line		
media attribute		a= line attribute = path		
path	px_MSRP_URI_A_ID	attribute containing its own MSRP URI. An example: msrp://mcdata.example.com:7654/abcde1; tcp	TS 24.282 [31]	
media attribute		a= line attribute = accept-types		
accept-types	"application/vnd.3gpp.mcdata-signalling application/vnd.3gpp.mcdata-payload"			
media attribute		a= line attribute = setup		
role	“actpass”			
media attribute		a= line attribute = key-mgmt		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	Use condition MCDATA	RFC 4567 [44]	

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	"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" 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		
bwtype	"AS"	bwtype:bandwidth		
bandwidth	"38"	kilobits per second; Maximum AMR-WB at 23.85 kbps but limit to 12.65 kbps plus overhead	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_ESTABLISHED_SESSION
ice-lite				
Media description[1]		**Media desciption 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	"speech"	i= line		
Connection Data		c= line		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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		
bwtype	"AS"	bwtype:bandwidth		
bandwidth	38		TS 26.114 [64] Table K.6	
bwtype	"RS"		RFC 3556 [113]	
bandwidth	0			
bwtype	"RR"		RFC 3556 [113]	
bandwidth	2000			
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		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		RFC 4567 [44]	
media attribute		a=line attribute=”candidate”	RFC 5245 [115]	PRE_ESTABLISHED_SESSION
candidate		candidate for RTP		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
foundation	1234	arbitrarily selected		
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 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_ESTABLISHED_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 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_MEDIACONTROL
media description		m= line media = application SDP media-level section for a media-floor 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-floor control entity		
proto	"udp"			
fmt	"MCPTT"			
Connection Data		c= line		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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"			
format specific parameters				SDP_OFFER
mc_queueing	Present	Parameter has no value	TS 24.380 [10] cl. 12.1.2.3	
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] cl. 12.1.2.3 and cl. 143.3	
mc_granted	not present		TS 24.380 [10] cl. 12.1.2.3	
mc_implicit_request	not present		TS 24.380 [10] cl. 12.1.2.3	
format specific parameters				SDP_ANSWER
mc_queueing	present if included in the offer	Parameter has no value	TS 24.380 [10] cl. 12.1.2.3	
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] cl. 12.1.2.3 and cl. 14.3.3	
mc_granted	not present		TS 24.380 [10] cl. 12.1.2.3	
	present	Parameter has no value	TS 24.380 [10] cl. 12.1.2.3	IMPLICIT_FLOOR_GRANTED
mc_implicit_request	not present		TS 24.380 [10] cl. 12.1.2.3	
	present	Parameter has no value	TS 24.380 [10] cl. 12.1.2.3	IMPLICIT_GRANT_REQUESTED
mc_ssrc	not present		TS 24.380 [10] cl. 12.1.2.3	

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	same value as in the offer if provided in the offer and there is no collision with the value used by the SS; otherwise value assigned by the SS		TS 24.380 [10] cl. 12.1.2.3	IMPLICIT_GRANT_REQUESTED
media attribute		a=line attribute=”candidate”	RFC 5245 [115]	PRE_ESTABLISHED_SESSION
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

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	px_MCVideo_ID_User_B	Username of client sending message		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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" 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		
Bandwidth		b= line		
bwtype	"AS:"	bwtype:bandwidth		
bandwidth	"38"	kilobits per second; Maximum AMR-WB at 23.85 kbps but limit to 12.65 kbps plus overhead	TS 26.114 [64] Table K.6	
Time description				
Timing		t= line		
start-time	"0"			
stop-time	"0"			
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/AVP"			
fmt	"99"	RTP/AVP payload type for AMR-WB is dynamic		
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			
media attribute		a= line attribute = rtpmap		
rtpmap	"rtpmap"			
payload type	"99"			
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				
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	RFC 4867 [59] clause 8.2	

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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		PRIVATE-CALL
key-mgmt			TS 24.281 [86] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2	Use condition MCVIDEO	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	port number of the audio stream incremented by 2 (resulting in even integer)	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" or "IP6" depending on IP address			
connection-address	IP address of the SS			
media attribute		a= line attribute = rtpmap		
rtpmap	"rtpmap"			
payload type	""			
encoding name	"H.264"			

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
clock rate			RFC 4867 [59] clause 8.3	
encoding parameter	"" if present	Channel number		
media attribute		a= line attribute = key-mgmt		PRIVATE-CALL
key-mgmt			TS 24.281 [86] clause 6.2.1	
mikey	MIKEY-SAKKE I_MESSAGE as specified in Table 5.5.9.1-2	Use condition MCVIDEO	RFC 4567 [44]	
Media description[3]		Media description for media control		
media description		m= line media = application SDP media-level section for a media-floor 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-floor 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_OFFER
mc_queueing	Present	Parameter has no value	3GPP TS 24.581 [88] clause 12, clause 14	
mc_priority	"5"	Any integer value in the range of 1..255	3GPP TS 24.581 [88] clause 12, clause 14	
mc_granted	not present	Parameter has no value	3GPP TS 24.581 [88] clause 12, clause 14	
mc_implicit_request	Present	Parameter has no value	3GPP TS 24.581 [88] clause 12, clause 14	
mc_reception_priority"	not present		3GPP TS 24.581 [88] clause 12, clause 14	
format specific parameters				SDP_ANSWER

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mc_queueing	Present	Parameter has no value	3GPP TS 24.581 [88] clause 12, clause 14	
mc_priority	"5"	Any integer value in the range of 1..255	3GPP TS 24.581 [88] clause 12, clause 14	
mc_granted	not present			
	present	Parameter has no value	3GPP TS 24.581 [88] clause 12, clause 14	IMPLICIT_FLOOR_GRANTED
mc_implicit_request	Present	Parameter has no value		
			3GPP TS 24.581 [88] clause 12, clause 14	IMPLICIT_GRANT_REQUESTED
mc_reception_priority"	not present or "10"	No present if not present in the SDP offer. If present in the SDP offer, then the arbitrarily chosen value of "10 should be used	3GPP TS 24.581 [88] clause 12, clause 14	

- 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		o= line		
username	px_MCDATA_ID_User_B	Username of client		
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" or "IP6" depending on IP address			
unicast-address	IP address of the SS			
Session Name	"-"	s= line		
Session Information	“message”	i=<session description> The "i=" field is intended to provide a free-form human-readable description of the session or the purpose of a media stream. It is not suitable for parsing by automata.		
Connection Data	not required if included in all media	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" or "IP6" depending on IP address			
connection-address	IP address of the SS			
Bandwidth		b= line		
bwtype	"AS:"	bwtype:bandwidth		
bandwidth	"38"	kilobits per second; Maximum AMR-WB at 23.85 kbps but limit to 12.65 kbps plus overhead	TS 26.114 [64] Table K.6	
Time description				
Timing		t= line		
start-time	"0"			
stop-time	"0"			
Media description[1]		**Media description for data**		
media description		m= line media = message	RFC 4867 [59] TS 24.282 [31]	
media	"message"			
port	"49152"	The transport port to which the media stream is sent		
proto	"TCP/MSRP "			
fmt	“*”			
media title	"message"	i= line		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Connection Data		c= line Included if the media plane for audio uses a different IP address than other media described in the SDP		
nettype	"IN"			
Addrtype	"IP4" or "IP6" depending on IP address			
connection-address	IP address of the SS			
media attribute		a= line attribute = recvonly		
recvonly		No parameters associated with this line		
media attribute		a= line attribute = path		
path	px_MSRP_URI_SS_ID	attribute containing its own MSRP URI. An example: msrp://mcdata.example.com:7654/abcde1; tcp	TS 24.282 [31]	
media attribute		a= line attribute = accept-types		
accept-types	"application/vnd.3gpp.mcdata-signalling application/vnd.3gpp.mcdata-payload"			
media attribute		a= line attribute = setup		
role	“actpass”			
media attribute		a= line attribute = key-mgmt		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	Use condition MCDATA	RFC 4567 [44]	

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		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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		
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		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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			3GPP TS 24.581 [88] clause 12, clause 14	
format	"MCVideo"			
format specific parameters				
mc_queueing	optional	Parameter has no value. Shall include the "mc_queueing" fmtp attribute in SDP offers when queueing of Transmission request is supported.	3GPP TS 24.581 [88] clause 12, clause 14	

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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.	3GPP 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.	3GPP 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.	3GPP 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 3GPP 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.	3GPP TS 24.581 [88] clause 12, clause 14	
media attribute		a= line attribute = key-mgmt		PRIVATE-CALL
key-mgmt		Key Management attribute field in the media and session level.	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 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"		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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		
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		

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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			3GPP TS 24.581 [88] clause 12, clause 14	
format	"MCVideo"			
format specific parameters				
mc_queueing	optional	Parameter has no value. Shall include the "mc_queueing" fmtp attribute in SDP offers when queueing of Transmission request is supported.	3GPP TS 24.581 [88] clause 12, clause 14	

Derivation Path: RFC 4566 [27]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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.	3GPP 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.	3GPP 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.	3GPP 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 3GPP 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.	3GPP TS 24.581 [88] clause 12, clause 14	
media attribute		a= line attribute = key-mgmt		PRIVATE-CALL
key-mgmt		Key Management attribute field in the media and session level.	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 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, GROUPCONFIG
session-type	not present			
	"prearranged"			GROUP-CALL AND INVITE_REFER
	"private"			PRIVATE-CALL AND INVITE_REFER
	“chat”			CHAT-GROUP-CALL AND INVITE_REFER
	"first-to-answer"			FIRST-TO-ANSWER AND INVITE_REFER
mcptt-request-uri	not present			
	Encrypted (NOTE 2) <mcptt-request-uri> with mcpttURI set to px_MCPTT_Group_A_ID	The URI of the group		(GROUP-CALL OR CHAT-GROUP-CALL) AND INVITE_REFER
	not present or encrypted (NOTE 2) <mcptt-request-uri> with mcpttURI set to px_MCPTT_User_B_ID	The URI of the invited MCPTT Client		PRIVATE-CALL AND INVITE_REFER
	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, GROUPCONFIG, 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"			EMERGENCY-CALL AND INVITE_REFER
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_EmergencyIndWithAlertInd			EMERGENCY-CALL AND INVITE_REFER
imminentperil-ind	not present or encrypted (NOTE 2) <imminentperil-ind> with mcpttBoolean set to "false"			
	Encrypted (NOTE 2) <emergency-ind> with mcpttBoolean set to "true"			IMMPERIL-CALL AND INVITE_REFER
broadcast-ind	not present or “false”			
mc-org"	not present			
floor-state	not present			
associated-group-id	not present			
	px_MCPTT_Group_A_ID 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 or any allowed value		TS 24.379 [9], clause F.1.3	
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
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) <emergency-ind> with mcvideoBoolean set to "false"			
	encrypted (NOTE 2) <emergency-ind> with mcvideoBoolean set to true			EMERGENCY-CALL AND INVITE_REFER
imminentperil-ind	not present or encrypted (NOTE 2) <emergency-ind> with mcvideoBoolean set to "false"			
	encrypted (NOTE 2) <emergency-ind> with mcvideoBoolean set to true			IMMPERIL-CALL AND INVITE-REFER
broadcast-ind	not present or “false”			
mc-org"	not present			
transmission-state	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-CALLOR 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 or any allowed value		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

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			
request-type	"one-to-one-sds"			MCD_1to1
request-type	“group-sds”			MCD_grp
mcdata-request-uri	px_MCData_Group_A			MCD_grp
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	px_MCData_Client_A_ID			MCD_grp
mcdata-controller-psi	not present			

Condition	**Explanation**
MCD_1to1	A one-to-one MCData call
MCD_grp	A goup MCData call
For further conditions see table 5.5.1-1	

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-CALLOR 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			
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	"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	not present or 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-CALLOR CHAT-GROUP-CALL
required	not present			
emergency-ind	not present or 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			
mc-org"	not present			
floor-state	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	"one-to-one-sds"			MCD_1to1
request-type	“group-sds”			MCD_grp
mcdata-request-uri	px_MCData_Group_A			MCD_grp
mcdata-calling-user-id	px_MCData_ID_User_B			
mcdata-called-party-id	px_MCData_ID_User_A			
mcdata-calling-group-id	not present			
alert-ind	not present			
originated-by	not present			
mcdata-client-id	px_MCData_Client_B_ID			
mcdata-controller-psi	not present			

Condition	**Explanation**
MCD_1to1	A one-to-one MCData call
MCD_grp	A goup MCData call
For further conditions see table 5.5.1-1	

5.5.3.3 Resource-lists

5.5.3.3.1 Resource-lists from the UE

- MCPTT

Table 5.5.3.3.1-1: Resource-lists from the UE for MCPTT

Derivation Path: RFC 5366 [35] / RFC 4826 [83]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
resource-lists	encrypted (NOTE 4)			
list[1]	encrypted (NOTE 4)			
name attribute	Not present			
display-name	Not present			
entry[1]	NOTE 4,5			
uri attribute	px_MCPTT_ID_User_B	The MCPTT ID of the invited user		
	px_MCPTT_ID_User_B	the MCPTT ID contained in the <mcptt-calling-user-id> element in the application/ vnd.3gpp.mcptt-info+xml MIME body of the received SIP MESSAGE request		MSG_RSP
	SIP-URI with px_MCPTT_Group_A_ID (NOTE 8) extended with SIP URI header fields as specified for the SIP REFER message	SIP-URI: prearranged MCPTT group identit 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 8) 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 4,5			FIRST-TO-ANSWER
uri attribute	px_MCPTT_ID_User_C			
display-name	not present			
entry[2]	NOTE 4,5			PRE-ESTABLISH AND FIRST-TO-ANSWER
uri attribute	SIP-URI with px_MCPTT_ID_User_C (NOTE 8) 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			
resource-lists	encrypted (NOTE 4)		TS 24.481 [11] TS 24.484 [14]	CONFIG OR GROUPCONFIG
list[1]	encrypted (NOTE 4)			
name attribute	not present			
display-name	Not present			
entry[1]	NOTE 4, 5		TS 24.484 [14]	CONFIG
uri attribute	AUID1 & “/users/” & XUID & “/” & MCSUEID & “/”	UE Configuration document (NOTE 1a, 2, 3)		

	“AUID1 & “/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 4, 5		TS 24.484 [14]	CONFIG
uri attribute	AUID2 & “/users/” & XUID & “/”	UE User Profile document (NOTE 1b, 2)		
display-name	Not present			
entry[3]	NOTE 4, 5		TS 24.484 [14]	CONFIG
uri attribute	AUID3 & “/global/service-config.xml”	UE Service Configuration document (NOTE 1c)		
display-name	Not present			
entry[1]	NOTE 4, 5		TS 24.484 [14]	GROUPCONFIG
uri attribute	“org.openmobilealliance.groups/global/byGroupID/” & px_MCPTT_Group_A_ID	UE Group Configuration document		
display-name	Not present			
entry[1]	NOTE 4, 5		TS 24.484 [14]	GROUPCONFIG_B
uri attribute	“org.openmobilealliance.groups/global/byGroupID/” & px_MCPTT_Group_B_ID	UE Group Configuration document		
display-name	Not present			
entry[1]	NOTE 4, 5		TS 24.484 [14]	GROUPCONFIG_C
uri attribute	“org.openmobilealliance.groups/global/byGroupID/” & px_MCPTT_Group_C_ID	UE Group Configuration document		
display-name	Not present			
entry[1]	NOTE 4, 5		TS 24.484 [14]	GROUPCONFIG_T
uri attribute	“org.openmobilealliance.groups/global/byGroupID/” & px_MCPTT_Group_T_ID	UE Group Configuration document		
display-name	Not present			
entry[2]	optional, NOTE 4, 5		TS 24.481 [11]	GROUPCONFIG
uri attribute	Doc-Sel & “~~” & Node-Sel	MCPTT-GKTP document (NOTE 6, 7)		
display-name	Not present			
entry[2]	optional, NOTE 4, 5		TS 24.481 [11]	GROUPCONFIG_B
uri attribute	Doc-Sel_B & “~~” & Node-Sel	MCPTT-GKTP document (NOTE 6, 7)		
display-name	Not present			
entry[2]	optional, NOTE 4, 5		TS 24.481 [11]	GROUPCONFIG_C
uri attribute	Doc-Sel_C & “~~” & Node-Sel	MCPTT-GKTP document (NOTE 6, 7)		

display-name	Not present			
entry[2]	optional, NOTE 4, 5		TS 24.481 [11]	GROUPCONFIG_T
uri attribute	Doc-Sel_T & "~~" & Node-Sel	MCPTT-GKTP document (NOTE 6, 7)		
display-name	Not present			
entry[1]	NOTE 4, 5		TS 24.481 [11]	GROUPKEY
uri attribute	Doc-Sel & "~~" & Node-Sel	MCPTT-GKTP document (NOTE 6, 7)		
display-name	Not present			
entry[1]	NOTE 4, 5		TS 24.481 [11]	GROUPKEY_B
uri attribute	Doc-Sel_B & "~~" & Node-Sel	MCPTT-GKTP document (NOTE 6, 7)		
display-name	Not present			
entry[1]	NOTE 4, 5		TS 24.481 [11]	GROUPKEY_C
uri attribute	Doc-Sel_C & "~~" & Node-Sel	MCPTT-GKTP document (NOTE 6, 7)		
display-name	Not present			
entry[2]	optional, NOTE 4, 5		TS 24.481 [11]	GROUPCONFIG_T
uri attribute	Doc-Sel_T & "~~" & Node-Sel	MCPTT-GKTP document (NOTE 6, 7)		
display-name	Not present			

NOTE 1a: AUID1 = "org.3gpp.mcptt.ue-config"
NOTE 1b: AUID2 = "org.3gpp.mcptt.user-profile"
NOTE 1c: AUID3 = "org.3gpp.mcptt.service-config"
NOTE 2: XUID = "sip:" & px_MCPTT_ID_User_A
NOTE 3: MCSUEID = Instance id of the UE (derived from the IMEI according to 23.003 [69] clause 13.8)
NOTE 4: 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 5: When a resource-lists document contains more than one entry, the entries may be in any order
NOTE 6: Doc-Sel = "org.3gpp.MCPTT-GKTP/global/byGroupID/" & px_MCPTT_Group_A_ID & "/"
Doc-Sel_B="org.3gpp.MCPTT-GKTP/global/byGroupID/" & px_MCPTT_Group_B_ID & "/"
Doc-Sel_C="org.3gpp.MCPTT-GKTP/global/byGroupID/" & px_MCPTT_Group_C_ID & "/"
Doc-Sel_T="org.3gpp.MCPTT-GKTP/global/byGroupID/" & px_MCPTT_Group_T_ID & "/"
NOTE 7: Node-Sel = "/group/list-service/mgktp:GKTPs?xmlns(mgktp=urn:3gpp:ns:mcpttGKTP:1.0)"
NOTE 8: 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 using a pre-established session
MSG_RSP	resource lists IE in SIP MESSAGE in response to a received SIP MESSAGE message
GROUPCONFIG_B	Message content within subscription to GROUP_B documents
GROUPCONFIG_C	Message content within subscription to GROUP_C documents
GROUPCONFIG_T	Message content within subscription to temporary GROUP_T documents
GROUPKEY_B	Message content within subscription to GROUP_B key material retrieval
GROUPKEY_C	Message content within subscription to GROUP_C key material retrieval
GROUPKEY_T	Message content within subscription to temporary GROUP_T key material retrieval
For further conditions see table 5.5.1-1	

- MCVideo

Table 5.5.3.3.1-2: Resource-lists from the UE for MCVideo

Derivation Path: RFC 5366 [35] / RFC 4826 [83]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
resource-lists				PRIVATE-CALL GROUP-CALL EMERGENCY-CALL IMMPERIL-CALL
list[1]				
name attribute	Not present			
display-name	Not present			
entry[1]	NOTE 5			
uri attribute	px_MCVideo_ID_User_B	The MCVideo ID of the invited user		
display-name	Not present			
resource-lists	encrypted (NOTE 4)		TS 24.481 [11] TS 24.484 [14]	CONFIG OR GROUPCONFIG
list[1]	encrypted (NOTE 4)			
name attribute	"uri: mcvideo-op.gov:resource-lists"	Editor's note: to be removed		CONFIG
display-name	Not present			
entry[1]	NOTE 5		TS 24.484 [14]	CONFIG
uri attribute	AUID1 & "/users/" & XUID & "/" & MCSUEID & "/"	UE Configuration document (NOTE 1a, 2, 3)		
	"AUID1 & "/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 5		TS 24.484 [14]	CONFIG
uri attribute	AUID2 & "/users/" & XUID & "/"	UE User Profile document (NOTE 1b, 2)		
display-name	Not present			
entry[3]	NOTE 5		TS 24.484 [14]	CONFIG
uri attribute	AUID3 & "/global/service-config.xml"	UE Service Configuration document (NOTE 1c)		
display-name	Not present			
entry[1]	NOTE 5		TS 24.481 [11]	GROUPCONFIG

uri attribute	"org.openmobilealliance.groups/global/byGroupID/" & px_MCVideo_Group_A_ID	UE Group Configuration document		
display-name	Not present			
entry[2]	optional NOTE 5		TS 24.481 [11]	GROUPCONFIG
uri attribute	Doc-Sel & "~~" & Node-Sel	MCPTT-GKTP document (NOTE 6, 7)		
display-name	Not present			
entry[1]	NOTE 5		TS 24.481 [11]	GROUPKEY
uri attribute	Doc-Sel & "~~" & Node-Sel	MCPTT-GKTP document (NOTE 6, 7)		
display-name	Not present			

NOTE 1a: AUID1 = "org.3gpp.mcvideo.ue-config"
NOTE 1b: AUID2 = "org.3gpp.mcvideo.user-profile"
NOTE 1c: AUID3 = "org.3gpp.mcvideo.service-config"
NOTE 2: XUID = "sip:" & px_MCVideo_ID_User_A
NOTE 3: MCSUEID = Instance id of the UE (derived from the IMEI according to 23.003 [69] clause 13.8)
NOTE 4: 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 5: When a resource-lists document contains more than one entry, the entries may be in any order
NOTE 6: Doc-Sel = “org.3gpp.MCPTT-GKTP/global/byGroupID/” & px_MCVideo_Group_A_ID & "/"
NOTE 7: Node-Sel = "/group/list-service/mgktp:GKTPs?xmlns(mgktp=urn:3gpp:ns:mcpttGKTP:1.0)”

- MCData

Table 5.5.3.3.1-3: Resource-lists from the UE for MCData

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	px_MCData_ID_User_B	The MCData ID of the target MCData user		

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	px_MCVideo_ID_User_A	The MCVideo ID of the invited user		

- MCData

Table 5.5.3.3.2-3: Resource-lists from the SS for MCData

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	px_MCData_ID_User_A	The MCData ID of the invited user		

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> element 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				
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	optional	This is optional depending on the configuration sent by the SS		
NeighbouringEcgi	optional	This is optional depending on the configuration sent by the SS		
MbmsSaId	optional	This is optional depending on the configuration sent by the SS		
MbsfnArea	optional	This is optional depending on the configuration sent by the SS		
CurrentCoordinate	optional	This is optional depending on the configuration sent by the SS		
ReportID	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	"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.		
EmergencyEventType	"GroupCallEmergency"			GROUP-CALL and EMERGENCY-CALL
	"GroupCallImminentPeril"			GROUP-CALL and IMMPERIL-CALL
	"PrivateCallEmergency"			PRIVATE-CALL and EMERGENCY-CALL
	"InitiateEmergencyAlert"			IMMPERIL-CALL

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	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		

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 [1]	"EMERGENCY ALERT"	A randomly chosen string to reflect the trigger of the message.		
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) <longitude> 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>			

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			
p-id	any allowed value or same value as sent in SIP PUBLISH	set to an identifier of a SIP PUBLISH request		AFFILIATION
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

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	"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			
p-id	not present			AFFILIATION
NOTE 1: Encrypted attribute as described in Table 5.5.13.3-1				

5.5.3.6 SIMPLE-FILTER

- MCPTT

Table 5.5.3.6-1: SIMPLE-FILTER for MCPTT

Derivation Path: TS 24.379 [9] clause 9.3.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
filter-set			RFC 4661 [48]	
ns-bindings		TS 24.379 [9] clause 9.3.2.2 requires two separate ns-binding elements	RFC 4661 [48]	
ns-binding urn			RFC 4661 [48]	
prefix	""	Editor's note: according to RFC 4661 the prefix is required nevertheless TS 24.379 says 'does not contain a "prefix" attribute'		
urn	"urn:ietf:params:xml:ns:pidf"			
ns-binding urn			RFC 4661 [48]	
prefix	"mcpttPI10"			
urn	"urn:3gpp:ns:mcpttPresInfo:1.0"			
filter[1]			RFC 4661 [48]	
filter id	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		
domain attribute	Not present	According to TS 24.379		
remove attribute	Not present	'false' per default		
enabled attribute	Not present	'true' per default		
what			RFC 4661 [48]	
include	"//presence/tuple[@id=" & px_MCPTT_Client_A_ID & "]"	contains the value, according to IETF RFC 4661 [48], set to concatenation of the '//presence/tuple[@id="' string, the MCPTT client ID, and the '"]' string	RFC 4661 [48]	
trigger	Not present			

- MCVideo

Table 5.5.3.6-2: SIMPLE-FILTER for MCVideo

Derivation Path: TS 24.281 [86] clause 8.3.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
filter-set	px_MCVideo_Client_A_ID		RFC 4661 [48]	
nc-bindings	px_MCVideo_Client_A_ID		RFC 4661 [48]	
ns-binding urn	"urn:ietf:params:xml:ns:pidf"		RFC 4661 [48]	
ns-binding urn	"urn:3gpp:ns:mcvideoPresInfo:1.0"	TS 24.281 [86] clause 8.3.2.2 requires two separate ns-binding elements	RFC 4661 [48]	
filter id	"123"	The value of the 'id' attribute has to be unique within the <filter-set> element. Does not contain the 'uri' element. Does not contain the 'domain' element.	RFC 4661 [48]	
what			RFC 4661 [48]	
include	//presence/tuple[@id=px_MCVideo_Client_A_ID]	contains the value, according to IETF RFC 4661 [48], set to concatenation of the '//presence/tuple[@id="' string, the MCVideo client ID, and the '"]' string	RFC 4661 [48]	

- MCData

Table 5.5.3.6-3: SIMPLE-FILTER for MCData

Derivation Path: TS 24.282 [87] clause 8.4.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
filter-set	px_MCData_Client_A_ID		RFC 4661 [48]	
nc-bindings	px_MCData_Client_A_ID		RFC 4661 [48]	
ns-binding urn	"urn:ietf:params:xml:ns:pidf"		RFC 4661 [48]	
ns-binding urn	"urn:3gpp:ns:mcdataPresInfo:1.0"	TS 24.282 [87] clause 8.4.2.2 requires two separate ns-binding elements	RFC 4661 [48]	
filter id	"123"	The value of the 'id' attribute has to be unique within the <filter-set> element. Does not contain the 'uri' element. Does not contain the 'domain' element.	RFC 4661 [48]	
what			RFC 4661 [48]	
include	//presence/tuple[@id= px_MCData_Client_A_ID]	contains the value, according to IETF RFC 4661 [48], set to concatenation of the '//presence/tuple[@id="' string, the MCData client ID, and the '"]' string	RFC 4661 [48]	

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 SDS Signaling Payload

5.5.3.8.1 SDS Signaling Payload from the UE

Table 5.5.3.8.1-1: SDS Signaling Payload 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	"01000001"	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	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"	DELIVERY	TS 24.282 [87] clause 15.2.3	

5.5.3.8.2 SDS Signaling Payload from the SS

Table 5.5.3.8.2-1: SDS Signaling Payload 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	"01000001"	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	“00000001000000010000000100000010000000100000001001000000100000001000000001000000010000000100000001000000010000000100000001”	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	“00000001000000010000000100000010000000100000001001000000100000001000000001000000010000000100000001000000010000000100000001”	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"	DELIVERY	TS 24.282 [87] clause 15.2.3	

5.5.3.9 MCData Data Payload

Table 5.5.3.9-1: MCData Data Payload from the UE

Derivation Path: TS 24.282 [87] clause 15.1.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Data payload message identity	"01000011"	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	As described in Table 5.5.3.10-1	MCData Protected Payload Message	TS 33.180 [94]	MCD_1to1
Payload			TS 24.282 [87] clause 15.2.13	MCD_grp
Payload content type	"00000001"	TEXT		
Payload data	any allowed value	The data payload Example: “abcdEFGH”		

Condition	Explanation
MCD_1to1	A one-to-one MCData call
MCD_grp	A goup MCData call
For further conditions see table 5.5.1-1	

Table 5.5.3.9-2: MCData Data Payload from the SS

Derivation Path: TS 24.282 [87] clause 15.1.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Data payload message identity	"01000011"	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	As described in Table 5.5.3.10-2	MCData Protected Payload Message	TS 33.180 [94]	MCD_1to1
Payload			TS 24.282 [87] clause 15.2.13	MCD_grp
Payload content type	"00000001"	TEXT		
Payload data	"Test"	The data payload		

Condition	Explanation
MCD_1to1	A one-to-one MCData call
MCD_grp	A goup MCData call
For further conditions see table 5.5.1-1	

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	"01000011"	Message type – Data 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.		
Algorithm	“DP_AES_128_GCM”	Protection of payloads shall support the following algorithms (cipher suites): DP_AES_128_GCM and DP_AES_256_GCM		
IV	“11011100 10111001 00001000 01010001 01010000 10110011 11001111 00100001 11100010 11110111 11011111 01011011 01010100 00101100 00100101 10100010”	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	Key identifier 128 bits or 256 bits depending on the algorithm For one-to-one communications, DPPK-ID shall be the PCK-ID. For group communications, the DPPK ID shall be the GMK-ID		
Payload		Protected Payload (Ciphertext)		
Payload content type	“00000001”	TEXT		
Payload contents	Any allowed value	Example: “abcdEFGH”		

Table 5.5.3.10-2: MCData Protected Payload Message from the SS

Derivation Path: TS 33.180 [94] clause 8.5.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message Type	"01000011"	Message type – Data 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.		
Algorithm	“DP_AES_128_GCM”	Protection of payloads shall support the following algorithms (cipher suites): DP_AES_128_GCM and DP_AES_256_GCM		
IV	“11011100 10111001 00001000 01010001 01010000 10110011 11001111 00100001 11100010 11110111 11011111 01011011 01010100 00101100 00100101 10100010”	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	Key identifier 128 bits or 256 bits depending on the algorithm For one-to-one communications, DPPK-ID shall be the PCK-ID. For group communications, the DPPK ID shall be the GMK-ID		
Payload		Protected Payload (Ciphertext)		
Payload content type	“00000001”	TEXT		
Payload contents	“abcdEFGH”			

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"			AUTOMATIC
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 5854 [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 & "/mcptt-ue-configuration.xml"	NOTE 1a, 2, 3		
new-etag	arbitrary value			
previous-etag	same as new-etag			
document[2]				
sel attribute	AUID2 & "/users/" & XUID & "/mcptt-user-profile-" & profile-index & ".xml"	NOTE 1b, 2, 4		
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 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

Derivation Path: RFC 5854 [107] clause 4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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/" & px_MCPTT_Group_A_ID			
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	Doc-Sel-PTT & "~~" & Node-Sel	NOTE 2a, 3		MCPTT
sel attribute	Doc-Sel-Video & "~~" & Node-Sel	NOTE 2b, 3		MCVIDEO
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 2a: Doc-Sel-PTT = “org.3gpp.MCPTT-GKTP/global/byGroupID/” & px_MCPTT_Group_A_ID & "/"
NOTE 2b: Doc-Sel-Video = “org.3gpp.MCPTT-GKTP/global/byGroupID/” & px_MCVideo_Group_A_ID & "/"
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 MCDATA FD SIGNALLING PAYLOAD FROM THE UE

5.5.3.13.1 FD SIGNALLING PAYLOAD FROM THE UE

Table 5.5.3.13.1-1: FD Signalling Payload from the UE

Derivation Path: TS 24.282 [87], Table 15.1.3.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
FD signalling payload message identity	"00000010"	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	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	
Payload			TS 24.282 [87] clause 15.2.13	
Length of Payload contents	Length of the payload contents			
Payload content type	"00000100"	FILEURL		
Payload contents	px_MCDATA_FD_FILE_LOC			
Metadata	Any allowed value	Metadata is optional	TS 24.282 [87] clause 15.2.17	
file-selector	Any allowed value			
file-date	Any allowed value			
file-availability	Any allowed value			

5.5.3.13.2 FD SIGNALLING PAYLOAD FROM THE SS

Table 5.5.3.13.2-1: FD Signalling Payload from the SS

Derivation Path: TS 24.282 [87], Table 15.1.3.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
FD signalling payload message identity	“00000010”	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	“00000001000000010000000100000010000000100000001001000000100000001000000001000000010000000100000001000000010000000100000001”	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	“00000001000000010000000100000010000000100000001001000000100000001000000001000000010000000100000001000000010000000100000001”	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	
Payload			TS 24.282 [87] clause 15.2.13	
Length of Payload contents	Length of the payload contents			
Payload content type	“00000100”	FILEURL		
Payload contents	px_MCDATA_FD_FILE_LOC			
Metadata	Not present		TS 24.282 [87] clause 15.2.17	
file-selector	"file-selector:name:"<name of file>":size:"<size of file>":type:"<type of file>":hash:sha-1:58:23:1F:E8:65:3B:BC:F3:71:36:2F:86:D4:71:91:3E:E4:B1:DF:2F"	a concatenation of filename, filesize, filetype and hash. The filesize value is an integer as defined RFC 4566 [27]		
file-date	"file-date:creation:"<DQUOTE date-time the file was created DQUOTE>			
file-availability	"file-availability:"<date-time>	date-time is set to a date and time that the file is available until and is defined in RFC 5322 [109]		

5.5.3.13.3 FD SIGNALLING PAYLOAD USING THE MEDIA PLANE FROM THE UE

Table 5.5.3.13.3-1: FD Signalling Payload Using the Media Plane from the UE

Derivation Path: TS 24.282 [87], Table 15.1.3.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
FD signalling payload message identity	“00000010”	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	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	"0001"	MANDATORY DOWNLOAD	TS 24.282 [87] clause 15.2.16	
Payload	Not present		TS 24.282 [87] clause 15.2.13	
Metadata	Not present		TS 24.282 [87] clause 15.2.17	

5.5.3.13.4 FD SIGNALLING PAYLOAD USING THE MEDIA PLANE FROM THE SS

Table 5.5.3.13.4-1: FD Signalling Payload Using the Media Plane from the SS

Derivation Path: TS 24.282 [87], Table 15.1.3.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
FD signalling payload message identity	“00000010”	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	“000000010000000100 0000010000000100000 0010000000100000001 0000000100000001000 0000100000001000000 0100000001000000010 000000100000001”	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	“000000010000000100 0000010000000100000 0010000000100000001 0000000100000001000 0000100000001000000 0100000001000000010 000000100000001”	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	"0001"	MANDATORY DOWNLOAD	TS 24.282 [87] clause 15.2.16	
Payload	Not present		TS 24.282 [87] clause 15.2.13	
Metadata	Not present		TS 24.282 [87] clause 15.2.17	

5.5.3.14 MCS group key transport payloads (GKTP) document

Table 5.5.3.14-1: group key transport payloads (GKTP) document

Derivation Path: TS 24.481 [11] clause 7.7				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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		

5.5.4 Default HTTP message and other information elements

5.5.4.1 General

The HTTP Messages are specified in RFC 2616 [26]. Wherever another reference apply 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 MCPTT UE authentication
UEINITIALCONFIG	Message/IE sent only as part of an MCPTT UE initial configuration
USERAUTH	Message/IE sent only as part of an MCPTT UE user authentication
UECONFIG	Message/IE sent only as part of an MCPTT UE configuration
UEUSERPROF	Message/IE sent only as part of an MCPTT UE User profile configuration
UESERVCONFIG	Message/IE sent only as part of an MCPTT UE service configuration
GROUPCONFIG	Message/IE sent only as part of an MCPTT group configuration
TEMPGROUP	Message/IE sent only in temporary group creation scenario
TOKEN	Message/IE sent only as part of an MCPTT token exchange
KMSINIT	Message/IE sent only as part of an MCPTT KMS initialisation
KMSKEY	Message/IE sent only as part of an MCPTT KMS key exchange

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/" & XUID & "/" & MCSUEID & "/mcptt-ue-configuration.xml"	points to UE Configuration document (NOTE 1a, 2, 3)	TS 24.484 [14]	UECONFIG
	tsc_MCX_CMSXCAPRootURI & "/" & AUID2 & "/users/" & XUID & "/mcptt-user-profile-" & profile-index & ".xml"	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/" & px_MCPTT_Group_A_ID	points to group configuration document	TS 24.481 [11]	GROUPCONFIG
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
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:	profile-index is the same as in the <user-profile-index> attribute of the corresponding document	

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, USERAUTH
	tsc_MCX_IdMS_userauth_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]	USERAUTH
	tsc_MCX_IdMS_token_UriPath	points to the Token endpoint of the IdM Server	TS 33.180 [94]	TOKEN
	tsc_MCX_KMS_init_UriPath	"KMS Initialize" request according to TS 33.180 [94] D.2.3	TS 33.180 [94]	KMSINIT
	tsc_MCX_KMS_keyprov_UriPath	"KMS KeyProvision" request according to TS 33.180 [94] D.2.4	TS 33.180 [94]	KMSKEY
	tsc_MCX_GMSXCAPRootURI & "/" & "org.openmobilealliance.groups/users/" & px_MCPTT_GroupCreationXUI & "/" & px_MCPTT_Group_T_ID	Points to the temporary group configuration document to be created	TS 24.481[11] clause 6.3.14.2	TEMPGROUP
HTTP-Version	"HTTP/1.1"			
Cache-Control			RFC 2616 [26]	
cache-directive	"no-cache"			
Authorization			RFC 2617 [72]	KMSINIT, KMSKEY, TEMPGROUP
authentication-scheme	“Bearer”		RFC 6750 [104]	
b64token	Access token as assigned to the UE by Token Response		RFC 6750 [104]	
Content-Type				AUTH, USERAUTH, TOKEN
media-type	"application/x-www-form-urlencoded"			
Content-Type		present in case of KMS request security		(KMSINIT OR KMSKEY) AND pc_MCX_KMS_RequestSecurity
media-type	"application/xml"		RFC 7303 [112]	
Content-Type				TEMPGROUP
media-type	"application/vnd.3gpp.GMOP+xml"			
Message-body				AUTH
Authentication Request	As described in Table 5.5.4.10.1-1			

Message-body			HTML 4.01 Specification [105]	USERAUTH
user	px_MCX_User_A_username			
password	px_MCX_User_A_password			
Message-body				TOKEN
Token request	As described in Table 5.5.4.10.3-1			
Message-body		present in case of KMS request security		(KMSINITOR KMSKEY) AND pc_MCX_KMS_RequestSecurity
Signed KMS Request	As described in Table 5.5.4.10.9-1			
Message-body				TEMPGROUP
Temporary Group Creation Document"	As described in Table 5.5.7.1-3			

5.5.4.4 PUT

Table 5.5.4.4-1: HTTP PUT

Derivation Path: RFC 2616 [26]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-line				
Method	"PUT"			
Request-URI	tsc_MCX_GMSXCAPRootURI & "/" & "org.openmobilealliance.groups/users/" & px_MCPTT_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 5.5.7.1-2			
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_MCPTT_GroupCreationXUI & "/" & px_MCPTT_Group_T_ID	Points to the group configuration document	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]	

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"			
Pragma			RFC 2616 [26]	
pragma-directive	"no-cache"			
Content-Length				
value	length of message-body			
Content-Type				
media-type	"application/json;charset=UTF-8"		TS 33.180 [94]	TOKEN
media-type	"application/xml"	Editor's note: Message-Body contains an XML document but there is no media-type specific for "urn:3gpp:ns:mcsecKMSInterface:1.0" ⇒ "application/xml" to be confirmed	TS 33.180 [94]	KMSINIT
media-type	"application/xml"	Editor's note: Message-Body contains an XML document but there is no media-type specific for "urn:3gpp:ns:mcsecKMSInterface:1.0" ⇒ "application/xml" to be confirmed	TS 33.180 [94]	KMSKEY
media-type	"application/vnd.3gpp.mcptt-ue-init-config+xml"		TS 24.484 [14]	UEINITIALCONFIG
media-type	"application/vnd.3gpp.mcptt-ue-config+xml"		TS 24.484 [14]	UECONFIG
media-type	"application/vnd.3gpp.mcptt-user-profile+xml"		TS 24.484 [14]	UEUSERPROF
media-type	"application/vnd.3gpp.mcptt-service-config+xml"		TS 24.484 [14]	UESERVCONFIG
media-type	"application/vnd.oma.poc.groups+xml"		TS 24.481 [11]	GROUPCONFIG
media-type	"application/vnd.3gpp.GMOP+xml"		TS 24.481 [11]	TEMPGROUP
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				UEINITIALCONFIG
mcptt-initial-UE-configuration	As described in Table 5.5.8.1-1	Initial UE Configuration document returned		
Message-body				UECONFIG
mcptt-UE-configuration	As described in Table 5.5.8.2-1	UE Configuration document returned		

Message-body				UEUSERPROF
mcptt-user-profile	As described in Table 5.5.8.3-1	UE User Profile document returned		
Message-body				UESERVCONFIG
service-configuration-info	As described in Table 5.5.8.4-1	UE Service Configuration document returned		
Message-body				GROUPCONFIG
group-configuration	As described in Table 5.5.7.1-1	Group Configuration document returned		
Message-body				TEMPGROUP
gmop:document				
gmop:response				
gmop:group-regroup-creation-response				
temporary-group-document-ETag	unique value arbitrarily selected by the SS			

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	"20"			
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/" & px_MCPTT_Group_B_ID	URI referring to the created MCPTT GROUP B document		

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	**Value/remark**	**Comment**	**Reference**	**Condition**
response-type	"code"	For native MCPTT clients the value shall be set to "code"	OpenID Connect 1.0 [95]	
client_id	px_MCX_OAuth_ClientId_A	Identifier of the MCPTT 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 MCPTT client to which the IdM server will redirect the MCPTT 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 MCPTT 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]	

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 MCPTT 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 MCPTT client via the authentication response	TS 33.180 [94]	
client_id	px_MCX_OAuth_ClientId_A	Identifier of the MCPTT client making the API request	TS 33.180 [94]	
redirect_uri	px_MCX_OAuth_RedirectURI_A	The URI of the MCPTT client to which the IdM server will redirect the MCPTT 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 MCPTT 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	URI of the MCPTT client User this is a globally unique identifier within the MCPTT service that represents the MCPTT user	TS 24.380 TS 24.483	
"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
	"3gpp:mc:data_service" "3gpp:mc:data_key_management_service" "3gpp:mc:data_config_management_service" "3gpp:mc:data_group_management_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 MCPTT client making the API request	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]	
}				
refresh_token	"Y7NSzUJuS0Jp7G4SKpBKSOJVHIZxFbxqsqCIZhOEk9"	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 MCPTT 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	URI of the MCPTT client User this is a globally unique identifier within the MCPTT service that represents the MCPTT user	TS 24.380 TS 24.483	
"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"	px_MCPTT_IdM_Server_URI	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]	

Editor's note: It is to be clarified whether the identifiers for mcdata and mcvideo are to be added in the table above or whether explicit tables are to be defined.

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_ClientReqUrl_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		
	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 MCPTT-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)		

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		
	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

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 5.5.3.1.3-1		
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
ON-NETWORK	Message sent in on-network scenario.
OFF-NETWORK	Message sent in off-network scenario.
PRIVATE-CALL	Message sent as part of a Private call handling.
GROUP-CALL	Message sent as part of a Group call handling.
FA	IE for when an active Functional Alias is used
Multi-Talker	IE for when a Multi Talker call is active

Considerations in regard to describing specific values:

- SSRC

  - Synchronization SouRCe (SSRC) values are used in most of the messages specified in clause 5.5.6. The SSRC value is randomly chosen by the participant in, and globally unique within, an RTP session as specified in IETF RFC 3550 [76]. Because the value chosen by the UE (MCPTT client) cannot be controlled, specifying a "hard coded" value to be used by the SS (MCPTT server) or the SS-UE (MCPTT Client) is prone to triggering a collision by choosing a value which may be the same as the one chosen by the UE. How to resolve SSRC collisions is described in IETF RFC 3550 [76] however, resolving them as part of the MCPTT test case definitions e.g. in TS 36.579-2 [2] is not foreseen and is left to the test implementation.

  - For the purposes of default and specific messages definition throughout the present specification, as well as, throughout the rest of the MCPTT conformance test specifications e.g. the TS 36.579-2 [2] no explicit SSRC values are defined and instead the following notation is used to clarify the messages origin/destination:

- When there is no danger for misunderstanding the notation 'The SSRC of the message sender' and the 'The SSRC of the intended recipient of the message' are used whereas the "sender" and the "recipient" are to be understood in the context of the test i.e. the test entities being involved to exchange messages.

- When in doubt, the notations 'UE (MCPTT client) SSRC', SS (MCPTT server) SSRC', 'SS-UE1 (MCPTT Client) SSRC' or 'SS-UE2 (MCPTT Client) SSRC' are used.

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	The SSRC of the message sender	The SSRC of the floor participant sending the message. Notation in accordance with clause 5.5.6.1.	
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		ON-NETWORK
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, any queueing	
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	

Derivation Path: 24.380 [10], Table 8.2.4-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
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	10001	Floor Granted with acknowledgment required	
SSRC	The SSRC of the message sender	The SSRC of the floor control server for on-network and floor arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	
name	MCPT		
Duration			
Duration	"00000000 10000000"	128 sec (an arbitrary value)	
SSRC of granted floor participant	The SSRC of the intended recipient of the message	Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	
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	

Derivation Path: 24.380 [10], Table 8.2.5-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID	Not present		ON-NETWORK
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		ON-NETWORK
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	

5.5.6.4 Floor Deny

Table 5.5.6.4-1: Floor Deny

Derivation Path: 24.380 [10], Table 8.2.6-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	00011	Floor Deny with acknowledgment not required	
SSRC	The SSRC of the message sender	The SSRC of the floor control server for on-network and floor arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	
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		ON-NETWORK
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	

5.5.6.5 Floor Release

Table 5.5.6.5-1: Floor Release

Derivation Path: 24.380 [10], Table 8.2.7-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	x0100	Floor Release	
SSRC	The SSRC of the message sender	The SSRC of the floor participant sending the message. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76]	
name	MCPT		
User ID	Not present		ON-NETWORK
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, any queueing	

5.5.6.6 Floor Idle

Table 5.5.6.6-1: Floor Idle

Derivation Path: 24.380 [10], Table 8.2.8-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	00101	Floor Idle with acknowledgment not required	
SSRC	The SSRC of the message sender	The SSRC of the floor control server for on-network and floor arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	
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	

5.5.6.7 Floor Taken

Table 5.5.6.7-1: Floor Taken

Derivation Path: 24.380 [10], Table 8.2.9-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	00010	Floor Taken with acknowledgment not required	
SSRC	The SSRC of the message sender	The SSRC of the floor control server for on-network and floor arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	
name	MCPT		
User ID	Not present		ON-NETWORK
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	
Floor Indicator	1000010010000000	Normal call, queueing supported, multi-talker	Multi-Talker
SSRC of granted floor participant	SS-UE1 (MCPTT Client) SSRC	The SSRC of the granted floor participant.	
SSRC of granted floor participant	Not present		Multi-Talker
Functional Alias	Not present		

Derivation Path: 24.380 [10], Table 8.2.9-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
	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	The SSRC of User A		
SSRC	The SSRC of User 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'		
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	

Derivation Path: 24.380 [10], Table 8.2.9-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
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

Derivation Path: 24.380 [10], Table 8.2.10.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	00110	Floor Revoke	
SSRC	The SSRC of the message sender	The SSRC of the floor control server for on-network and floor arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	
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	

5.5.6.9 Floor Queue Position Request

Table 5.5.6.9-1: Floor Queue Position Request

Derivation Path: 24.380 [10], Table 8.2.11-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	01000	Floor Queue Position Request	
SSRC	The SSRC of the message sender	The SSRC of the floor participant sending the message. Notation in accordance with clause 5.5.6.1. Codedas specified in IETF RFC 3550 [76]	
name	MCPT		
User ID	Not present		ON-NETWORK
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

Derivation Path: 24.380 [10], Table 8.2.12-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	01001	Floor Queue Position Info with acknowledgment not required	
SSRC	The SSRC of the message sender	The SSRC of the floor control server for on-network and floor arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	
name	MCPT		
User ID	Not present		ON-NETWORK
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		ON-NETWORK
	The SSRC of the message recepient	The SSRC field carries the SSRC of the queued floor participant	OFF-NETWORK
Queued User ID	Not present		ON-NETWORK
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	

5.5.6.11 Floor Ack

Table 5.5.6.11-1: Floor Ack

Derivation Path: 24.380 [10], Table 8.2.13-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	01010	Floor Ack	
SSRC	The SSRC of the SS	The SSRC of the floor control server for on-network and floor arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	DOWNLINK
	The SSRC of the UE	The SSRC of the floor participant sending the message Notation in accordance with subclause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	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	"0001xxxx"	Message Type of the Floormessage which requested the acknowledgment	
Track Info	Not present	The MCPTT call does not involve a non-controlling MCPTT function	

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

Derivation Path: 24.380 [10], Table 8.2.14-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	01111	Floor Release Multi Talker	
SSRC	The SSRC of the message sender	The SSRC of the floor participant sending the message. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76]	
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	

5.5.6.12 Connect

Table 5.5.6.12-1: Connect

Derivation Path: 24.380 [10], Table 8.3.4-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	10000	Connect with acknowledgment required	
SSRC	The SSRC of the SS	The SSRC of the floor control server for on-network and floor arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	
name	MCPC		
MCPTT Session Identity field			
Session Type	“00000000”	No session type	
	“00000001”	private	PRIVATE-CALL
	"00000011"	prearranged	GROUP-CALL OR BROADCAST-GROUPCALL
	“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	10001	Disconnect with acknowledgment required	
SSRC	The SSRC of the SS	The SSRC of the floor control server for on-network and floor arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	
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	

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	The SSRC of the UE	The SSRC of the floor participant sending the message Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	
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	The SSRC of the message sender	The SSRC of the floor control server for on-network and floor arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	
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.	

Derivation Path: 24.380 [10], Table 8.4.4-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
IP version	"0"	'0' = IP version 4 '1' = IP version 6 All other values are reserved for future use	
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	The SSRC of the message sender	The SSRC of the floor control server for on-network and floor arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	
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	The SSRC of the message sender	The SSRC of the participating MCPTT function. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].	
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

Derivation Path: 24.380 [10], Table 8.4.7-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
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 MCPTT 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_MCPTT_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_MCPTT_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_MCPTT_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_MCPTT_Group_A_Owner_Organization	Group's owner (Mission Critical Organisation).	TS 24.483 [13] clause 6.2.15	
mcpttgi:preferred-voice-encodings				
mcpttgi:encoding-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	

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_MCPTT_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		

Table 5.5.7.1-2: 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]	
display-name	px_MCPTT_Group_B_name	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]	
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]	
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"			
oxe:group-media				
mcpttgi:mcptt-speech	Present			

Table 5.5.7.1-3: Temporary Group Creation Document

Derivation Path: TS 24.481 [11] clause 7.3.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
gmop:document				
gmop:request				
gmop:group-regroup-creation				
group				
list-service[1]				
uri attribute	px_MCPTT_Group_T_ID	MCS temporary group identity		
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		
constituent-MCPTT-group-ID[2]	px_MCPTT_Group_B_ID	MCS group ID of a constituent MCS group of the temporary MCS group		
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			

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 5.5.7.1-1: 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_MCVideo_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_MCVideo_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_MCVideo_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_MCPTT_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_MCVideo_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		
list-service[2]		Group 2		
uri attribute	px_MCVideo_Group_D_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_D_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	

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttgi:participant-type	px_MCVideo_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_MCVideo_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			
cp:ruleset				
cp:rule				
cp:id attribute	"rule2"			
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:mcvideo-allow-emergency-call	"false"	Indicates that the identity is not allowed to request an MCVideo-emergency call on the MCVideo group.		
mcpttgi:mcvideo-allow-emergency-alert	"false"	Indicates that the identity is not allowed to request an MCVideo-emergency alert on the MCVideo group.		
mcpttgi:mcvideo-allow-imminent-peril-call	"false"	Indicates that the identity is not allowed to request an MCVideo imminent peril call on the MCVideo group.		
mcpttgi:mcvideo-on-network-allow-conference-state	"false"	Indicates that the identity is not 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	"false"	Indicates that the identity is not allowed to get the list of MCVideo users affiliated to the MCVideo group in on-network MCVideo procedures.		
oxe:supported-services				

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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_MCPTT_Group_D_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_MCVideo_Group_D_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: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.		

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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: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	
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	

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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_MCData_User_A_ParticipantType	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_MCData_User_B_ParticipantType	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_MCData_User_C_ParticipantType	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_MCPTT_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_MCData_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: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: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		

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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		
list-service[2]		Group 2		
uri attribute	px_MCDATA_Group_D_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_D_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_MCData_User_A_ParticipantType	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		

Derivation Path: TS 24.481 [11] clause 7.2.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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_MCData_User_B_ParticipantType	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	
cp:ruleset				
cp:rule				
cp:id attribute	"rule2"			
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	"false"	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_MCPTT_Group_D_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_MCVideo_Group_D_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: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		

5.5.8 Default MCS configuration management messages and other information elements

5.5.8.1 MCPTT Initial UE Configuration

The structure of a initial UE configuration document is specified in TS 24.484 [14] clause 7.2, single MCPTT group configuration parameters are defined in TS 24.483 [13] clause 8.2.

Table 5.5.8.1-1: MCPTT Initial UE Configuration Defaults

Derivation Path: TS 24.484 [13], 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 24.380 [10] TS 24.483 [13] clause 8.2.11	
T101	"2"	Values 0-255 sec	TS 24.380 [10] TS 24.483 [13] clause 8.2.12	
T103	"5"	Values 0-255 sec	TS 24.380 [10] TS 24.483 [13] clause 8.2.13	
T104	"2"	Values 0-255 sec	TS 24.380 [10] TS 24.483 [13] clause 8.2.14	
T132	"3"	Values 0-255 sec	TS 24.380 [10] TS 24.483 [13] clause 8.2.15	
HPLMN				
PLMN attribute	PLMN1	the PLMN on which the UE is allowed for MCPTT services. Public Land Mobile Network is uniquely identified by its PLMN identifier; consists of Mobile Country Code (MCC) and Mobile Network Code (MNC) and are defined by the operator. NOTE: PLMN1 shall be the PLMN of the Cell on which the UE is camped during testing.	TS 23.003 [69] TS 24.483 [13] clause 8.2.16	
service		MCPTT related services on a per HPLMN basis		
MCPTT-to-con-ref	px_MCPTT_ALL_APN	configuration parameter for establishment of the PDN connection for the **MCPTT service**	TS 24.483 [13] clause 8.2.21	
MC-common-core-to-con-ref	px_MCPTT_ALL_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_MCPTT_ALL_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]				

Derivation Path: TS 24.484 [13], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
PLMN attribute	PLMN2	VPLMN configuration for another PLMN which can be used by the UE to access MCPTT service NOTE: PLMN2 shall be a different PLMN to PLMN1 of a Cell to which the UE will move during testing when specified in a test case.		
service				
MCPTT-to-con-ref	px_MCPTT_ALL_APN	configuration parameter for establishment of the PDN connection for the **MCPTT service**	TS 24.483 [13] clause 8.2.33	
MC-common-core-to-con-ref	px_MCPTT_ALL_APN	configuration parameter for establishment of the PDN connection for the **MC common core service**	TS 24.483 [13] clause 8.2.36	
MC-ID-to-con-ref	px_MCPTT_ALL_APN	configuration parameter for establishment of the PDN connection for the **MC identity management service**	TS 24.483 [13] clause 8.2.39	
App-Server-Info				
idms-auth-endpoint	"https://" & px_MCX_IdMS_auth_IPAddress & ":" & px_MCX_IdMS_auth_Port & 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_IPAddress & "]:" & px_MCX_IdMS_auth_Port & 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
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

Derivation Path: TS 24.484 [13], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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_MCPTT_GroupCreationXUI	Indicates the group creation XUI information for creation of groups	TS 23.003 [69] TS 24.483 [13] clause 8.2.9A	
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	
off-network				
Timers				
TFG1	"150"	Indicates the timer for wait for call announcement; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.47	
TFG2	"2000"	Indicates the timer for call announcement; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.48	

Derivation Path: TS 24.484 [13], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
TFG3	"40"	Indicates the timer for call probe retransmission; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.49	
TFG4	"20"	Indicates the timer for waiting for the MCPTT user; Values: 0-60 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.50	
TFG5	"2"	Indicates the timer for not present incoming call announcements; Values: 0-255 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.51	
TFG11	"3000"	Indicates the timer for MCPTT emergency end retransmission; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.52	
TFG12	"3000"	Indicates the timer for MCPTT imminent peril end retransmission; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.53	
TFG13	"1"	Indicates the timer for implicit priority downgrade; Values: 0-255 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.54	
TFG14	"1"	Indicates the MCPTT timer for implicit priority downgrade (imminent peril); Values: 0-255 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.54A	
TFP1	"2000"	Indicates the timer for private call request retransmission; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.55	
TFP2	"50"	Indicates the timer for waiting for call response message; Values: 0-60 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.56	
TFP3	"2000"	Indicates the timer for private call release retransmission; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.57	
TFP4	"5000"	Indicates the timer for private call release retransmission; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.58	
TFP5	"30"	Indicates the timer for call release; Values: 0-600 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.59	
TFP6	"3000"	Indicates the timer for MCPTT emergency private call cancel retransmission; Values: 0-65535 ms	TS 24.379 [9] 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 24.379 [9] TS 24.483 [13] clause 8.2.61	
TFB1	"300"	Indicates the timer for max duration; Values: 0-600 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.62	
TFB2	"10"	Indicates the timer for max duration; Values: 0-10 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.63	
TFB3	"20"	Indicates the timer for waiting for the MCPTT user; Values: 0-60 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.64	

Derivation Path: TS 24.484 [13], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
T201	"1000"	Indicates the timer for floor request; Values: 0-65535 ms	TS 24.380 [10] TS 24.483 [13] clause 8.2.65	
T203	"5"	Indicates the timer for end of RTP media; Values: 0-255 s	TS 24.380 [10] TS 24.483 [13] clause 8.2.66	
T204	"5"	Indicates the timer for floor queue position request; Values: 0-255 s	TS 24.380 [10] TS 24.483 [13] clause 8.2.67	
T205	"1"	Indicates the timer for floor granted request; Values: 0-255 s	TS 24.380 [10] TS 24.483 [13] clause 8.2.68	
T230	"10"	Indicates the timer for inactivity; Values: 0-255 s	TS 24.380 [10]	
T233	"10"	Indicates the timer for pending user action; Values: 0-255 s	TS 24.380 [10] TS 24.483 [13] clause 8.2.70	
TFE1	"30"	Indicates the timer for MCPTT emergency alert; Values: 0-65535 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.71	
TFE2	"10"	Indicates the timer for MCPTT emergency alert re-transmission; Values: 0-10 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.72	
Counters				
CFP1	"3"	Indicates the counter for private call request retransmission	TS 24.379 [9] TS 24.483 [13] clause 8.2.74	
CFP3	"5"	Indicates the counter for private call release retransmission	TS 24.379 [9] TS 24.483 [13] clause 8.2.75	
CFP4	"2"	Indicates the counter for private call accept retransmission	TS 24.379 [9] TS 24.483 [13] clause 8.2.76	
CFP6	"2"	Indicates the counter for private call accept retransmission	TS 24.379 [9] TS 24.483 [13] clause 8.2.77	
CFP11	"2"	Indicates the counter for MCPTT group call emergency end retransmission	TS 24.379 [9] TS 24.483 [13] clause 8.2.78	
CFP12	"2"	Indicates the counter for MCPTT imminent peril call emergency end retransmission	TS 24.379 [9] TS 24.483 [13] clause 8.2.79	
C201	"3"	Indicates the counter for floor request	TS 24.379 [9] TS 24.483 [13] clause 8.2.80	
C204	"2"	Indicates the counter for floor queue position request	TS 24.379 [9] TS 24.483 [13] clause 8.2.81	
C205	"4"	Indicates the counter for floor granted request	TS 24.379 [9] 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

Derivation Path: TS 24.484 [14] clause 8.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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_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 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 MCPTT 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_ID	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	px_MCPTT_User_XUI_URI			
user-profile-index attribute	"49"	value arbitrarily selected		
Status	true	MCPTT user profile is enabled		
ProfileName	px_MCPTT_User_A_Profile_Name	Profile name for the MCPTT user	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_MCPTT_User_A_ParticipantType	Participant type of the MCPTT user	TS 24.483 [13] clause 5.2.10	
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	"1234"	Discovery group ID in the ProSe discovery procedures	TS 23.303 [68] TS 24.483 [13] clause 5.2.19	
User-Info-ID	"5555"	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	"1234"	Discovery group ID in the ProSe discovery procedures	TS 23.303 [68] TS 24.483 [13] clause 5.2.19	
User-Info-ID	"6666"	Prose user Info ID in the ProSe discovery procedures	TS 23.303 [68] TS 24.483 [13] clause 5.2.19A	
EmergencyCall				
MCPTTPrivateRecipient				
entry				

Derivation Path: TS 24.484 [14] clause 8.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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	"1234"	Discovery group ID in the ProSe discovery procedures	TS 24.483 [13] clause 5.2.29C	
User-Info-ID	"5555"	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_ID	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_ID	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	

Derivation Path: TS 24.484 [14] clause 8.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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	"5555"	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 5.2.48B4	
display-name	px_MCPTT_Group_A_Name	The display name for the group	TS 24.483 [13] clause 5.2.48B5	
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"			

Derivation Path: TS 24.484 [14] clause 8.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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 5.2.48 M	
display-name	px_MCPTT_User_A_Alias	The display name corresponding to private emergency call id	TS 24.483 [13] clause 5.2.48N	
anyExt				
FunctionalAliasList			TS 24.483 [13] clause 5.2.48 W6	
entry	px_MCPTT_ID_FA_A			
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	
allow-emergency-private-call	"true"	Indicates the authorisation to make an MCPTT emergency private call.	TS 24.483 [13] clause 5.2.27	

Derivation Path: TS 24.484 [14] clause 8.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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	

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 5.2.48 G	
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-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	
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-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	

Derivation Path: TS 24.484 [14] clause 8.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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	
resource-priority-priority	"8"		RFC 8101	
imminent-peril-resource-priority				
resource-priority-namespace	"mcpttp"		RFC 8101	
resource-priority-priority	"5"		RFC 8101	
normal-resource-priority				
resource-priority-namespace	"mcpttp"		RFC 8101	
resource-priority-priority	"1"		RFC 8101	
anyExt				
functional-alias-list				
functional-alias	px_MCPTT_ID_FA_A			
max-simultaneous-activations	"1"			
allow-takeover	"true"			
mcptt-user-list				
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	
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				

Derivation Path: TS 24.484 [14], clause 8.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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 MCVideo Initial UE Configuration

Table 5.5.8.5-1: MCVideo 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				
User-ID attribute	px_MCVideo_ID_User_A	Default User Identity	TS 24.483 [13] clause 8.2.6	
user-profile-index attribute	"0"	Values 0-255. Indicates selected user profile	TS 24.483 [13] clause 8.2.7	
on-network				
Timers				
T100	"2"	Values 0-255 sec	TS 24.581 [88] TS 24.483 [13] clause 8.2.11	
T101	"2"	Values 0-255 sec	TS 24.581 [88] TS 24.483 [13] clause 8.2.12	
T103	"5"	Values 0-255 sec	TS 24.581 [88] TS 24.483 [13] clause 8.2.13	
T104	"2"	Values 0-255 sec	TS 24.581 [88] TS 24.483 [13] clause 8.2.14	
T132	"3"	Values 0-255 sec	TS 24.581 [88] TS 24.483 [13] clause 8.2.15	
HPLMN				
PLMN attribute	PLMN1	the PLMN on which the UE is allowed for MCVideo services. Public Land Mobile Network is uniquely identified by its PLMN identifier; consists of Mobile Country Code (MCC) and Mobile Network Code (MNC) and are defined by the operator. NOTE: PLMN1 shall be the PLMN of the Cell on which the UE is camped during testing.	TS 23.003 [69] TS 24.483 [13] clause 8.2.16	
service		MCVideo related services on a per HPLMN basis		
MCPTT-to-con-ref	px_MCVideo_ALL_APN	configuration parameter for establishment of the PDN connection for the **MCVideo service**	TS 24.483 [13] clause 8.2.21	
MC-common-core-to-con-ref	px_MCVideo_ALL_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_MCVideo_ALL_APN	configuration parameter for establishment of the PDN connection for the **MC identity management service**	TS 24.483 [13] clause 8.2.27	

Derivation Path: TS 24.484 [14], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
VPLM[1]				
PLMN attribute	PLMN2	VPLMN configuration for another PLMN which can be used by the UE to access MCVideo service NOTE: PLMN2 shall be a different PLMN to PLMN1 of a Cell to which the UE will move during testing when specified in a test case.		
service				
MCPTT-to-con-ref	px_MCVideo_ALL_APN	configuration parameter for establishment of the PDN connection for the **MCVideo service**	TS 24.483 [13] clause 8.2.33	
MC-common-core-to-con-ref	px_MCVideo_ALL_APN	configuration parameter for establishment of the PDN connection for the **MC common core service**	TS 24.483 [13] clause 8.2.36	
MC-ID-to-con-ref	px_MCVideo_ALL_APN	configuration parameter for establishment of the PDN connection for the **MC identity management service**	TS 24.483 [13] clause 8.2.39	
App-Server-Info				
idms-auth-endpoint	"https://" & px_MCX_IdMS_auth_IPAddress & ":" & px_MCX_IdMS_auth_Port & 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_IPAddress & "]:" & px_MCX_IdMS_auth_Port & 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
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

Derivation Path: TS 24.484 [14], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	"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_MCVideo_GroupCreationXUI	Indicates the group creation XUI information for creation of groups	TS 23.003 [69] TS 24.483 [13] clause 8.2.9A	
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	
off-network				
Timers				
TFG1	"150"	Indicates the timer for wait for call announcement; Values: 0-65535 ms	TS 24.281 [86] TS 24.483 [13] clause 8.2.47	

Derivation Path: TS 24.484 [14], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
TFG2	"2000"	Indicates the timer for call announcement; Values: 0-65535 ms	TS 24.281 [86] TS 24.483 [13] clause 8.2.48	
TFG3	"40"	Indicates the timer for call probe retransmission; Values: 0-65535 ms	TS 24.281 [86] TS 24.483 [13] clause 8.2.49	
TFG4	"20"	Indicates the timer for waiting for the MCVideo user; Values: 0-60 s	TS 24.281 [86] TS 24.483 [13] clause 8.2.50	
TFG5	"2"	Indicates the timer for not present incoming call announcements; Values: 0-255 s	TS 24.281 [86] TS 24.483 [13] clause 8.2.51	
TFG11	"3000"	Indicates the timer for MCVideo emergency end retransmission; Values: 0-65535 ms	TS 24.281 [86] TS 24.483 [13] clause 8.2.52	
TFG12	"3000"	Indicates the timer for MCVideo imminent peril end retransmission; Values: 0-65535 ms	TS 24.281 [86] TS 24.483 [13] clause 8.2.53	
TFG13	"1"	Indicates the timer for implicit priority downgrade; Values: 0-255 s	TS 24.281 [86] TS 24.483 [13] clause 8.2.54	
TFG14	"1"	Indicates the MCVideo timer for implicit priority downgrade (imminent peril); Values: 0-255 s	TS 24.281 [86] TS 24.483 [13] clause 8.2.54A	
TFP1	"2000"	Indicates the timer for private call request retransmission; Values: 0-65535 ms	TS 24.281 [86] TS 24.483 [13] clause 8.2.55	
TFP2	"50"	Indicates the timer for waiting for call response message; Values: 0-60 s	TS 24.281 [86] TS 24.483 [13] clause 8.2.56	
TFP3	"2000"	Indicates the timer for private call release retransmission; Values: 0-65535 ms	TS 24.281 [86] TS 24.483 [13] clause 8.2.57	
TFP4	"5000"	Indicates the timer for private call release retransmission; Values: 0-65535 ms	TS 24.281 [86] TS 24.483 [13] clause 8.2.58	
TFP5	"30"	Indicates the timer for call release; Values: 0-600 s	TS 24.281 [86] TS 24.483 [13] clause 8.2.59	
TFP6	"3000"	Indicates the timer for MCVideo emergency private call cancel retransmission; Values: 0-65535 ms	TS 24.281 [86] 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 24.281 [86] TS 24.483 [13] clause 8.2.61	
TFB1	"300"	Indicates the timer for max duration; Values: 0-600 s	TS 24.281 [86] TS 24.483 [13] clause 8.2.62	

Derivation Path: TS 24.484 [14], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
TFB2	"10"	Indicates the timer for max duration; Values: 0-10 s	TS 24.281 [86] TS 24.483 [13] clause 8.2.63	
TFB3	"20"	Indicates the timer for waiting for the MCVideo user; Values: 0-60 s	TS 24.281 [86] TS 24.483 [13] clause 8.2.64	
T201	"1000"	Indicates the timer for floor request; Values: 0-65535 ms	TS 24.581 [88] TS 24.483 [13] clause 8.2.65	
T203	"5"	Indicates the timer for end of RTP media; Values: 0-255 s	TS 24.581 [88] TS 24.483 [13] clause 8.2.66	
T204	"5"	Indicates the timer for floor queue position request; Values: 0-255 s	TS 24.581 [88] TS 24.483 [13] clause 8.2.67	
T205	"1"	Indicates the timer for floor granted request; Values: 0-255 s	TS 24.581 [88] TS 24.483 [13] clause 8.2.68	
T230	"10"	Indicates the timer for inactivity; Values: 0-255 s	TS 24.581 [88]	
T233	"10"	Indicates the timer for pending user action; Values: 0-255 s	TS 24.581 [88] TS 24.483 [13] clause 8.2.70	
TFE1	"30"	Indicates the timer for MCVideo emergency alert; Values: 0-65535 s	TS 24.281 [86] TS 24.483 [13] clause 8.2.71	
TFE2	"10"	Indicates the timer for MCVideo emergency alert re-transmission; Values: 0-10 s	TS 24.281 [86] TS 24.483 [13] clause 8.2.72	
Counters				
CFP1	"3"	Indicates the counter for private call request retransmission	TS 24.281 [86] TS 24.483 [13] clause 8.2.74	
CFP3	"5"	Indicates the counter for private call release retransmission	TS 24.281 [86] TS 24.483 [13] clause 8.2.75	
CFP4	"2"	Indicates the counter for private call accept retransmission	TS 24.281 [86] TS 24.483 [13] clause 8.2.76	
CFP6	"2"	Indicates the counter for private call accept retransmission	TS 24.281 [86] TS 24.483 [13] clause 8.2.77	
CFP11	"2"	Indicates the counter for MCVideo group call emergency end retransmission	TS 24.281 [86] TS 24.483 [13] clause 8.2.78	
CFP12	"2"	Indicates the counter for MCVideo imminent peril call emergency end retransmission	TS 24.281 [86] TS 24.483 [13] clause 8.2.79	
C201	"3"	Indicates the counter for floor request	TS 24.281 [86] TS 24.483 [13] clause 8.2.80	
C204	"2"	Indicates the counter for floor queue position request	TS 24.281 [86] TS 24.483 [13] clause 8.2.81	
C205	"4"	Indicates the counter for floor granted request	TS 24.281 [86] TS 24.483 [13] clause 8.2.82	

Condition	Explanation
IPv4	IP address is IPv4 address
IPv6	IP address is IPv6 address

5.5.8.6 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

Derivation Path: TS 24.484 [14] clause 9.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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 MCPTT 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 MCPTT 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

Derivation Path: TS 24.24.484, clause 9.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcptt-user-profile				
XUI-URI attribute	px_MCVideo_User_XUI_URI			
user-profile-index attribute	"0"			
Status	“true”	MCVideo user profile is enabled		
ProfileName	px_MCVideo_User_A_Profile_Name	Profile name for the MCVideo user	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	px_MCVideo_User_A_Alias	Alphanumeric aliases of MCVideo user	TS 24.483 [13] clause 13.2.11	
ParticipantType	px_MCVideo_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_MCVideo_User_A_Organization	Indicates the organization an MCVideo user belongs to	TS 24.483 [13] clause 13.2.16	
NotifyList				
index attribute	"0"			
uri-entry	px_MCVideo_ID_User_B			
CatList				
catentry	"1"		TS 24.483 [13] clause 13.2.38	
ReceptionPriority	"1"			
OnNetwork				
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

Derivation Path: TS 24.24.484, clause 9.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
	"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	
MaxAffiliationsNc2	"10"		TS 24.483 [13] clause 13.2.67	
MaxTimeSingleTransmit	"600"	Value in seconds	TS 24.483 [13] clause 13.2.87	
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	px_MCVideo_ID_User_A		TS 24.483 [13] clause 13.2.102	
cp:ruleset				
cp:rule				
cp:id attribute	"rule1"			
cp:actions				
allow-create-delete-user-alias	"true"			
allow-create-group-broadcast- group	"true"			
allow-create-user-broadcast-group	"true"			
allow-modify-video	"true"			
allow-renegotiate-codec	"true"			
allow-camera-control	"true"			
allow-remote-control	"true"			
allow-display-remote-ue	"true"			
allow-remote-camera	"true"			
allow-push-video	"true"			
allow-auto-send-notify	"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"			

Derivation Path: TS 24.24.484, clause 9.3				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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-unlimited-video-streams	"true"			
allow-auto-recv	"true"			
allow-auto-recv-emergency	"true"			
allow-auto-recv-imminent-peril	"true"			
allow-request-override	"true"			
allow-select-override	"true"			
allow-override-group-call	"true"			
allow-off-network	"true"			
allow-private-call	"true"			
allow-manual-commencement	"true"			
allow-automatic-commencement	"true"			
allow-failure-restriction	"true"			
allow-emergency-group-call	"true"			
allow-emergency-private-call	"true"			
allow-cancel-group-emergency	"true"			
allow-imminent-peril-call	"true"			
allow-cancel-imminent-peril	"true"			
allow-off-network-group-call-change-to-emergency	"true"			
allow-create-delete-user-alias	"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

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"			
off-network				
private-call				
mcvideo-max-duration	"600"	Value in seconds	TS 24.483 [13] clause 14.2.17	
default-prose-per-packet-priority	"1"	Indicates the default ProSe Per-Packet Priority (PPPP) value		
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		
num-levels-priority-hierarchy	"4"		TS 24.483 [13] clause 14.2.18	

5.5.8.9 MCDATA Initial UE Configuration

The structure of an initial UE configuration document is specified in TS 24.484 [14] clause 7.2. Single MCPTT group configuration parameters are defined in TS 24.483 [13] clause 8.2.

Table 5.5.8.9-1: MCDATA 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				
User-ID attribute	px_MCData_ID_User_A	Default User Identity	TS 24.483 [13] clause 8.2.6	
user-profile-index attribute	"0"	Values 0-255. Indicates selected user profile	TS 24.483 [13] clause 8.2.7	
on-network				
Timers				
T100	"2"	Values 0-255 sec	TS 24.380 [10] TS 24.483 [13] clause 8.2.11	
T101	"2"	Values 0-255 sec	TS 24.380 [10] TS 24.483 [13] clause 8.2.12	
T103	"5"	Values 0-255 sec	TS 24.380 [10] TS 24.483 [13] clause 8.2.13	
T104	"2"	Values 0-255 sec	TS 24.380 [10] TS 24.483 [13] clause 8.2.14	
T132	"3"	Values 0-255 sec	TS 24.380 [10] TS 24.483 [13] clause 8.2.15	
TDU1	"120"	Value in ms	TS 24.282 [91] clause F.2.3	
TDU2	"60"	Value in seconds	TS 24.282 [91] clause F.2.3	
HPLMN				
PLMN attribute	PLMN1	the PLMN on which the UE is allowed for MCData services. Public Land Mobile Network is uniquely identified by its PLMN identifier; consists of Mobile Country Code (MCC) and Mobile Network Code (MNC) and are defined by the operator. NOTE: PLMN1 shall be the PLMN of the Cell on which the UE is camped during testing.	TS 23.003 [69] TS 24.483 [13] clause 8.2.16	
service		MCData related services on a per HPLMN basis		
MCPTT-to-con-ref	px_MCData_ALL_APN	configuration parameter for establishment of the PDN connection for the **MCData service**	TS 24.483 [13] clause 8.2.21	
MC-common-core-to-con-ref	px_MCData_ALL_APN	configuration parameter for establishment of the PDN connection for the **MC common core service**	TS 24.483 [13] clause 8.2.24	

Derivation Path: TS 24.484 [14], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MC-ID-to-con-ref	px_MCData_ALL_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]				
PLMN attribute	PLMN2	VPLMN configuration for another PLMN which can be used by the UE to access MCData service NOTE: PLMN2 shall be a different PLMN to PLMN1 of a Cell to which the UE will move during testing when specified in a test case.		
service				
MCPTT-to-con-ref	px_MCData_ALL_APN	configuration parameter for establishment of the PDN connection for the **MCData service**	TS 24.483 [13] clause 8.2.33	
MC-common-core-to-con-ref	px_MCData_ALL_APN	configuration parameter for establishment of the PDN connection for the **MC common core service**	TS 24.483 [13] clause 8.2.36	
MC-ID-to-con-ref	px_MCData_ALL_APN	configuration parameter for establishment of the PDN connection for the **MC identity management service**	TS 24.483 [13] clause 8.2.39	
App-Server-Info				
idms-auth-endpoint	"https://" & px_MCX_IdMS_auth_IPAddress & ":" & px_MCX_IdMS_auth_Port & 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_IPAddress & "]:" & px_MCX_IdMS_auth_Port & 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
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

Derivation Path: TS 24.484 [14], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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_Hostn ame	Indicates the group management server identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.42	
cms	tsc_MCX_CMS_Hostna me	Indicates the configuration management server identity information	TS 23.003 [69] TS 24.483 [13] clause 8.2.43	
kms	tsc_MCX_KMS_Hostna me	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_MCData_GroupCre ationXUI	Indicates the group creation XUI information for creation of groups	TS 23.003 [69] TS 24.483 [13] clause 8.2.9A	
GMS-XCAP-root-URI	tsc_MCX_GMSXCAPR ootURI	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_CMSXCAPR ootURI	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	
off-network				
Timers				

Derivation Path: TS 24.484 [14], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
TFG1	"150"	Indicates the timer for wait for call announcement; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.47	
TFG2	"2000"	Indicates the timer for call announcement; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.48	
TFG3	"40"	Indicates the timer for call probe retransmission; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.49	
TFG4	"20"	Indicates the timer for waiting for the MCData user; Values: 0-60 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.50	
TFG5	"2"	Indicates the timer for not present incoming call announcements; Values: 0-255 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.51	
TFG11	"3000"	Indicates the timer for MCData emergency end retransmission; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.52	
TFG12	"3000"	Indicates the timer for MCData imminent peril end retransmission; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.53	
TFG13	"1"	Indicates the timer for implicit priority downgrade; Values: 0-255 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.54	
TFG14	"1"	Indicates the MCData timer for implicit priority downgrade (imminent peril); Values: 0-255 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.54A	
TFP1	"2000"	Indicates the timer for private call request retransmission; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.55	
TFP2	"50"	Indicates the timer for waiting for call response message; Values: 0-60 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.56	
TFP3	"2000"	Indicates the timer for private call release retransmission; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.57	
TFP4	"5000"	Indicates the timer for private call release retransmission; Values: 0-65535 ms	TS 24.379 [9] TS 24.483 [13] clause 8.2.58	
TFP5	"30"	Indicates the timer for call release; Values: 0-600 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.59	
TFP6	"3000"	Indicates the timer for MCData emergency private call cancel retransmission; Values: 0-65535 ms	TS 24.379 [9] 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 24.379 [9] TS 24.483 [13] clause 8.2.61	
TFB1	"300"	Indicates the timer for max duration; Values: 0-600 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.62	

Derivation Path: TS 24.484 [14], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
TFB2	"10"	Indicates the timer for max duration; Values: 0-10 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.63	
TFB3	"20"	Indicates the timer for waiting for the MCData user; Values: 0-60 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.64	
T201	"1000"	Indicates the timer for floor request; Values: 0-65535 ms	TS 24.380 [10] TS 24.483 [13] clause 8.2.65	
T203	"5"	Indicates the timer for end of RTP media; Values: 0-255 s	TS 24.380 [10] TS 24.483 [13] clause 8.2.66	
T204	"5"	Indicates the timer for floor queue position request; Values: 0-255 s	TS 24.380 [10] TS 24.483 [13] clause 8.2.67	
T205	"1"	Indicates the timer for floor granted request; Values: 0-255 s	TS 24.380 [10] TS 24.483 [13] clause 8.2.68	
T230	"10"	Indicates the timer for inactivity; Values: 0-255 s	TS 24.380 [10]	
T233	"10"	Indicates the timer for pending user action; Values: 0-255 s	TS 24.380 [10] TS 24.483 [13] clause 8.2.70	
TFE1	"30"	Indicates the timer for MCData emergency alert; Values: 0-65535 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.71	
TFE2	"10"	Indicates the timer for MCData emergency alert re-transmission; Values: 0-10 s	TS 24.379 [9] TS 24.483 [13] clause 8.2.72	
TFS1	"40"	Value in ms	TS 24.282 [91] clause F.3.1	
TFS2	"40"	Value in ms	TS 24.282 [91] clause F.3.1	
TFS3	"120"	Value in ms	TS 24.282 [91] clause F.3.1	
Counters				
CFP1	"3"	Indicates the counter for private call request retransmission	TS 24.379 [9] TS 24.483 [13] clause 8.2.74	
CFP3	"5"	Indicates the counter for private call release retransmission	TS 24.379 [9] TS 24.483 [13] clause 8.2.75	
CFP4	"2"	Indicates the counter for private call accept retransmission	TS 24.379 [9] TS 24.483 [13] clause 8.2.76	
CFP6	"2"	Indicates the counter for private call accept retransmission	TS 24.379 [9] TS 24.483 [13] clause 8.2.77	
CFP11	"2"	Indicates the counter for MCData group call emergency end retransmission	TS 24.379 [9] TS 24.483 [13] clause 8.2.78	
CFP12	"2"	Indicates the counter for MCData imminent peril call emergency end retransmission	TS 24.379 [9] TS 24.483 [13] clause 8.2.79	
C201	"3"	Indicates the counter for floor request	TS 24.379 [9] TS 24.483 [13] clause 8.2.80	

Derivation Path: TS 24.484 [14], clause 7.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
C204	"2"	Indicates the counter for floor queue position request	TS 24.379 [9] TS 24.483 [13] clause 8.2.81	
C205	"4"	Indicates the counter for floor granted request	TS 24.379 [9] TS 24.483 [13] clause 8.2.82	
CFS1	"5"		TS 24.282 [91] clause G.3.1	
CFS2	"5"		TS 24.282 [91] clause G.3.1	

Condition	Explanation
IPv4	IP address is IPv4 address
IPv6	IP address is IPv6 address

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		Iindicates 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 MCDATA 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, clause 10.3.2.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcdata-user-profile				
XUI-URI attribute	px_MCData_User_XUI_URI	Contains the XUI of the MCData user for whom this MCData user profile configuration document is intended and does not appear in the user profile configuration managed object specified in 3GPP TS 24.483 [4].		
user-profile-index attribute	"0"	Indicates the particular MCData user profile configuration document in the collection and corresponds to the "MCDataUserProfileIndex" element of clause 10.2.8 in 3GPP TS 24.483 [4].		
Status	“true”	MCData user profile is enabled		
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_MCData_User_A_Organization	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 10.2.21 A	

Derivation Path: TS 24.484, clause 10.3.2.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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				
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 clause 10.2.47	
GMS-App-Serv-ID				
entry	tsc_MCX_GMS_Hostname	Placeholder for one or more Group Management Server configurations.		

Derivation Path: TS 24.484, clause 10.3.2.1				
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
Relativepresentation Priority	"7"			
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 24.43 clause 10.2.92	
OffNetwork				
index attribute	"0"			
MCDataGroupInfo				
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 10.2.103	
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

Derivation Path: TS 24.484, clause 10.3.2.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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	px_MCData_User_A_ID			
ruleset				
rule				
actions				
allow-create-delete-user-alias	"true"			
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"			

Derivation Path: TS 24.484, clause 10.3.2.1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
allow-enable-disable-UE	"true"			
allow-off-network-manual-switch	"true"			
allow-off-network	"true"			
allow-create-delete-user-alias	"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 MCVideo 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		
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		
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		
off-network				
default-prose-per-packet-priority				
mcdata-one-to-one-call-signalling	"1"		TS 24.483 [13] clause 11.2.11	

Derivation Path: TS 24.484 [14], clause 10.4				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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	
	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	Same URI as used as request URI of the SIP message containing the MIKEY-SAKKE I_MESSAGE	URI of the server to which the message is sent	
}			
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			

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		
	px_MCVideo_PublicServiceId_A		MCVIDEO
	px_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	
	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)	
}			

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	
	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	
	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	
	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	
	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	

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
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	
	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	'AAAAAAAAAAAAAAAA5555555555555555'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.	
	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 {			

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)

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	'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	px_MCPTT_PublicServiceId_A	The public service identity identifying the participating MCPTT function	
}			
IDRr payload {			
Next payload	'00001110'B	Next payload is IDRkmsi	

Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24]			
Field	**Value/remark**	**Comment**	**Condition**
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)

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	'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	px_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

Considerations in regard to describing specific values:

- SSRC

  - Synchronization SouRCe (SSRC) values are used in most of the messages specified in clause 5.5.6. The SSRC value is randomly chosen by the participant in, and globally unique within, an RTP session as specified in IETF RFC 3550 [76]. Because the value chosen by the UE (MCVideo client) cannot be controlled, specifying a "hard coded" value to be used by the SS (MCVideo Server) or the SS-UE (MCVideo Client) is prone to triggering a collision by choosing a value which may be the same as the one chosen by the UE. How to resolve SSRC collisions is described in IETF RFC 3550 [76] however, resolving them as part of the MCVideo test case definitions e.g. in TS 36.579-6 [84] is not foreseen and is left to the test implementation.

  - For the purposes of default and specific messages definition throughout the present specification, as well as, throughout the rest of the MCPTT conformance test specifications e.g. the TS 36.579-6 [84] no explicit SSRC values are defined and instead the following notation is used to clarify the messages origin/destination:

- When there is no danger for misunderstanding the notation 'The SSRC of the message sender' and the 'The SSRC of the intended recipient of the message' are used whereas the "sender" and the "recipient" are to be understood in the context of the test i.e. the test entities being involved to exchange messages.

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

Derivation Path: TS 24.581 [88] Table 9.2.4-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Subtype	“00000”	Transmission control messages sent by the transmission control participant to the transmission control server	TC 24.581 [88] clause 9.2.7 and Table 9.2.2.1-1	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission participant sending the Transmission Request message. The participant has permission to send media.	IETF RFC 3550 [3].	
Transmission Priority			TC 24.581 [88] clause 9.2.3.2	
Transmission Priority Field ID	“00000000”	8-bit binary value		
Transmission Priority Length	“00000010”	A binary value that has the value '2' Indicates the total length in octets of the <Transmission priority> value item and the spare bits.		
Transmission Priority Value	Any allowed value	Consists of 8 bit parameter giving the transmission priority ('0' to '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.		
Spare bits	"00000000"	An 8-bit binary value set to zero.		
User ID	Not Present			ON-NETWORK

Derivation Path: TS 24.581 [88] Table 9.2.4-1				
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.	TC 24.581 [88] clause 9.3.2.8	OFF-NETWORK
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
Transmission Indicator			TC 24.581 [88] clause 9.2.3.11	
Transmission Indicator field ID	"00001101"		TC 24.581 [88] clause 9.2.3.11	
Transmission Indicator Length	"10"	value is a binary value and has the value '2'		

Derivation Path: TS 24.581 [88] Table 9.2.4-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Indicator	"1000000000000000"	Contains additional information about a received transmission control message. It is a 16 bit bit-map named as shown in Table 9.2.3.11.2 (a thru P). When set to 1, the bit has the following meaning: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call NOTE 1: The indicators C, D and E are only informative. There are no procedures specified for the C, D and E indicators in this release of the present document and the use of the indicators are implementation specific. Bits F to P are reserved for future use and are set to 0. There can be more than one bit set to 1 at the same time. The local policy in the transmission control server decides which combinations are possible and the priority of the indications.	TC 24.581 [88] clause 9.2.3.11	

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**
Subtype	“00010”	Transmission control messages sent by the transmission control participant to the transmission control server	TC 24.581 [88] clause 9.2.7 and Table 9.2.2.1-1	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission participant with permission to send media.	IETF RFC 3550 [3].	
User ID	Not Present			ON-NETWORK
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.	TC 24.581 [88] clause 9.3.2.8	OFF-NETWORK
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
Transmission Indicator				
Transmission Indicator field ID	"00001101"		TC 24.581 [88] clause 9.2.3.11	
Transmission Indicator Length	"10"	value is a binary value and has the value '2'		

Derivation Path: TS 24.581 [88] Table 9.2.7-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Indicator	"1000000000000000"	Contains additional information about a received transmission control message. It is a 16 bit bit-map named as shown in Table 9.2.3.11.2 (a thru P). When set to 1, the bit has the following meaning: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call NOTE 1: The indicators C, D and E are only informative. There are no procedures specified for the C, D and E indicators in this release of the present document and the use of the indicators are implementation specific. Bits F to P are reserved for future use and are set to 0. There can be more than one bit set to 1 at the same time. The local policy in the transmission control server decides which combinations are possible and the priority of the indications.	TC 24.581 [88] clause 9.2.3.11	

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**
Subtype	“00011”	Server → client	TS 24.581 [88] 9.2.2.1-1	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission participant requesting information about its position in the transmission request queue.	RFC 3550 [3], Appendix 6 shows how to generate a random 32-bit identifier	
User ID	Not Present			ON-NETWORK

Derivation Path: TS 24.581 [88] Table 9.2.11-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
User ID			TS 24.581 [88] 9.2.3.8	OFF-NETWORK
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
Track Info	Not present	The MCVideo call does not involve a non-controlling MCVideo function	TS 24.581 [88] 9.2.3.13	

5.5.11.1.4 Receive Media Request

Table: 5.5.11.1.4-1 Receive Media Request

Derivation Path: TS 24.581 [88] Table 9.2.14-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Subtype	“00100”	Server → client	TS 24.581 [88] 9.2.2.1-1	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission participant requesting the reception of the media from another user.	RFC 3550 [3], Appendix 6 shows how to generate a random 32-bit identifier	
User ID		The User ID field is used to carry the identity of the user who is requesting the reception of the media Note: If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
User ID field ID	"00000110"			

Derivation Path: TS 24.581 [88] Table 9.2.14-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
User ID length	a binary value	value is a binary value and includes the value indicating the length in octets of the <User ID> value item except padding.	TS 24.581 [88] 9.2.3.8	
User ID	px_MCVideo_ID_User_A		TS 24.581 [88] Table 9.2.3.8-2	
SSRC of transmitter	The SSRC of the user transmitting the media	The SSRC of transmitter field carries the SSRC of the user transmitting the media		
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.		
Transmission Indicator		The Transmission Indicator contains additional information about a received transmission control message. The <Transmission Indicator field ID> value is a binary value and is set according to table 9.2.3.1-1. The <Transmission Indicator Length> value is a binary value and has the value '2'. The <Transmission Indicator> value is a 16 bit bit-map. When set to 1 these meanings apply: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call	TS 24.581 [88] 9.2.3.11	
Transmission Indicator field ID	“00001101”	An 8-bit binary value set according to TS 24.581 [88] 9.2.3.1-1.	TS 24.581 [88] Table 9.2.3.1-1-1	
Transmission Indicator Length	“00000010”	An 8-bit binary value (2 in binary)	TS 24.581 [88] Table 9.2.3.1-1-1	
Transmission Indicator	"1000000000000000"	A 16 bit bit-map	TS 24.581 [88] Table 9.2.3.11-2	

Derivation Path: TS 24.581 [88] Table 9.2.14-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Reception Priority		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		
Reception Priority field ID	"00010011"	Uniquely identifies the instance of the Reception Priority Field		
Reception Priority length	“00000010”	Indicates the total length in octets of the < Reception Priority> value item and the spare bits.	TS 24.581 [88] 9.2.3.19	
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.	TS 24.581 [88] 9.2.3.19	
Track Info	Not present	The MCVideo call does not involve a non-controlling MCVideo function	TS 24.581 [88] 9.2.3.13	

5.5.11.1.5 Transmission Cancel Request

Table: 5.5.11.1.5-1 Transmission Cancel Request

Derivation Path: TS 24.581 [88] Table 9.2.17-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Subtype	“00101”	Server → client	TS 24.581 [88] 9.2.2.1-1	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission control server.	RFC 3550 [3], Appendix 6 shows how to generate a random 32-bit identifier	
User ID			TS 24.581 [88] 9.2.3.8	
User ID field ID	"00000110"			

Derivation Path: TS 24.581 [88] Table 9.2.17-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.		

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**
Subtype	“00111”	Transmission control messages sent by the transmission control participant to the transmission control server	TC 24.581 [88] clause 9.2.7 and Table 9.2.2.1-1	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission participant requesting the reception of the media from another user.	IETF RFC 3550 [3].	
Remote ID		Carries the identity of the user whose media transmission is requested.	TC 24.581 [88] clause 9.3.2.8	
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			

Derivation Path: TS 24.581 [88] Table 9.2.22-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
User ID	px_MCVideo_ID_User_B	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
User ID			TC 24.581 [88] clause 9.3.2.8	
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.		

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**
Subtype	“01000”	Transmission control messages sent by the transmission control participant to the transmission control server	TC 24.581 [88] clause 9.2.7 and Table 9.2.2.1-1	
SSRC	The SSRC of the message sender.	The SSRC field carries the SSRC of the transmission participant requesting the reception of the media from another user.	IETF RFC 3550 [3].	

Derivation Path: TS 24.581 [88] Table 9.2.24-1				
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 identity of the user whose media transmission is requested for cancellation.	TC 24.581 [88] clause 9.3.2.8	
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.		

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**
Subtype	"00000"	Server → client	TS 24.581 [88] 9.2.2.1-2	
SSRC	The SSRC of the message sender	The SSRC of the Transmission Control server for on-network and transmission arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].		
name	MCV1	Transmission Control messages sent by the transmission control server and transmission control participant		
Duration				
Duration field ID	"00000001"			
Duration length	"10"	value is a binary value and has the value '2' indicating the total length in octets of the <Duration> value item		
Duration	"00000000 10000000"	128 sec (an arbitrary value)		
SSRC of granted transmission participant	The SSRC of the intended recipient of the message	Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].		
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			ON-NETWORK
User ID				OFF-NETWORK
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			

Derivation Path: TS 24.581 [88] Table 9.2.5-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
Queue Size	Not present			ON-NETWORK
Queue Size	"0"	the number of queued MCVideo clients in the MCVideo call		OFF-NETWORK
SSRC of queued floor participant	Not present			
Queued User ID	Not present			
Queue Info	Not present			
Transmission Indicator				
Transmission Indicator field ID	“00001101”	An 8-bit binary value set according to TS 24.581 [88] 9.2.3.1-1.	TS 24.581 [88] Table 9.2.3.1-1-1	
Transmission Indicator Length	“00000010”	An 8-bit binary value (2 in binary)	TS 24.581 [88] Table 9.2.3.1-1-1	
Transmission Indicator	"1000000000000000"	A 16 bit bit-map	TS 24.581 [88] Table 9.2.3.11-2	

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**
Subtype	“00001”	Server → client	TS 24.581 [88] 9.2.2.1-2	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission control server.	RFC 3550 [3], Appendix 6 shows how to generate a random 32-bit identifier	
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] 9.2.3.4	
Reject Cause field ID	"00000010"		TS 24.581 [88] Table 9.2.3.1-1	

Derivation Path: TS 24.581 [88] Table 9.2.6-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Reject Cause length		The <Reject Cause length> value is a binary value and indicates the total length in octets of the <Reject Cause > value and the <Reject Phrase> value items excluding any padding octets. If the length field is set to '2', there is no <Reject Phrase> value in the Reject Cause field. If the length of the <Reject Cause> value is not (2 + multiple of 4) bytes, the Reject Cause field is padded to (2 + multiple of 4) bytes. The value of the padding bytes is set to zero. The padding bytes are ignored by the receiver.		

Reject Cause	"255"	Cause #1 - Transmission limit reached The <Reject cause> value set to '1' indicates that the number of transmitters have reached maximum. Cause #2 - Internal transmission control server error The <Reject cause> value set to '2' indicates that the transmission control server cannot grant the transmission request due to an internal error. Cause #3 - Only one participant The <Reject cause> value set to '3' indicates that the transmission control server cannot grant the transmission request, because the requesting party is the only participant in the MCVideo session. Cause #4 - Retry-after timer has not expired The <Reject cause> value set to '4' indicates that the transmission control server cannot grant the transmission request, because timer T9 (Retry-after) has not expired after permission to send media has been revoked. Cause #5 - Receive only The <Reject cause> value set to '5' indicates that the transmission control server cannot grant the transmission request, because the requesting party only has receive privilege. Cause #6 - No resources available The <Reject cause> value set to '6' indicates that the transmission control server cannot	TS 24.581 [88] 9.2.6.2	

Derivation Path: TS 24.581 [88] Table 9.2.6-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
		grant the transmission request due to congestion. Cause #255 - Other reason The <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.		
Reject Cause Phrase	"Other reason"	A text string encoded the text string in the SDES item CNAME.	IETF RFC 3550 [3]	
User ID	Not present			ON-NETWORK
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] 9.2.3.8	OFF-NETWORK
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		

Derivation Path: TS 24.581 [88] Table 9.2.6-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Indicator		The Transmission Indicator contains additional information about a received transmission control message. The <Transmission Indicator field ID> value is a binary value and is set according to table 9.2.3.1-1. The <Transmission Indicator Length> value is a binary value and has the value '2'. The <Transmission Indicator> value is a 16 bit bit-map. When set to 1 these meanings apply: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call	TS 24.581 [88] 9.2.3.11	
Transmission Indicator field ID	"00001101"		TC 24.581 [88] clause 9.2.3.1.1	
Transmission Indicator Length	"10"	value is a binary value and has the value '2'		

Derivation Path: TS 24.581 [88] Table 9.2.6-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Indicator	"1000000000000000"	Contains additional information about a received transmission control message. It is a 16 bit bit-map named as shown in Table 9.2.3.11.2 (a thru P). When set to 1, the bit has the following meaning: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call NOTE 1: The indicators C, D and E are only informative. There are no procedures specified for the C, D and E indicators in this release of the present document and the use of the indicators are implementation specific. Bits F to P are reserved for future use and are set to 0. There can be more than one bit set to 1 at the same time. The local policy in the transmission control server decides which combinations are possible and the priority of the indications.	TC 24.581 [88] clause 9.2.3.1.1	

5.5.11.2.3 Transmission Arbitration Taken

Table: 5.5.11.2.3-1 Transmission Arbitration Taken

Derivation Path: TS 24.581 [88] Table 9.2.8-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Subtype	“00010”	Server → client	TS 24.581 [88] 9.2.2.1-2	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission control server.	RFC 3550 [3], Appendix 6 shows how to generate a random 32-bit identifier	
Granted Party's Identity		Identifies the MCVideo user that is granted to send media.	TS 24.581 [88] 9.2.3.6	
Granted Party's Identity Field ID	"00000100"		TS 24.581 [88] 9.2.3.1.1	

Derivation Path: TS 24.581 [88] Table 9.2.8-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Granted Party's Identity length	value is a binary value and includes the value indicating the length in octets of the <User ID> value item except padding		TS 24.581 [88] 9.2.3.8	
Granted Party's Identity	px_MCVideo_ID_User_A	If the length of the <Granted Party's> value is not (2 + multiple of 4) bytes, the Granted Party's Identity field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is set to zero. The padding bytes are ignored by the receiver.	TS 24.581 [88] 9.2.3.8	
Permission to Request the Transmission		Indicates whether receiving parties are allowed to request the transmission.	TS 24.581 [88] 9.2.3.8	
Permission to Request the Transmission Field ID	"00000101"		TS 24.581 [88] 9.2.3.1.1	
Permission to Request the Transmission length	"10"	The <Permission to Request the Transmission length> value is a binary value and has the value '2' indicating the total length in octets of the <Duration> value item.	TS 24.581 [88] 9.2.3.7	
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	TS 24.581 [88] 9.2.3.7	
User ID	Not Present			ON-NETWORK
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] 9.2.3.8	OFF-NETWORK
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			

Derivation Path: TS 24.581 [88] Table 9.2.8-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
Message Sequence Number		Used to bind a number of Transmission Arbitration Taken or bind a number of Transmission Idle messages together	TS 24.581 [88] 9.2.3.9	
Message Sequence Number field ID	"00001000"		TS 24.581 [88] 9.2.3.1.1	
Message Sequence Number length	"10"	Has the value '2' indicating the total length in octets of the <Message Sequence Number> value item.		
Message Sequence Number	"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		The Transmission Indicator contains additional information about a received transmission control message. The <Transmission Indicator field ID> value is a binary value and is set according to table 9.2.3.1-1. The <Transmission Indicator Length> value is a binary value and has the value '2'. The <Transmission Indicator> value is a 16 bit bit-map. When set to 1 these meanings apply: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call	TS 24.581 [88] 9.2.3.1.1	

Derivation Path: TS 24.581 [88] Table 9.2.8-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Indicator field ID	"00001101"		TC 24.581 [88] clause 9.2.3.1.1	
Transmission Indicator Length	"10"	value is a binary value and has the value '2'		
Transmission Indicator	"1000000000000000"	Contains additional information about a received transmission control message. It is a 16 bit bit-map named as shown in Table 9.2.3.11.2 (a thru P). When set to 1, the bit has the following meaning: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call NOTE 1: The indicators C, D and E are only informative. There are no procedures specified for the C, D and E indicators in this release of the present document and the use of the indicators are implementation specific. Bits F to P are reserved for future use and are set to 0. There can be more than one bit set to 1 at the same time. The local policy in the transmission control server decides which combinations are possible and the priority of the indications.	TC 24.581 [88] clause 9.2.3.1.1	
SSRC of Granted Transmission Participant	The SSRC of the intended recipient of the message		IETF RFC 3550 [3]	

5.5.11.2.4 Transmission Arbitration Release

Table: 5.5.11.2.4-1 Transmission Arbitration Release

Derivation Path: TS 24.581 [88] Table 9.2.9-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Subtype	“00010”	Server → client	TS 24.581 [88] 9.2.2.1-2	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission control server.	RFC 3550 [3], Appendix 6 shows how to generate a random 32-bit identifier	
Granted Party's Identity		Identifies the MCVideo user that is granted to send media.	TS 24.581 [88] 9.2.3.6	
Granted Party's Identity Field ID	"00000100"		TS 24.581 [88] 9.2.3.1.1	
Granted Party's Identity length	value is a binary value and includes the value indicating the length in octets of the <User ID> value item except padding		TS 24.581 [88] 9.2.3.8	
Granted Party's Identity	px_MCVideo_ID_User_A	If the length of the <Granted Party's> value is not (2 + multiple of 4) bytes, the Granted Party's Identity field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is set to zero. The padding bytes are ignored by the receiver.	TS 24.581 [88] 9.2.3.8	
Permission to Request the Transmission		Indicates whether receiving parties are allowed to request the transmission.	TS 24.581 [88] 9.2.3.8	
Permission to Request the Transmission Field ID	"00000101"		TS 24.581 [88] 9.2.3.1.1	
Permission to Request the Transmission length	"10"	The <Permission to Request the Transmission length> value is a binary value and has the value '2' indicating the total length in octets of the <Duration> value item.	TS 24.581 [88] 9.2.3.7	
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	TS 24.581 [88] 9.2.3.7	
User ID	Not Present			ON-NETWORK

Derivation Path: TS 24.581 [88] Table 9.2.9-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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] 9.2.3.8	OFF-NETWORK
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
Message Sequence Number		Used to bind a number of Transmission Arbitration Taken or bind a number of Transmission Idle messages together	TS 24.581 [88] 9.2.3.9	
Message Sequence Number field ID	"00001000"		TS 24.581 [88] 9.2.3.1.1	
Message Sequence Number length	"10"	Has the value '2' indicating the total length in octets of the <Message Sequence Number> value item.		
Message Sequence Number	"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.		

Derivation Path: TS 24.581 [88] Table 9.2.9-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Indicator		The Transmission Indicator contains additional information about a received transmission control message. The <Transmission Indicator field ID> value is a binary value and is set according to table 9.2.3.1-1. The <Transmission Indicator Length> value is a binary value and has the value '2'. The <Transmission Indicator> value is a 16 bit bit-map. When set to 1 these meanings apply: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call	TS 24.581 [88] 9.2.3.1.1	
Transmission Indicator field ID	"00001101"		TC 24.581 [88] clause 9.2.3.1.1	
Transmission Indicator Length	"10"	value is a binary value and has the value '2'		

Derivation Path: TS 24.581 [88] Table 9.2.9-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Indicator	"1000000000000000"	Contains additional information about a received transmission control message. It is a 16 bit bit-map named as shown in Table 9.2.3.11.2 (a thru P). When set to 1, the bit has the following meaning: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call NOTE 1: The indicators C, D and E are only informative. There are no procedures specified for the C, D and E indicators in this release of the present document and the use of the indicators are implementation specific. Bits F to P are reserved for future use and are set to 0. There can be more than one bit set to 1 at the same time. The local policy in the transmission control server decides which combinations are possible and the priority of the indications.	TC 24.581 [88] clause 9.2.3.1.1	
SSRC of Granted Transmission Participant	The SSRC of the intended recipient of the message		IETF RFC 3550 [3]	

5.5.11.2.5 Transmission Revoked

Table: 5.5.11.2.5-1 Transmission Revoked

Derivation Path: TS 24.581 [88] Table 9.2.10-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Subtype	“00100”	Server → client	TS 24.581 [88] 9.2.2.1-2	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission control server.	RFC 3550 [3], Appendix 6 shows how to generate a random 32-bit identifier	

Derivation Path: TS 24.581 [88] Table 9.2.10-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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] 9.2.3.4	
Reject Cause field ID	"00000010"		TS 24.581 [88] Table 9.2.3.1-1	
Reject Cause length		The <Reject Cause length> value is a binary value and indicates the total length in octets of the <Reject Cause > value and the <Reject Phrase> value items excluding any padding octets. If the length field is set to '2', there is no <Reject Phrase> value in the Reject Cause field. If the length of the <Reject Cause> value is not (2 + multiple of 4) bytes, the Reject Cause field is padded to (2 + multiple of 4) bytes. The value of the padding bytes is set to zero. The padding bytes are ignored by the receiver.		

Reject Cause Value	"7"	Cause #1 – Only one MCVideo client The <Reject Cause> value set to '1' indicates that the MCVideo client is the only MCVideo client in the MCVideo session or the only participant connected to a transmission control server. No additional information included. Cause#2 – Media burst too long The <Reject Cause> value set to '2' indicates that the MCVideo User has transmitted too long (e.g., the stop-transmission timer has expired). No additional information included. Cause#3 - No permission to send a Media Burst The <Reject Cause> value set to '3' indicates that the MCVideo client does not have permission to send media. No additional information is included. Cause#4 - Media Burst pre-empted The <Reject Cause> value set to '4' indicates that the MCVideo client 's permission to send a media is being pre-empted. No additional information is included. Cause#5 - Terminate the RTP stream The <Reject Cause> value set to '5' indicates that the MCVideo client's permission to send a media is being revoked. No additional information is included. Cause#6 - No resources available The <Reject Cause> value set to '6' indicates that the transmission control server can no longer grant MCVideo client to send media due to congestion. No additional information is included.	TS 24.581 [88] 9.2.10.2	

Derivation Path: TS 24.581 [88] Table 9.2.10-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
		Cause#7 - Queue the transmission 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. Cause #8 - No receiving participant The <Reject cause> value set to '8' indicates that the MCVideo client's permission to send a media is being revoked because there is no participant to receive the stream. Cause#255 – Other reason The <Reject Cause> value set to '255' indicates that the transmission control server can no longer grant MCVideo client to send media due to the transmission control server local policy. No additional information is included.		
Reject Cause Phrase	"Queue the transmission"	A text string encoded the text string in the SDES item CNAME.	TS 24.581 [88] 9.2.10.2	

Derivation Path: TS 24.581 [88] Table 9.2.10-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Indicator		The Transmission Indicator contains additional information about a received transmission control message. The <Transmission Indicator field ID> value is a binary value and is set according to table 9.2.3.1-1. The <Transmission Indicator Length> value is a binary value and has the value '2'. The <Transmission Indicator> value is a 16 bit bit-map. When set to 1 these meanings apply: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call	TS 24.581 [88] 9.2.3.11	
Transmission Indicator field ID	"00001101"		TC 24.581 [88] clause 9.2.3.1.1	
Transmission Indicator Length	"10"	value is a binary value and has the value '2'		

Derivation Path: TS 24.581 [88] Table 9.2.10-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Indicator	"1000000000000000"	Contains additional information about a received transmission control message. It is a 16 bit bit-map named as shown in Table 9.2.3.11.2 (a thru P). When set to 1, the bit has the following meaning: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call NOTE 1: The indicators C, D and E are only informative. There are no procedures specified for the C, D and E indicators in this release of the present document and the use of the indicators are implementation specific. Bits F to P are reserved for future use and are set to 0. There can be more than one bit set to 1 at the same time. The local policy in the transmission control server decides which combinations are possible and the priority of the indications.	TC 24.581 [88] clause 9.2.3.1.1	

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**
Subtype	"00101"	Server → client	TS 24.581 [88] 9.2.2.1-1	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission control server.	RFC 3550 [3], Appendix 6 shows how to generate a random 32-bit identifier	
User ID	Not present			ON-NETWORK
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] 9.2.3.8	OFF-NETWORK
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
SSRC of Queued Transmission Participant	Not present			ON-NETWORK
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 [3].	OFF-NETWORK
Queued User ID	Not present			ON-NETWORK
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] 9.2.3.8	OFF-NETWORK

Derivation Path: TS 24.581 [88] Table 9.2.12-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Queue Info		Defines the queue position and granted transmission control priority in the queue.	TS 24.581 [88] 9.2.3.5	
Queue Info field ID	"00000011"		TS 24.581 [88] 9.2.3.1	
Queue Info length	"10"	value is a binary value and has the value '2'		
Queue Position Info	"0000001"	value is a binary value. The <Queue Position Info> value has the value '254' if the MCVideo client is not queued. The <Queue Position Info> value has the max value ('255') if the MCVideo client is queued but the MCVideo server is unable to determine the queue position or if MCVideo server policy is not to release information of the queue position to the MCVideo client.		
Queue Priority Level	"00000000"	value consists of 8 bit parameter giving the transmission priority ('0' to '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.	TS 24.581 [88] 9.2.3.2	
Track Info	Not present	The MCVideo call does not involve a non-controlling MCVideo function	TS 24.581 [88] 9.2.3.13	
Transmission Control Indicator			TS 24.581 [88] 9.2.3.11	
Transmission Indicator field ID	"00001101"		TC 24.581 [88] clause 9.2.3.1.1	
Transmission Indicator Length	"10"	value is a binary value and has the value '2'		

Derivation Path: TS 24.581 [88] Table 9.2.12-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Indicator	"1000000000000000"	Contains additional information about a received transmission control message. It is a 16 bit bit-map named as shown in Table 9.2.3.11.2 (a thru P). When set to 1, the bit has the following meaning: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call NOTE 1: The indicators C, D and E are only informative. There are no procedures specified for the C, D and E indicators in this release of the present document and the use of the indicators are implementation specific. Bits F to P are reserved for future use and are set to 0. There can be more than one bit set to 1 at the same time. The local policy in the transmission control server decides which combinations are possible and the priority of the indications.	TC 24.581 [88] clause 9.2.3.1.1	

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**
Subtype	“00110”	Server → client	TS 24.581 [88] 9.2.2.1-2	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission control server	RFC 3550 [3], Appendix 6 shows how to generate a random 32-bit identifier	

Derivation Path: TS 24.581 [88] Table 9.2.13-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
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] 9.2.3.8	
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
SSRC of transmitter	The SSRC of the user transmitting the media	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] 9.2.3.8	
Permission to Request the Transmission Field ID	"00000101"		TS 24.581 [88] 9.2.3.1.1	
Permission to Request the Transmission length	"10"	The <Permission to Request the Transmission length> value is a binary value and has the value '2' indicating the total length in octets of the <Duration> value item.	TS 24.581 [88] 9.2.3.7	
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	TS 24.581 [88] 9.2.3.7	

Derivation Path: TS 24.581 [88] Table 9.2.13-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Indicator		The Transmission Indicator contains additional information about a received transmission control message. The <Transmission Indicator field ID> value is a binary value and is set according to table 9.2.3.1-1. The <Transmission Indicator Length> value is a binary value and has the value '2'. The <Transmission Indicator> value is a 16 bit bit-map. When set to 1 these meanings apply: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call	TS 24.581 [88] 9.2.3.1.1	
Transmission Indicator field ID	"00001101"		TC 24.581 [88] clause 9.2.3.1.1	
Transmission Indicator Length	"10"	value is a binary value and has the value '2'		

Derivation Path: TS 24.581 [88] Table 9.2.13-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Indicator	"1000000000000000"	Contains additional information about a received transmission control message. It is a 16 bit bit-map named as shown in Table 9.2.3.11.2 (a thru P). When set to 1, the bit has the following meaning: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call NOTE 1: The indicators C, D and E are only informative. There are no procedures specified for the C, D and E indicators in this release of the present document and the use of the indicators are implementation specific. Bits F to P are reserved for future use and are set to 0. There can be more than one bit set to 1 at the same time. The local policy in the transmission control server decides which combinations are possible and the priority of the indications.	TC 24.581 [88] clause 9.2.3.1.1	
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.	TS 24.581 [88] 9.2.3	
Track Info	Not present	The MCVideo call does not involve a non-controlling MCVideo function	TS 24.581 [88] 9.2.3.13	

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**
Subtype	“00111”	Server → client	TS 24.581 [88] 9.2.2.1-1	

Derivation Path: TS 24.581 [88] Table 9.2.15-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission participant requesting the reception of the media from another user.	RFC 3550 [3], Appendix 6 shows how to generate a random 32-bit identifier	
Result		Indicates whether media reception is possible as per the request		
Result field ID	"00001111"		TS 24.581 [88] Table 9.2.3.1-1	
Result length	"2"	value is a binary value and has the value '2' indicating the total length in octets of the <Result> value item and the spare bits	TS 24.581 [88] 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.	TS 24.581 [88] 9.2.3.17	
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	The SSRC of the user transmitting the media	The SSRC of transmitter field carries the SSRC of the user transmitting the media		
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.	TS 24.581 [88] 9.2.3.x	

Derivation Path: TS 24.581 [88] Table 9.2.15-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Indicator		The Transmission Indicator contains additional information about a received transmission control message. The <Transmission Indicator field ID> value is a binary value and is set according to table 9.2.3.1-1. The <Transmission Indicator Length> value is a binary value and has the value '2'. The <Transmission Indicator> value is a 16 bit bit-map. When set to 1 these meanings apply: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call	TS 24.581 [88] 9.2.3.11	
Transmission Indicator field ID	“00001101”	An 8-bit binary value set according to TS 24.581 [88] 9.2.3.1-1.	TS 24.581 [88] Table 9.2.3.1-1-1 Transmission Indicator Length	
Transmission Indicator Length	“00000010”	An 8-bit binary value (2 in binary)	TS 24.581 [88] Table 9.2.3.1-1-1	
Transmission Indicator	"1000000000000000"	A 16 bit bit-map	TS 24.581 [88] Table 9.2.3.11-2	

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**
Subtype	"01000"	Server → client	TS 24.581 [88] 9.2.2.1-2	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission control server	RFC 3550 [3], Appendix 6 shows how to generate a random 32-bit identifier	
User ID		The User ID field carries the MCVideo ID of the user transmitting the media. Note: If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.	TS 24.581 [88] 9.2.3.8	
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.	TS 24.581 [88] 9.2.3	

5.5.11.2.10 Transmission Cancel Response

Table 5.5.11.2.10-1 Transmission Cancel Response

Derivation Path: TS 24.581 [88] Table 9.2.18-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Subtype	"01001"	Server → client	TS 24.581 [88] 9.2.2.1-2 and clause 9.2.18	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission control server.	RFC 3550 [3], Appendix 6 shows how to generate a random 32-bit identifier	
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.	TS 24.581 [88] 9.2.3.x	

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**
Subtype	"01010"	Server → client	TS 24.581 [88] 9.2.2.1-2 and clause 9.2.19	
SSRC	The SSRC of the message sender	The SSRC of the Transmission Control server for on-network and transmission arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].		
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.	TS 24.581 [88] 9.2.3.x	

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**
Subtype	"01011"	Server → client	TS 24.581 [88] 9.2.2.1-2 and clause 9.2.20	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission control server. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].		
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.	TS 24.581 [88] 9.2.3.x	

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**
Subtype	"01100"	Server → client	TS 24.581 [88] 9.2.2.1-2 and clause 9.2.20	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission participant requesting the reception of the media from another user. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].		
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.	TS 24.581 [88] 9.2.3.x	

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**
Subtype	“01101”	Server → client	TS 24.581 [88] 9.2.2.1-2 and clause 9.2.20	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission participant requesting the reception of the media from another user. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].		
User ID	16-bit binary value	Carries the identity of the user who is requesting the reception of the media.	TS 24.581 [88] 9.2.3.8	
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
SSRC of transmitter	The SSRC of the user transmitting the media	The SSRC of transmitter field carries the SSRC of the user transmitting the media		
Overriding ID	16-bit binary value	Carries the identity of the user of the overriding media.	TS 24.581 [88] 9.2.3.8	
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			

Derivation Path: TS 24.581 [88] Table 9.2.28-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
User ID	px_MCVideo_ID_User_B	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identifies the communication of overriding media within a media multiplex.	TS 24.581 [88] 9.2.3.x	
Overridden ID	16-bit binary value	Carries the identity of the user of the overridden media.	TS 24.581 [88] 9.2.3.8	
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identifies the communication of overriding media within a media multiplex.	TS 24.581 [88] 9.2.3.x	

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**
Subtype	“01110”	Server → client	TS 24.581 [88] 9.2.2.1-2 and clause 9.2.20	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission control server. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].		
User ID		Carries the identity of the user whose media transmission has been released	TS 24.581 [88] 9.2.3.8	
User ID field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
SSRC of transmitter	The SSRC of the user transmitting the media	The SSRC of transmitter field carries the SSRC of the user transmitting the media		
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.	TS 24.581 [88] 9.2.3.x	

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**
Subtype	“01111”		TS 24.581 [88] 9.2.2.1-2	

Derivation Path: TS 24.581 [88] Table 9.2.30-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
SSRC	The SSRC of the message sender	The SSRC of the Transmission Control server for on-network and transmission arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].		
name	“MCV1”	Transmission Control messages sent by the Transmission Control Server and the Transmission Control Participant.		
Message Sequence Number				
Message Sequence Number field ID	"00001000"			
Message Sequence Number length	"10"	value is a binary value and has the value '2' indicating the total length in octets of the <Message Sequence Number> value item.		
Message Sequence Number	"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				
Transmission Indicator field ID	"00001101"		TC 24.581 [88] clause 9.2.3.1 .1	
Transmission Indicator Length	"10"	value is a binary value and has the value '2'		

Derivation Path: TS 24.581 [88] Table 9.2.30-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transmission Indicator	"1000000000000000"	Contains additional information about a received transmission control message. It is a 16 bit bit-map named as shown in Table 9.2.3.11.2 (a thru P). When set to 1, the bit has the following meaning: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call NOTE 1: The indicators C, D and E are only informative. There are no procedures specified for the C, D and E indicators in this release of the present document and the use of the indicators are implementation specific. Bits F to P are reserved for future use and are set to 0. There can be more than one bit set to 1 at the same time. The local policy in the transmission control server decides which combinations are possible and the priority of the indications.	TC 24.581 [88] clause 9.2.3.1 .1	

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**
Subtype	“00000”		TS 24.581 [88] 9.2.2.1-2	

Derivation Path: TS 24.581 [88] Table 9.2.20-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
SSRC	The SSRC of the message sender	The SSRC of the Transmission Control server for on-network and transmission arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].		
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 field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
Media ID	Not Present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.		

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**
Subtype	"00001"		TS 24.581 [88] 9.2.2.1-2	
SSRC	The SSRC of the message sender	The SSRC of the Transmission Control server for on-network and transmission arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].		
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 field ID	"00000110"			
User ID length	a binary value that includes the value indicating the length in octets of the <User ID> value item except padding.			
User ID	px_MCVideo_ID_User_A	If the length of the <User ID> value is not (2 + multiple of 4) bytes User ID field shall be padded to (2 + multiple of 4) bytes. The value of the padding bytes is to zero. The padding bytes are ignored by the receiver.		
Media ID	Not Present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.		

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**
Subtype	"00010"	Server → client	TS 24.581 [88] 9.2.2.1-3	

Derivation Path: TS 24.581 [88] Table 9.2.26-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission control server or the transmission control participant requesting the end of reception of the media from another user.	RFC 3550 [3], Appendix 6 shows how to generate a random 32-bit identifier	
SSRC of transmitter	The SSRC of the user transmitting the media	The SSRC of transmitter field carries the SSRC of the user transmitting the media		
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.	TS 24.581 [88] 9.2.3.x	
Transmission Indicator		The Transmission Indicator contains additional information about a received transmission control message. The <Transmission Indicator field ID> value is a binary value and is set according to table 9.2.3.1-1. The <Transmission Indicator Length> value is a binary value and has the value '2'. The <Transmission Indicator> value is a 16 bit bit-map. When set to 1 these meanings apply: A = Normal call B = Broadcast group call C = System call D = Emergency call E = Imminent peril call	TS 24.581 [88] 9.2.3.11	
Transmission Indicator field ID	“00001101”	An 8-bit binary value set according to TS 24.581 [88] 9.2.3.1-1.	TS 24.581 [88] Table 9.2.3.1-1-1	
Transmission Indicator Length	“00000010”	An 8-bit binary value (2 in binary)	TS 24.581 [88] Table 9.2.3.1-1-1	
Transmission Indicator	Any allowed value	A 16 bit bit-map	TS 24.581 [88] Table 9.2.3.11-2	

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**
Subtype	"00011"	Server → client	TS 24.581 [88] 9.2.2.1-3	
SSRC	The SSRC of the message sender	The SSRC field carries the SSRC of the transmission control server or the transmission control participant requesting the end of reception of the media from another user.	RFC 3550 [3], Appendix 6 shows how to generate a random 32-bit identifier	
SSRC of transmitter	The SSRC of the user transmitting the media	The SSRC of transmitter field carries the SSRC of the user transmitting the media		
Media ID	Not present	The Media ID field is present only if media multiplexing is used. The Media ID field identified a media flow within a media multiplex.	TS 24.581 [88] 9.2.3.x	

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**
Subtype	"00100"			
SSRC	The SSRC of the message sender	The SSRC of the Transmission Control server for on-network and transmission arbitrator for off-network. Notation in accordance with clause 5.5.6.1. Coded as specified in IETF RFC 3550 [76].		
Source			TS 24.581 [88] 9.2.3.12	
Source field ID	"00001010"			
Source length	"10"	value is a binary value and has the value 2 indicating the total length in octets of the <Source> value item		

Derivation Path: TS 24.581 [88] Table 9.2.31-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Source	"2"	The <Source> value is a 16 bit binary value where: '0' the transmission participant is the source '1' the participating MCVideo function is the source '2' the controlling MCVideo function is the source '3' the non-controlling MCVideo function is the source All other values are reserved for future use		
Message name			TS 24.581 [88] 9.2.3.18	
Message Name field ID	"00010000"			
Message Name Length	"110"	value is a binary value and has the value '6'.		
Message Name	the message name of the received message	value is as coded as an ascii name field		
Message type			TS 24.581 [88] 9.2.3.10	
Message Type field ID	"00001100"			
Message Type Length	"10"	value is a binary value and has the value '2'		
Message Type	"000"<the subtype of the received message>	value is an 8 bit binary value containing the binary value consisting of the 5 bit message subtype as coded in table 9.2.2.1-1, table 9.2.2.1-2 and table 9.2.2.1-3 (including the first bit (used by some transmission control messages to indicate that a Transmission control Ack message is requested) of the five bit subtype) preceded by "000".		

5.5.12 MSRP Messages for MCData

5.5.12.1 MSRP SEND

5.5.12.1.1 MSRP SEND from the UE

- MSRP SEND from the UE with No Chunking Used

Table 5.5.12.1-1: MSRP SEND from the UE

Derivation Path: RFC 4975 [X]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transaction Identifier				
value	any allowed value			
To-Path				
value	px_MSRP_URI_SS_ID			
From-Path				
value	px_MSRP_URI_A_ID			
Message-ID				
value	any allowed value	If chunking is done: The message ID corresponds to the whole message, so the receiver can also use it to reassemble the message and tell which chunks belong with which message.		
Byte-Range		The Byte-Range header field value contains a starting value (range-start) followed by a "-", an ending value (range-end) followed by a "/", and finally the total length. The first octet in the message has a position of one, rather than a zero. The Byte-Range header field identifies the portion of the message carried in this chunk and the total size of the message		
range-start	any allowed value			
range-end	any allowed value			
total length	any allowed value			
Content-Type			TS 24.582 [89] , clause 6.4	
media-type	"multipart/mixed"			
MIME body part		**SDS SIGNALLING PAYLOAD**		
MIME-Content-Type	"application/vnd.3gpp. mcdata-signalling"			
MIME-part-body	As described in Table 5.5.3.8.1-1			
MIME body part		**SDS DATA PAYLOAD**		
MIME-Content-Type	"application/vnd.3gpp. mcdata-payload"			
MIME-part-body	As described in Table 5.5.3.9-1			
End-line	"-------"<Transaction Identifier value>"$"	an end-line of seven hyphens, the transaction identifier, and a "$" to indicate that this request contains the end of a complete message		

- Empty MSRP SEND from the UE for Binding

Table 5.5.12.1-2: Empty MSRP SEND from the UE for Binding

Derivation Path: RFC 4975 [X]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transaction Identifier				
value	any allowed value			
To-Path				
value	px_MSRP_URI_SS_ID			
From-Path				
value	px_MSRP_URI_A_ID			
Message-ID				
value	any allowed value			
Byte-Range		The Byte-Range header field value contains a starting value (range-start) followed by a "-", an ending value (range-end) followed by a "/", and finally the total length. The first octet in the message has a position of one, rather than a zero. The Byte-Range header field identifies the portion of the message carried in this chunk and the total size of the message		
range-start	"1-"			
range-end	"0/"			
total length	"0"			
Content-Type	not present			
End-line	"-------"<Transaction Identifier value>"$"			

- MSRP SEND from the UE with Chunking Used

Table 5.5.12.1-3: MSRP SEND from the UE with Chunking Used

Derivation Path: RFC 4975 [X]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transaction Identifier				
value	any allowed value			
To-Path				
value	px_MSRP_URI_SS_ID			
From-Path				
value	px_MSRP_URI_A_ID			
Message-ID				
value	any allowed value	If chunking is done: The message ID corresponds to the whole message, so the receiver can also use it to reassemble the message and tell which chunks belong with which message.		
Byte-Range		The Byte-Range header field value contains a starting value (range-start) followed by a "-", an ending value (range-end) followed by a "/", and finally the total length. The first octet in the message has a position of one, rather than a zero. The Byte-Range header field identifies the portion of the message carried in this chunk and the total size of the message. Example: Byte-Range for Chunk 1 of 2: 1-2/8 Byte-Range for Chunk 2 of 2: 5-8/8		
range-start	<any allowed value>"-"			
range-end	<any allowed value>"/"	The range-end field SHOULD indicate the position of the last byte in the body, if known. It MUST take the value of "*" if the position is unknown, or if the request needs to be interruptible.		
total length	the total length			
Content-Type			TS 24.582 [89] , clause 6.4	
media-type	"multipart/mixed"			
MIME body part		**SDS SIGNALLING PAYLOAD**		
MIME-Content-Type	"application/vnd.3gpp. mcdata-signalling"			
MIME-part-body	As described in Table 5.5.3.8.1-1			
MIME body part		**SDS DATA PAYLOAD**		
MIME-Content-Type	"application/vnd.3gpp. mcdata-payload"			
MIME-part-body	As described in Table 5.5.3.9-1			

End-line	"-------"<Transaction Identifier value>"+"	an end-line of seven hyphens, the transaction identifier, and a "+" to indicate that this request is not the end of a complete message		

- MSRP SEND from the UE with Chunking Used – Last Chunk

Table 5.5.12.1-4: MSRP SEND from the UE with Chunking Used – Last Chunk

Derivation Path: RFC 4975 [X]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transaction Identifier				
value	any allowed value			
To-Path				
value	px_MSRP_URI_SS_ID			
From-Path				
value	px_MSRP_URI_A_ID			
Message-ID				
value	any allowed value	If chunking is done: The message ID corresponds to the whole message, so the receiver can also use it to reassemble the message and tell which chunks belong with which message.		
Byte-Range		The Byte-Range header field value contains a starting value (range-start) followed by a "-", an ending value (range-end) followed by a "/", and finally the total length. The first octet in the message has a position of one, rather than a zero. The Byte-Range header field identifies the portion of the message carried in this chunk and the total size of the message. Example: Byte-Range for Chunk 1 of 2: 1-2/8 Byte-Range for Chunk 2 of 2: 5-8/8		
range-start	<any allowed value>"-"			
range-end	<the total length>"/"	The range-end field for the last chunk of a message should be equal to the total length of the message.		

total length	the total length	The Byte-Range header field value contains a starting value (range-start) followed by a "-", an ending value (range-end) followed by a "/", and finally the total length. The first octet in the message has a position of one, rather than a zero. The Byte-Range header field identifies the portion of the message carried in this chunk and the total size of the message. Example: Byte-Range for Chunk 1 of 2: 1-2/8 Byte-Range for Chunk 2 of 2: 5-8/8		
Content-Type			TS 24.582 [89] , clause 6.4	
media-type	"multipart/mixed"			
MIME body part		**SDS SIGNALLING PAYLOAD**		
MIME-Content-Type	"application/vnd.3gpp. mcdata-signalling"			
MIME-part-body	As described in Table 5.5.3.8.1-1			
MIME body part		**SDS DATA PAYLOAD**		
MIME-Content-Type	"application/vnd.3gpp. mcdata-payload"			
MIME-part-body	As described in Table 5.5.3.9-1			
End-line	"-------"<Transaction Identifier value>"$"	an end-line of seven hyphens, the transaction identifier, and a "$" to indicate that this request contains the last chunk of a complete message		

5.5.12.1.2 MSRP SEND from the SS

- MSRP SEND from the SS

Table 5.5.12.1.2-1: MSRP SEND from the SS

Derivation Path: RFC 4975 [X]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transaction Identifier				
value	"a786hjs2"			
To-Path				
value	px_MSRP_URI_A_ID			
From-Path				
value	px_MSRP_URI_SS_ID			
Message-ID				
value	"87652491"			
Byte-Range		The Byte-Range header field value contains a starting value (range-start) followed by a "-", an ending value (range-end) followed by a "/", and finally the total length. The first octet in the message has a position of one, rather than a zero. The Byte-Range header field identifies the portion of the message carried in this chunk and the total size of the message		
range-start	1			
range-end	the length of the message in bytes			
total length	the length of the message in bytes			
Content-Type			TS 24.582 [89] , clause 6.4	
media-type	"multipart/mixed"			
MIME body part		SDS SIGNALLING PAYLOAD		
MIME-Content-Type	"application/vnd.3gpp. mcdata-signalling"			
MIME-part-body	As described in Table 5.5.3.8.2-1			
MIME body part		SDS DATA PAYLOAD		
MIME-Content-Type	"application/vnd.3gpp. mcdata-payload"			
MIME-part-body	As described in Table 5.5.3.9-2			
End-line	"-------a786hjs2$"	an end-line of seven hyphens, the transaction identifier, and a "$" to indicate that this request contains the end of a complete message		

- Empty MSRP SEND from the SS for Binding

Table 5.5.12.1.2-2: Empty MSRP SEND from the SS for Binding

Derivation Path: RFC 4975 [X]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transaction Identifier				
value	"a786hjs2"			
To-Path				
value	px_MSRP_URI_A_ID			
From-Path				
value	px_MSRP_URI_SS_ID			
Message-ID				
value	"87652491"			
Byte-Range		The Byte-Range header field value contains a starting value (range-start) followed by a "-", an ending value (range-end) followed by a "/", and finally the total length. The first octet in the message has a position of one, rather than a zero. The Byte-Range header field identifies the portion of the message carried in this chunk and the total size of the message		
range-start	1			
range-end	0			
total length	0			
Content-Type	not present			
End-line	"-------a786hjs2$"			

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 [X]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transaction Identifier				
value	same value as received in the MSRP SEND message			
To-Path				
value	px_MSRP_URI_SS_ID			
From-Path				
value	px_MSRP_URI_A_ID			
End-line	"-------"<Transaction Identifier value>"$"	an end-line of seven hyphens, the transaction identifier, and a "$" to indicate that this request contains the end of a complete message		

5.5.12.2.2 MSRP 200 (OK) from the SS

Table 5.5.12.2.2-1: MSRP 200 (OK) from the SS

Derivation Path: RFC 4975 [X]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Transaction Identifier				
value	same value as received in the MSRP SEND message			
To-Path				
value	px_MSRP_URI_A_ID			
From-Path				
value	px_MSRP_URI_SS_ID			
End-line	"-------"<Transaction Identifier value>"$"	an end-line of seven hyphens, the transaction identifier, and a "$" to indicate that this request contains the end of a complete message		

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

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	"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			

5.6 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 Plneary	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

History

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