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Technical Specification

3rd Generation Partnership Project;

Technical Specification Group Radio Access Network;

Mission Critical (MC) services over LTE;

Part 1: Common test environment

(Release 15)

** 

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

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

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

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

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

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

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

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

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

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

# 1 Scope

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

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

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

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

# 2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[17] Void

[18] Void

[19] Void

[20] Void

[21] Void

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

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

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

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

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

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

[28] Void

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

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

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

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

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

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

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

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

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

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

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

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

[41] Void

[42] Void

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

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

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

[46] Void

[47] Void

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

[49] Void

[50] Void

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[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

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

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

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

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

[123] IETF RFC 3986: "Uniform Resource Identifier (URI): Generic Syntax"

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

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

[126] 3GPP TS 23.179: "Functional architecture and information flows to support Mission Critical Push To Talk (MCPTT)"

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

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

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

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

# 3 Definitions, symbols and abbreviations

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

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

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

An MCPTT user is affiliated to an MCPTT group

An MCPTT user is affiliated to an MCPTT group at an MCPTT client

Affiliation status

Group identity

In-progress emergency private call state

In-progress imminent peril group state

MCPTT client ID

MCPTT emergency alert state

MCPTT emergency group state

MCPTT emergency group call state

MCPTT emergency private call state

MCPTT emergency private priority state

MCPTT imminent peril group call state

MCPTT imminent peril group state

MCPTT private emergency alert state

MCPTT speech

Media-floor control entity

Temporary MCPTT group identity

Trusted mutual aid

Untrusted mutual aid

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

In-progress emergency

MCPTT emergency alert

MCPTT emergency group call

MCPTT emergency state

Partner MCPTT system

Primary MCPTT system

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

MBMS subchannel

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

Pre-selected MCPTT user profile

## 3.2 Symbols

Void.

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

ECGI E-UTRAN Cell Global Identification

FFS For Further Study

ICS Implementation Conformance Statement

IPEG In-Progress Emergency Group

IPEPC In-Progress Emergency Private Call

IPIG In-Progress Imminent peril Group

IUT Implementation Under Test

IXIT Implementation eXtra Information for Testing

MBMS Multimedia Broadcast and Multicast Service

MBSFN Multimedia Broadcast multicast service Single Frequency Network

MCData Mission Critical Data

MCPTT Mission Critical Push To Talk

MCPTT group ID MCPTT group IDentity

MCVideo Mission Critical Video

MCX Mission Critical X, with X = PTT or X= Video or X= Data

MEA MCPTT Emergency Alert

MEG MCPTT Emergency Group

MEGC MCPTT Emergency Group Call

MEPC MCPTT Emergency Private Call

MEPP MCPTT Emergency Private Priority

MES MCPTT Emergency State

MIME Multipurpose Internet Mail Extensions

MIG MCPTT Imminent peril Group

MIGC MCPTT Imminent peril Group Call

MONP MCPTT Off-Network Protocol

MPEA MCPTT Private Emergency Alert

NAT Network Address Translation

QCI QoS Class Identifier

RTP Real-time Transport Protocol

SAI Service Area Identifier

SDP Session Description Protocol

SIP Session Initiation Protocol

SS System Simulator

SSRC Synchronization SouRCe

TGI Temporary MCPTT Group Identity

TMGI Temporary Mobile Group Identity

TP Transmission Point

URI Uniform Resource Identifier

# 4 General

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

## 4.0 Introduction

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

## 4.1 MCPTT Conformance testing test points overview

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

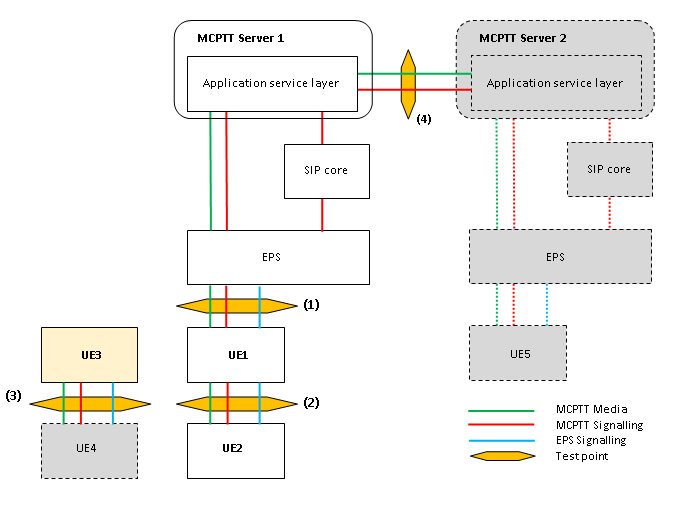


Figure 4.1.1: MCPTT Conformance testing test points model

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

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

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

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

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

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

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

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

Figure 4.1.2 provides a general overview of functions distributions at the MCPTT server side when multiple MCPTT Servers are involved. More functional models can be found in TS 24.379 [9].



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

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

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

## 4.2 MCPTT Conformance testing test environment overview

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



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

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



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

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



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.

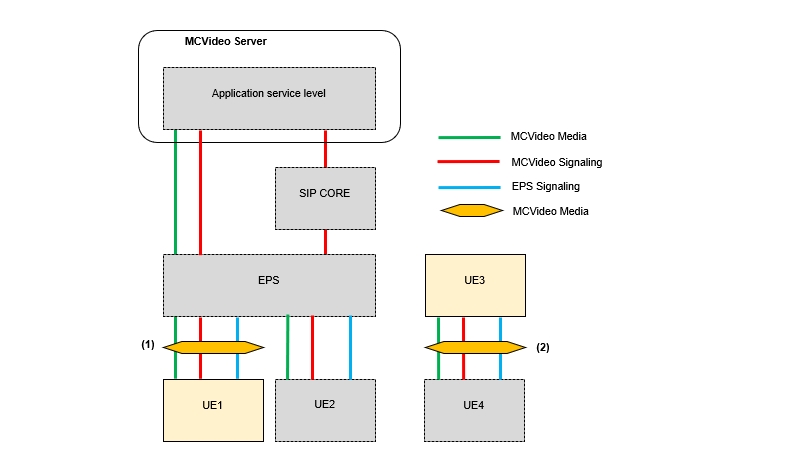


Figure 4.5.1: MCVideo Conformance testing test points model

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.

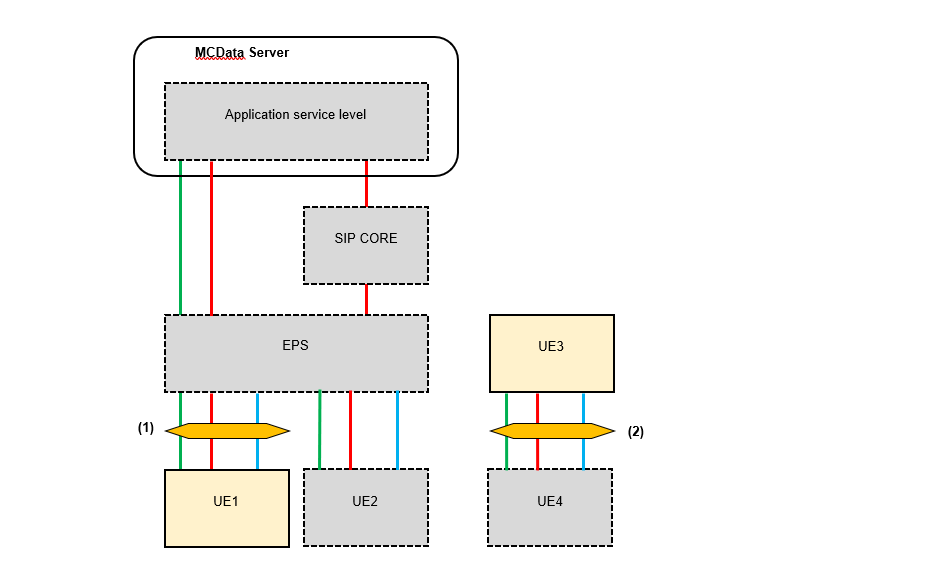


Figure 4.8.1: MCData Conformance testing test points model

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 MCX Authorization/Configuration and Key Generation

5.3.2.1 Initial conditions

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

- SS (MCX server)

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

Implementation Under Test (IUT):

- UE (MCX client)

- The MCX Client has been provisioned 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 MCX UE initial configuration management object (MO) and the default MCX 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\_MCX\_User\_A\_username, px\_MCX\_User\_A\_password as provided in TS 36.579-5 [5], Table 9.2-1: MCX Client Common PIXIT)

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

The UE is attached to EPS services.

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

5.3.2.2 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: MCX user authentication

| **St** | **Procedure** | **Message Sequence** | | TP | Verdict |
| --- | --- | --- | --- | --- | --- |
|  |  | **U - S** | **Message** |
| 1-2 | 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 (MCX client) as specified by 3GPP TS 33.310 [70], to the authorisation endpoint of the IdM server as specified in 3GPP TS 33.180 [94] using the configured URL of the authorisation endpoint of the IdM server as specified in the "<x>/OnNetwork/AppServerInfo/IDMSAuthEndpoint" leaf node, Table 5.5.8.1-1. | - | - | - | - |
| - | EXCEPTION: Steps 3a1-3b1 describe behaviour that depends on UE implementation of the OpenID Connect protocol; the "lower case letter" identifies a step sequence that takes place when one or the other is the case. | - | - | - | - |
| 3a1 | The UE (MCX client) sends an OpenID Connect Authentication Request using HTTP GET. | --> | HTTP GET (Authorization) | - | P |
| 3b1 | The UE (MCX client) sends an OpenID Connect Authentication Request using HTTP POST. | --> | HTTP POST (Authorization) | - | P |
| 4 | The SS sends 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 (MCX 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 (MCX client) as specified by 3GPP TS 33.310 [70] to the token endpoint of the IdM server as specified in 3GPP TS 33.180 [94] using the configured URL of the token endpoint of the IdM server as specified in the "/<x>/OnNetwork/AppServerInfo/IDMSTokenEndpoint" leaf node, Table 5.5.8.1-1. | - | - | - | - |
| 9 | The UE (MCX client) sends an HTTP POST Request 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 (MCX client) as specified by 3GPP TS 33.310 [70] to the HTTP Proxy as specified in 3GPP TS 33.180 [94] using the configured URL of the HTTP Proxy as specified in the "/<x>/OnNetwork/AppServerInfo/HTTPproxy" leaf node, Table 5.5.8.1-1. | - | - | -- |  |
| 11 | The UE (MCX client) sends 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 MCX 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 |
| 12 | The SS replies to the UE with identity specific key information. | <-- | HTTP 200 (OK) | - | - |
| 13 | The UE (MCX 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 MCX 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: MCX Initial UE Configuration Request

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |
| 1 | The UE (MCX 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: MCX 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 (MCX client) sends a SIP REGISTER request for service authorisation. | --> | SIP REGISTER | | - | | P |
| 1a2 | | The SS (MCX server) sends SIP 200 (OK).  NOTE: The user is now authorized for MCX service. | <-- | SIP 200 (OK) | | - | | - |
| 1a3 | | The UE (MCX client) sends a SIP PUBLISH request for update of PoC-settings (NOTE 1). | --> | SIP PUBLISH | | - | | P |
| 1a4 | | The SS (MCX server) sends SIP 200 (OK). | <-- | SIP 200 (OK) | | - | | - |
| 1b1 | | The UE (MCX client) sends a SIP PUBLISH request for service authorisation and update of PoC-settings (NOTE 1). | --> | SIP PUBLISH | | -- | | P |
| 1b2 | | The SS (MCX server) sends SIP 200 (OK).  NOTE: The user is now authorized for MCX 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 (MCX 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: MCX UE Configuration document, MCX User Profile Configuration Document, and the MCX Service configuration document. The base URI of each list entry is set to the CMS XCAP-ROOT-URI.  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 MCX 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 (MCX client) sends a SIP 200 (OK) message. | | --> | SIP 200 (OK) | - | P |
| 5 | The UE (MCX client) sends an HTTP GET Request message to the SS that contains the access token and the XCAP-URI of the MCX UE Configuration Document.  NOTE: The MCX Client is requesting the MCX UE Configuration Document. | | --> | HTTP GET | - | P |
| 6 | The SS sends the HTTP 200 (OK) message including the MCX UE Configuration Document. | | <-- | HTTP 200 (OK) | - | - |
| 7 | The UE (MCX client) sends an HTTP GET Request message to the SS that contains the access token and the XCAP-URI of the MCX User Profile Configuration Document.  NOTE: The MCX Client is requesting the MCX User Profile Configuration Document. | | --> | HTTP GET | - | P |
| 8 | The SS sends the HTTP 200 (OK) message including the MCX User Profile Configuration Document.  NOTE: The MCX User Profile Configuration Document includes information on MCX groups including for which groups the MCX Client is a member. The MCX User Profile Configuration Document includes Group A as a group for which the MCX Client is a member and is implicitly affiliated. Group A is used as the default group for all test cases in TS 36.579-2 and TS 36.579-3. | | <-- | HTTP 200 (OK) | - | - |
| 9 | The UE (MCX client) sends an HTTP GET Request message to the SS that contains the access token and the XCAP-URI of the MCX Service Configuration Document.  NOTE: The MCX Client is requesting the MCX Service Configuration Document. | | --> | HTTP GET | - | P |
| 10 | The SS sends the HTTP 200 (OK) message including the MCX 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 (MCX 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 MCX 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 MCX Client will receive group information for Group A. The MCX 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 (MCX client) sends a SIP 200 (OK) message. | --> | SIP 200 (OK) | - | P |
| 5 | The UE (MCX 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 'MCX 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 MCX-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 (MCX client) sends a SIP 200 (OK) message. | --> | SIP 200 (OK) |  |  |
| NOTE 1: This completes MCX 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 (MCX 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 (MCX 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"><br>  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: Void

Table 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 - 5.3.2B Void

### 5.3.3 MCX pre-established session establishment CO

5.3.3.1 Initial conditions

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

System Simulator:

- SS (MCX server)

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

IUT:

- UE (MCX client)

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

5.3.3.2 Definition of system information messages

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

5.3.3.3 Procedure

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

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

5.3.3.4 Specific message contents

Table 5.3.3.4-1: SIP INVITE (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” |  |  |  |
| **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\_SESSION, 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 Void

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

5.3.4.1 Initial conditions

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

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

5.3.4.2 Definition of system information messages

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

5.3.4.3 Procedure

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

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

5.3.4.4 Specific message contents

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

none

Table 5.3.4.4-1: Void

### 5.3.5 MCX CT group call establishment, manual commencement

5.3.5.1 Initial conditions

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

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

5.3.5.2 Definition of system information messages

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

5.3.5.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| - | EXCEPTION: Steps 1a1describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called. | - | - | - | - |
| 1a1 | IF in RRC\_IDLE state, the E-UTRA/EPC actions which are related to the MCX call establishment described in clause 5.4.4 'Generic Test Procedure for MCX CT communication in E-UTRA' take place. | - | - | - | - |
| 2 | The SS (MCX Server) sends an initial SIP INVITE requesting the establishment of an MCX group call. | <-- | SIP INVITE | - | - |
| - | EXCEPTION: Step 3a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE responds to a SIP INVITE with a SIP 100 (Trying) | - | - | - | - |
| 3a1 | The UE (MCX client) sends SIP 100 (Trying). | --> | SIP 100 (Trying) | - | - |
| 4 | The SS starts timer Timer\_1 = 5 seconds. | - | - | - | - |
| - | EXCEPTION: Steps 5a1 to 5c1 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that may take place if the UE responds reliably or unreliably to a SIP INVITE with a SIP 183 (Session Progress) | - | - | - | - |
| 5a1 | Check: Does the UE (MCX client) send SIP 183 (Session Progress) unreliably? | --> | SIP 183 (Session Progress) | - | P |
| 5a2 | The SS stops Timer\_1. | - | - | - | - |
| 5b1 | Check: Does the UE (MCX client) send SIP 183 (Session Progress) reliably? | --> | SIP 183 (Session Progress) | - | P |
| 5b2 | The SS stops Timer\_1. | - | - | - | - |
| 5b3 | The SS (MCX Server) acknowledges the receipt of SIP 183 (Session Progress) | <-- | PRACK | - | - |
| 5b4 | The UE (MCX Client) responds PRACK with SIP 200 (OK) | --> | SIP 200 (OK) | - | - |
| 5c1 | Check: Does Timer\_1 expire? | - | - | - | P |
| 5A | Check: Does the UE (MCX client) notify the User of the incoming call request? (NOTE 1) | - | - | - | P |
| 6 | Make UE (MCX User) accept the call (NOTE 1) | - | - | - | - |
| 7 | Check: Does the UE (MCX client) respond to the SIP INVITE with SIP 200 (OK)? | --> | SIP 200 (OK) | - | P |
| 8 | The SS (MCX server) sends a SIP ACK to acknowledge the session establishment | <-- | SIP ACK | - | - |
| NOTE 1: This expected to be done via a suitable implementation dependent MMI. | | | | | |

5.3.5.4 Specific message contents

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

Table 5.3.5.4-1 to 3: Void

### 5.3.6 MCX 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.

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

5.3.6.2 Definition of system information messages

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

5.3.6.3 Procedure

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

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

5.3.6.4 Specific message contents

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

Table 5.3.6.4-1 to 1A: Void

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

|  |
| --- |
| Derivation Path: Table 5.5.2.16.2.1-1 with condition 100rel |

Table 5.3.6.4-3: Void

### 5.3.7 to 5.3.9 Void

### 5.3.10 MCX CO call release

5.3.10.1 Initial conditions

As specified in the test case which calls the procedure.

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

5.3.10.2 Definition of system information messages

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

5.3.10.3 Procedure

Table 5.3.10.3-1: MCX CO call release

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| 1 | Check: Does the UE (MCX Client) send a SIP BYE request to terminate the MCX session? | --> | SIP BYE | - | P |
| 2 | The SS (MCX Server) responds with a SIP 200 (OK) message? | <-- | SIP 200 (OK) | - | - |
| 3 | The SS waits 2 seconds before the SS deactivates the dedicated EPS bearer and releases the RRC connection.  NOTE: 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 Void

### 5.3.12 MCX CT call release

5.3.12.1 Initial conditions

As specified in the test case which calls the procedure.

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

5.3.12.2 Definition of system information messages

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

5.3.12.3 Procedure

Table 5.3.12.3-1: MCX CT call release

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

5.3.12.4 Specific message contents

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

none

### 5.3.13 - 21 Void

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

5.3.22.1 Initial conditions

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

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

5.3.22.2 Definition of system information messages

-

5.3.22.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| 1 | The SS (MCX server) sends a SIP NOTIFY 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 (MCX 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 (MCX server) sends the HTTP 200 (OK) message including the updated Group Document | <-- | HTTP 200 (OK) | - | - |
| 5 | The SS (MCX server) sends a SIP NOTIFY message to the UE containing the group key transport payloads (GKTP) document including the group keys. | <- | SIP NOTIFY | - | - |
| 5a1-5a2 | Void | - | - | - | - |
| 6 | The UE (MCX client) sends a SIP 200 (OK) message. | --> | SIP 200 (OK) | - | - |

5.3.22.4 Specific message contents

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

Table 5.3.22.4-1: SIP NOTIFY (Step 1)

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

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

|  |
| --- |
| Derivation Path: Table 5.5.3.12-2, condition GROUPCONFIG |

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

|  |
| --- |
| Derivation Path: Table 5.5.2.17.1.1-1 |

Table 5.3.22.4-2A..2G: Void

Table 5.3.22.4-3: HTTP GET (Step 3)

|  |
| --- |
| Derivation Path: Table 5.5.4.2-1, condition GROUPCONFIG |

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

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

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

| Derivation Path: Table 5.5.7.4-2 | | | | |
| --- | --- | --- | --- | --- |
| **Information Element** | **Value/remark** | **Comment** | **Reference** | **Condition** |
| **list-service[1]** |  |  |  |  |
| **mcpttgi:on-network-regrouped** |  |  | TS 24.481 [31] clause 7.2.4.2 | TEMPGROUPCREATE |
| temporary-MCPTT-group-ID attribute | px\_MCPTT\_Group\_T\_ID | MCS temporary group identity | TS 24.481 [31] clause 7.2.4.2 | MCPTT |
|  | px\_MCVideo\_Group\_T\_ID |  |  | MCVIDEO |
|  | px\_MCData\_Group\_T\_ID |  |  | MCDATA |
| temporary-MCPTT-group-requestor attribute | px\_MCPTT\_ID\_User\_B | Identity of the responsible for formatting the MCS temporary group. | TS 24.481 [31] clause 7.2.4.2 | MCPTT |
|  | px\_MCVideo\_ID\_User\_B |  |  | MCVIDEO |
|  | px\_MCData\_ID\_User\_B |  |  | MCDATA |
| constituent-MCPTT-group-IDs |  |  | TS 24.481 [31] clause 7.2.4.2 |  |
| constituent-MCPTT-group-ID[1] | px\_MCPTT\_Group\_A\_ID | MCS group ID of a constituent MCS group of the temporary MCS group | TS 24.481 [31] clause 7.2.4.2 | MCPTT |
|  | px\_MCVideo\_Group\_A\_ID |  |  | MCVIDEO |
|  | px\_MCData\_Group\_A\_ID |  |  | MCDATA |
| constituent-MCPTT-group-ID[1] | px\_MCPTT\_Group\_B\_ID | MCS group ID of a constituent MCS group of the temporary MCS group | TS 24.481 [31] clause 7.2.4.2 | MCPTT |
|  | px\_MCVideo\_Group\_B\_ID |  |  | MCVIDEO |
|  | px\_MCData\_Group\_B\_ID |  |  | MCDATA |
| protect-media | "true" | Indicates whether confidentiality and integrity of media is required on the MCPTT temporary group | TS 24.481 [31] clause 7.2.4.2 |  |
| protect-floor-control-signalling | "true" | Indicates whether confidentiality and integrity of floor control signalling is required on the temporary MCPTT group | TS 24.481 [31] clause 7.2.4.2 |  |

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

Table 5.3.22.4-5A: Void

Table 5.3.22.4-6: SIP NOTIFY (Step 5)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 |  |  | MCPTT |
|  | px\_MCVideo\_Group\_T\_ID |  |  | MCVIDEO |
|  | px\_MCData\_Group\_T\_ID |  |  | MCDATA |
| GKTP[1] | MIKEY message as described in Table 5.3.22.4-9 | MIKEY message containing the GMK for Group T | TS 33.180 [94] |  |
| id attribute | arbitrary value | unique charstring assigned by the SS |  |  |

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

Table 5.3.22.4-9: MIKEY-SAKKE I\_MESSAGE (GMK distribution by the SS) (Table 5.3.22.4-8)

| 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. | MCPTT |
|  | px\_MCVideo\_Group\_T\_ID |  | MCVIDEO |
|  | px\_MCData\_Group\_T\_ID |  | MCDATA |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| ..} |  |  |  |
| } |  |  |  |

### 5.3.23 - 25 Void

### 5.3.26 MCX CO Group Creation

5.3.26.1 Initial conditions

As specified in the test case which calls the procedure.

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

5.3.26.2 Definition of system information messages

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

5.3.26.3 Procedure

Table 5.3.26.3-1: MCX CO Group Creation procedure

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

none

Table 5.3.26.4-1 to -5: Void

### 5.3.27 MCX CO Temporary Group Creation

5.3.27.1 Initial conditions

As specified in the test case which calls the procedure.

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

5.3.27.2 Definition of system information messages

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

5.3.27.3 Procedure

Table 5.3.27.3-1: MCX CO Temporary Group Creation procedure

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

none

Table 5.3.27.4-1 to -2: Void

### 5.3.28 MCX CO Temporary Group Tear Down

5.3.28.1 Initial conditions

As specified in the test case which calls the procedure.

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

5.3.28.2 Definition of system information messages

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

5.3.28.3 Procedure

Table 5.3.28.3-1: MCX CO Temporary Group Creation procedure

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

None

Table 5.3.28.4-1: Void

### 5.3.29 MCX Subscription and Notification

5.3.29.1 Initial conditions

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

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

5.3.29.2 Definition of system information messages

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

5.3.29.3 Procedure

Table 5.3.29.3-1: MCX Subscription and Notification

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| - | EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called. | - | - | - | - |
| 1a1 | IF in RRC\_IDLE state, the E-UTRA/EPC actions which are related to the MCX call establishment described in clause 5.4.3 'Generic Test Procedure for MCX CO communication in E-UTRA' take place. | - | - | - | - |
| 2 | Check: Does the UE (MCX Client) send a SIP SUBSCRIBE message request? | --> | SIP SUBSCRIBE | - | P |
| 3 | The SS (MCX Server) responds to the SIP SUBSCRIBE message with a SIP 200 (OK) message. | <-- | SIP 200 (OK) | - | - |
| 4 | The SS (MCX Server) sends a SIP NOTIFY message | <-- | SIP NOTIFY | - | - |
| 5 | The UE (MCX Client) responds with a SIP 200 (OK) message. | --> | SIP 200 (OK) |  |  |
| 6 | SS (MCX 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

### 5.3.30 MCX SIP MESSAGE Request - Accept CO

5.3.30.1 Initial conditions

As specified in the test case which calls the procedure.

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

5.3.30.2 Definition of system information messages

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

5.3.30.3 Procedure

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

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

5.3.30.4 Specific message contents

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

None

### 5.3.31 MCX SIP MESSAGE Request - Accept CT

5.3.31.1 Initial conditions

As specified in the test case which calls the procedure.

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

5.3.31.2 Definition of system information messages

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

5.3.31.3 Procedure

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

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

5.3.31.4 Specific message contents

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

None

### 5.3.32 MCX SIP MESSAGE CO

5.3.32.1 Initial conditions

As specified in the test case which calls the procedure.

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

5.3.32.2 Definition of system information messages

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

5.3.32.3 Procedure

Table 5.3.32.3-1: MCX SIP MESSAGE CO

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

5.3.32.4 Specific message contents

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

None

### 5.3.33 MCX SIP MESSAGE CT

5.3.33.1 Initial conditions

As specified in the test case which calls the procedure.

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

5.3.33.2 Definition of system information messages

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

5.3.33.3 Procedure

Table 5.3.33.3-1: MCX SIP MESSAGE CT

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

5.3.33.4 Specific message contents

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

None

### 5.3.34 MCX Group Affiliation Status Change

5.3.34.1 Initial conditions

As specified in the test case which calls the procedure.

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

5.3.34.2 Definition of system information messages

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

5.3.34.3 Procedure

Table 5.3.34.3-1: MCX Group Affiliation Status Change

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

5.3.34.4 Specific message contents

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

None

## 5.3A Generic test procedures for UE MCPTT operation

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

5.3A.1.1 Initial conditions

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

5.3A.1.2 Definition of system information messages

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

5.3A.1.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| - | EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called. | - | - | - | - |
| 1a1 | IF in RRC\_IDLE state, the E-UTRA/EPC actions which are related to the MCPTT call establishment described in clause 5.4.3 'Generic Test Procedure for MCX CO communication in E-UTRA' take place. | - | - | - | - |
| 2 | Check: Does the UE (MCPTT Client) send a SIP INVITE requesting the establishment/modification of an MCPTT call? | --> | SIP INVITE | - | P |
| 3 | The SS sends 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 at step 6a1)  iii. SDP answer from SS contains no “mc\_implicit\_request”and no “mc\_granted” (the UE needs to explicitly request the floor) | | | | | |

5.3A.1.4 Specific message contents

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

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

|  |
| --- |
| Derivation Path: Table 5.5.2.5.1-1 with condition MCPTT |

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

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

### 5.3A.2 MCPTT CO private call establishment, manual commencement

5.3A.2.1 Initial conditions

The same initial conditions apply as specified in clause 5.3.3.1.

5.3A.2.2 Definition of system information messages

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

5.3A.2.3 Procedure

Table 5.3A.2.3-1: 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 MCX 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 at step 7a1)  iii. SDP answer from SS contains no “mc\_implicit\_request”and no “mc\_granted” (the UE needs to explicitly request the floor) | | | | | |

5.3A.2.4 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 5.3A.2.4-1: SIP INVITE (step 2, Table 5.3A.2.3-1)

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

Table 5.3A.2.4-2: SIP 200 (OK) (step 5, Table 5.3A.2.3-1)

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

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

5.3A.3.1 Initial conditions

As specified in the test case which calls the procedure.

5.3A.3.2 Definition of system information messages

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

5.3A.3.3 Procedure

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

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

5.3A.3.4 Specific message contents

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

none

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

5.3A.4.1 Initial conditions

As specified in the test case which calls the procedure.

5.3A.4.2 Definition of system information messages

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

5.3A.4.3 Procedure

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

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

5.3A.4.4 Specific message contents

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

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

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

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

|  |
| --- |
| Derivation Path: Table 5.5.2.17.1.2-1 with condition REFER-RSP |

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

5.3A.5.1 Initial conditions

As specified in the test case which calls the procedure.

5.3A.5.2 Definition of system information messages

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

5.3A.5.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| 1 | 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 |
| 3 | The SS waits 2 seconds before the SS releases the RRC connection.  NOTE: The specified wait period of 2s shall ensure that lower layer signalling (TCP) is finished and any not allowed behaviour captured. | - | - | - | - |

5.3A.5.4 Specific message contents

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

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

|  |
| --- |
| Derivation Path: Table 5.5.6.13-1 with condition ACK |

### 5.3A.6 MCPTT CO session modification

5.3A.6.1 Initial conditions

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

5.3A.6.2 Definition of system information messages

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

5.3A.6.3 Procedure

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

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

5.3A.6.4 Specific message contents

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

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

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

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

|  |
| --- |
| Derivation Path: Table 5.5.6.3-1 condition ACK |

### 5.3A.7 Void











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

5.3A.8.1 Initial conditions

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

5.3A.8.2 Definition of system information messages

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

5.3A.8.3 Procedure

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

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

5.3A.8.4 Specific message contents

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

none

### 5.3A.9 UE initiated MCPTT functional alias status determination and subscription

5.3A.9.1 Initial conditions

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

5.3A.9.2 Definition of system information messages

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

5.3A.9.3 Procedure

Table 5.3A.9.3-1: 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 MCX 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 |
| 7 | 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. | | | | | |

5.3A.9.4 Specific message contents

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

Table 5.3A.9.4-1: SIP SUBSCRIBE (step 3, Table 5.3A.9.3-1)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 5.3A.9.4-2 |  |  |  |

Table 5.3A.9.4-2: MCPTT-Info in SIP SUBSCRIBE (Table 5.3A.9.4-1)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 5.3A.9.4-3: SIP 200 (OK) (step 4, Table 5.3A.9.3-1)

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

Table 5.3A.9.4-4: SIP NOTIFY (step 5, Table 5.3A.9.3-1)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 5.3A.9.4-5 |  |  |  |

Table 5.3A.9.4-5: PIDF in SIP NOTIFY (Table 5.3A.9.4-4)

|  |
| --- |
| 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 |

### 5.3A.10 UE initiated MCPTT functional alias status change

5.3A.10.1 Initial conditions

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

5.3A.10.2 Definition of system information messages

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

5.3A.10.3 Procedure

Table 5.3A.10.3-1: 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 MCX 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 |
| 7 | 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. | | | | | |

5.3A.10.4 Specific message contents

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

Table 5.3A.10.4-1: SIP PUBLISH (step 3, Table 5.3A.10.3-1)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 5.3A.10.4-2 |  |  |  |
| MIME body part |  | **PIDF** | TS 24.379 [9] clause 9A.2.1.2 |  |
| MIME-part-body | PIDF as described in Table 5.3A.10.4-3 |  |  |  |

Table 5.3A.10.4-2: MCPTT-Info in SIP PUBLISH (Table 5.3A.10.4-1)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 5.3A.10.4-3: PIDF in SIP PUBLISH (Table 5.3A.10.4-1)

|  |
| --- |
| Derivation Path: Table 5.5.3.5.1-1 with condition FUNCTIONAL\_ALIAS\_STATUS\_CHANGE |

Table 5.3A.10.4-4: SIP 200 (OK) (step 4, Table 5.3A.10.3-1)

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

Table 5.3A.10.4-5: SIP NOTIFY (step 5, Table 5.3A.10.3-1)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 5.3A.10.4-6 |  |  |  |

Table 5.3A.10.4-6: PIDF in SIP NOTIFY (Table 5.3A.10.4-5)

|  |
| --- |
| Derivation Path: Table 5.5.3.5.2-1 with condition FUNCTIONAL\_ALIAS\_ACTIVATED, NOTIFY\_FOR\_PUBLISH |

### 5.3A.11 MCPTT Floor Request – Floor Granted

5.3A.11.1 Initial conditions

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

5.3A.11.2 Definition of system information messages

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

5.3A.11.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| 1 | Check: Does the UE (MCPTT Client) send a Floor Request message? | --> | Floor Request | - | P |
| 2 | The SS (MCPTT Server) sends a Floor Granted message with 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. | | | | | |

5.3A.11.4 Specific message contents

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

Table 5.3A.11.4-1: Floor Granted (Step 2, Table 5.3.16.3-1)

|  |
| --- |
| Derivation Path: Table 5.5.6.3-1 condition ACK |

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

5.3A.12.1 Initial conditions

As specified in the test case which calls the procedure.

5.3A.12.2 Definition of system information messages

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

5.3A.12.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| 1 | Check: Does the UE (MCPTT Client) send a Floor Request message? | --> | Floor Request | - | P |
| 2 | The SS (MCPTT Server) sends a Floor Queue Position Info message indicating that the Floor Request was queued message with no acknowledgement required. | <-- | Floor Queue Position Info | - | - |

5.3A.12.4 Specific message contents

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

none.

### 5.3A.13 MCPTT Queuing Position Request

5.3A.13.1 Initial conditions

As specified in the test case which calls the procedure.

5.3A.13.2 Definition of system information messages

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

5.3A.13.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| 1 | Check: Does the UE (MCPTT Client) send a Floor Queue Position Request message? | --> | Floor Queue Position Request | - | P |
| 2 | The SS (MCPTT Server) responds with a Floor Queue Position Info message with no acknowledgement required. | <-- | Floor Queue Position Info | - | - |

5.3A.13.4 Specific message contents

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

none

### 5.3A.14 MCPTT Floor Request – Floor Deny

5.3A.14.1 Initial conditions

As specified in the test case which calls the procedure.

5.3A.14.2 Definition of system information messages

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

5.3A.14.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| 1 | Check: Does the UE (MCPTT Client) send a Floor Request message? | --> | Floor Request | - | P |
| 2 | The SS (MCPTT Server) sends a Floor Deny message 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. | | | | | |

5.3A.14.4 Specific message contents

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

none

### 5.3A.15 MCPTT Floor Release – Floor Idle

5.3A.15.1 Initial conditions

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

5.3A.15.2 Definition of system information messages

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

5.3A.15.3 Procedure

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

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

5.3A.15.4 Specific message contents

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

None

### 5.3A.16 MCPTT Floor Release – Floor Taken

5.3A.16.1 Initial conditions

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

5.3A.16.2 Definition of system information messages

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

5.3A.16.3 Procedure

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

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

5.3A.16.4 Specific message contents

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

none

## 5.3B Generic test procedures for UE MCVideo operation

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

5.3B.1.1 Initial conditions

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

5.3B.1.2 Definition of system information messages

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

5.3B.1.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| - | EXCEPTION: Step 1a1 describes behaviour that depends on the E-UTRA RRC state at the time the present procedure is called. | - | - | - | - |
| 1a1 | IF in RRC\_IDLE state, the E-UTRA/EPC actions which are related to the MCVideo call establishment described in clause 5.4.3 'Generic Test Procedure for MCX CO communication in E-UTRA' take place. | - | - | - | - |
| 2 | Check: Does the UE (MCVideo Client) send a SIP INVITE requesting the establishment/modification of an MCVideo call? | --> | SIP INVITE | - | P |
| 3 | The SS sends SIP 100 Trying | <-- | SIP 100 (Trying) | - | - |
| 4 | The SS (MCVideo server) responds with a SIP 200 (OK) | <-- | SIP 200 (OK) | - | - |
| 5 | Check: Does the UE (MCVideo Client) send a SIP ACK to acknowledge the session establishment/modification? | --> | SIP ACK | - | P |
| - | EXCEPTION: Steps 6a1-6a2 describe behaviour that depends on the test case requirements; the "lower case letter" identifies a step sequence that takes place if the UE requests implicit 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 (MCVideo server) sends a Floor Granted message. | <-- | Transmission Granted | - | - |
| 6a2 | Check: Does the UE (MCVideo Client) send a Transmission Control Ack message acknowledging the Transmission Granted message from the SS (MCVideo Server)? | --> | Transmission Control Ack | - | P |
| 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) | | | | | |

5.3B.1.4 Specific message contents

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

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

|  |
| --- |
| Derivation Path: Table 5.5.2.5.1-1 condition MCVIDEO |

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

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

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

| Derivation Path: Table 5.5.11.2.1-1, condition ACK |
| --- |

### 5.3B.2 MCVideo Transmission request – Transmission Granted

5.3B.2.1 Initial conditions

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

5.3B.2.2 Definition of system information messages

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

5.3B.2.3 Procedure

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

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

5.3B.2.4 Specific message contents

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

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

|  |
| --- |
| Derivation Path: Table 5.5.11.2.1-1 condition ACK |

### 5.3B.3 MCVideo Media Transmission Notification and Request CT

5.3B.3.1 Initial conditions

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

5.3B.3.2 Definition of system information messages

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

5.3B.3.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| 1 | The SS (MCVideo Server) sends a Media Transmission Notification message to the UE (MCVideo Client) | <- | Media Transmission Notification | - | - |
| 2 | Check: Does the UE (MCVideo Client) provide media transmission notification to the MCVideo User?  (NOTE 1) | - | - | - | P |
| 3 | Make the MCVideo User request permission to receive media.  (NOTE 1) | - | - | - | - |
| 4 | Check: Does the UE (MCVideo Client) send a Receive Media Request message to the SS (MCVideo Server)? | --> | Receive Media Request | - | P |
| 5 | The SS (MCVideo Server) sends a Receive Media Response message to the UE (MCVideo Client). | <- | Receive Media Response | - | - |
| - | EXCEPTION: Step 6a1 describes behaviour that depends on the requirements of test case calling the present procedure. | - | - | - | - |
| 6a1 | IF the test case specifies the Receive Media Response to request a Transmission Control Ack THEN Check: Does the UE (MCVideo Client) acknowledges receipt of Receive Media Response? | --> | Transmission Control Ack | - | P |
| NOTE 1: This expected to be done via a suitable implementation dependent MMI. | | | | | |

5.3B.3.4 Specific message contents

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

None

### 5.3B.4 MCVideo Transmission Request - Queue Position Info

5.3B.4.1 Initial conditions

As specified in the test case which calls the procedure.

5.3B.4.2 Definition of system information messages

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

5.3B.4.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| 1 | Check: Does the UE (MCVideo Client) send a Transmission Request message? | --> | Transmission Request | - | P |
| 2 | The SS (MCVidao Server) sends a Queue Position Info message indicating that the Transmission Request was queued message with no acknowledgement required. | <-- | Queue Position Info | - | - |

5.3B.4.4 Specific message contents

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

none.

### 5.3B.5 MCVideo Queue Position Request

5.3B.5.1 Initial conditions

As specified in the test case which calls the procedure.

5.3B.5.2 Definition of system information messages

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

5.3B.5.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| 1 | Check: Does the UE (MCVideo Client) send a Queue Position Request message? | --> | Queue Position Request | - | P |
| 2 | The SS (MCVideo Server) responds with a Queue Position Info message with no acknowledgement required. | <-- | Queue Position Info | - | - |
| - | EXCEPTION: Step 3a1 describes behaviour that depends on the requirements of test case calling the present procedure. | - | - | - | - |
| 3a1 | IF the test case specifies the Queue Position Info to request a Transmission Control Ack THEN Check: Does the UE (MCVideo Client) acknowledges receipt of Queue Position Info? | --> | Transmission Control Ack | - | P |

5.3B.5.4 Specific message contents

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

none

### 5.3B.6 MCVideo Transmission Request - Transmission Rejected

5.3B.6.1 Initial conditions

As specified in the test case which calls the procedure.

5.3B.6.2 Definition of system information messages

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

5.3B.6.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| 1 | Check: Does the UE (MCVideo Client) send a Transmission Request message? | --> | Transmission Request | - | P |
| 2 | The SS (MCVideo Server) sends a Transmission Rejected message with no acknowledgement required | <-- | Transmission Rejected | - | - |
| 3 | Check: Does the UE (MCVideo Client) provide Transmission deny notification to the MCVideo User? (NOTE 1) | - | - | - | P |
| NOTE 1: This expected to be done via a suitable implementation dependent MMI. | | | | | |

5.3B.6.4 Specific message contents

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

none

### 5.3B.7 MCVideo Transmission End Request CO

5.3B.7.1 Initial conditions

As specified in the test case which calls the procedure.

5.3B.7.2 Definition of system information messages

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

5.3B.7.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| 1 | Check: Does the UE (MCVideo Client) send a Transmission End Request message indicating that it wants to terminate a MCVideo On-Demand Pre-Arranged Emergency Group Call, with implicit Transmission Control? | --> | Transmission End Request | - | P |
| 2 | The SS (MCVideo Server) responds with a Transmission End Response message verifying that the UE (MCVideo Client) is able to end an MCVideo On-Demand Pre-Arranged Emergency Group Call, with implicit Transmission Control. | <-- | Transmission End Response | - | - |
| 3 | Check: Does the UE (MCVideo Client) send a Transmission Control Ack message? | --> | Transmission Control Ack | - | P |
| 4 | The SS (MCVideo Server) sends a Transmission Idle message. Do I need this message? No difference whether ending an emergency call or normal call? | <-- | Transmission Idle |  |  |
| NOTE 1: This expected to be done via a suitable implementation dependent MMI. | | | | | |

5.3B.7.4 Specific message contents

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

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

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

### 5.3B.8 MCVideo Reception End Request CO

5.3B.8.1 Initial conditions

As specified in the test case which calls the procedure.

5.3B.8.2 Definition of system information messages

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

5.3B.8.3 Procedure

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| St | Procedure | Message Sequence | | TP | Verdict |
|  |  | U - S | Message |  |  |
| 1 | Check: Does the UE (MCVideo Client) send a Media Reception End Request to indicate it wants to stop RTP packet media? | --> | Media Reception End Request | - | P |
| 2 | The SS (MCVideo Server) sends a Receive Media Reception End Response message to the UE (MCVideo Client). | <-- | Media Reception End Response | - | - |
| 3 | The SS (MCVideo Server) sends a Transmission Idle message. | <-- | Transmission Idle | - | - |

5.3B.8.4 Specific message contents

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

none

### 5.3B.9 MCVideo Transmission End Request CT

5.3B.9.1 Initial conditions

As specified in the test case which calls the procedure.

5.3B.9.2 Definition of system information messages

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

5.3B.9.3 Procedure

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

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

5.3B.9.4 Specific message contents

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

None

### 5.3B.10 MCVideo Media Reception End Request CT

5.3B.10.1 Initial conditions

As specified in the test case which calls the procedure.

5.3B.10.2 Definition of system information messages

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

5.3B.10.3 Procedure

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

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

5.3B.10.4 Specific message contents

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

None

### 5.3B.11 MCVideo CO session modification

5.3B.11.1 Initial conditions

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

5.3B.11.2 Definition of system information messages

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

5.3B.113 Procedure

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

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

5.3B.11.4 Specific message contents

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

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

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

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

|  |
| --- |
| Derivation Path: Table 5.5.11.2.1-1 condition ACK |

## 5.3C Generic test procedures for UE MCData operation

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

5.3C.1.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.1.2 Definition of system information messages

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

5.3C.1.3 Procedure

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

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

5.3C.1.4 Specific message contents

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

none

### 5.3C.2 CO MCData Call Establishment

5.3C.2.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.2.2 Definition of system information messages

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

5.3C.2.3 Procedure

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

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

5.3C.2.4 Specific message contents

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

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

|  |
| --- |
| Derivation Path: Table 5.5.12.1-1, condition EMPTY\_SEND\_REQ |

### 5.3C.3 CT MCData Call Establishment

5.3C.3.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.3.2 Definition of system information messages

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

5.3C.3.3 Procedure

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

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

5.3C.3.4 Specific message contents

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

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

|  |
| --- |
| Derivation Path: Table 5.5.12.2-1, condition EMPTY\_SEND\_REQ |

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

|  |
| --- |
| Derivation Path: Table 5.5.12.1-1, condition EMPTY\_SEND\_REQ |

### 5.3C.4 CO MSRP message transfer

5.3C.4.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.4.2 Definition of system information messages

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

5.3C.4.3 Procedure

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

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

5.3C.4.4 Specific message contents

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

none

### 5.3C.5 CT MSRP message transfer

5.3C.5.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.5.2 Definition of system information messages

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

5.3C.5.3 Procedure

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

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

5.3C.5.4 Specific message contents

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

none

### 5.3C.6 CO MCData call release

5.3C.6.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.6.2 Definition of system information messages

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

5.3C.6.3 Procedure

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

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

5.3C.6.4 Specific message contents

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

none

### 5.3C.7 CT MCData call release

5.3C.7.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.7.2 Definition of system information messages

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

5.3C.7.3 Procedure

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

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

5.3C.7.4 Specific message contents

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

none

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

5.3C.8.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.8.2 Definition of system information messages

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

5.3C.8.3 Procedure

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

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

5.3C.8.4 Specific message contents

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

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

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

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

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

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: Table 5.5.2.7.2-1, condition MCDATA\_FD | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Request-Line** |  |  |  |  |
| Request-URI | tsc\_MCData\_PublicServiceId\_A | According to TS 24.282 [87] clause 10.2.1.3.3 the participating function just forwards the SIP MESSAGE received from the controlling function to the client |  |  |
| **Accept-Contact** |  |  |  |  |
| ac-value[2] | not present |  |  |  |
| **P-Asserted-Identity** |  |  |  |  |
| name-addr | px\_MCX\_SIP\_PublicUserId\_A\_1 | Public user ID of the calling MCData user (TS 24.282 [87] clause 10.2.1.3.4) |  |  |
| **Message-body** |  |  |  |  |
| MIME body part |  | **MCData-Info** |  |  |
| MIME-part-body | MCData-Info as described in Table 5.3C.8.4-4 |  |  |  |

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

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

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

5.3C.9.1 Initial conditions

Same as 5.3C.8.1.

5.3C.9.2 Definition of system information messages

Same as 5.3C.8.2.

5.3C.9.3 Procedure

Same as 5.3C.8.3.

5.3C.9.4 Specific message contents

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

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

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

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

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

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

|  |
| --- |
| Same as Table 5.3C.8.4-3 |

### 5.3C.10 FD file upload using HTTP

5.3C.10.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.10.2 Definition of system information messages

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

5.3C.10.3 Procedure

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

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

5.3C.10.4 Specific message contents

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

none

### 5.3C.11 FD file accept and download using HTTP

5.3C.11.1 Initial conditions

As specified in the test case which calls the procedure.

5.3C.11.2 Definition of system information messages

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

5.3C.11.3 Procedure

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

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

5.3C.11.4 Specific message contents

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

none

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

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

### 5.4.1 General

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

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

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

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

- MCX EUTRA test model: normative.

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

### 5.4.1A UE APN/PDN support assumptions

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

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

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

NOTE 2: Void.

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

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

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

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

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

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

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

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

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

- px\_MCX\_InitialRegistration\_TypeOfPDN1:   
First PDN registered during initial registration (either ‘ims’ or ‘internet’ or ‘mcx’)

- px\_MCX\_InitialRegistration\_TypeOfPDN2:   
Second PDN registered during initial registration; in addition to ‘ims’ or ‘internet’ or ‘mcx’ it may be ‘none’ to indicate that there is no second PDN connectivity requested by the UE during initial registration.

- px\_MCX\_InitialRegistration\_TypeOfPDN3:   
Third PDN registered during initial registration; in addition to ‘ims’ or ‘internet’ or ‘mcx’ it may be ‘none’ to indicate that there is no third PDN connectivity requested by the UE during initial registration.

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

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

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

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

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

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

### 5.4.2 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. | - | - |
| - | 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-CONFIG | | | | |
| 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 MCX CO communication in E-UTRA

5.4.3.1 Initial conditions

System Simulator:

- SS (MCX server)

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

IUT:

- UE (MCX client)

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

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

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

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

5.4.3.2 Definition of system information messages

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

5.4.3.3 Procedure

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

| St | Procedure | Message Sequence | |
| --- | --- | --- | --- |
|  |  | U - S | Message |
| 1 | Void | - | *-* |
| 2 | The UE transmits an *RRCConnectionRequest* message with 'establishmentCause' set to 'mo-Data'. | --> | *RRCConnectionRequest* |
| 3 | SS transmit an *RRCConnectionSetup* message. | <-- | RRC: *RRCConnectionSetup* |
| 4 | The UE transmits an *RRCConnectionSetupComplete* message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message. | --> | RRC: *RRCConnectionSetupComplete*  NAS: SERVICE REQUEST |
| 5 | The SS transmits a *SecurityModeCommand* message to activate AS security. | <-- | RRC: *SecurityModeCommand* |
| 6 | The UE transmits a *SecurityModeComplete* message and establishes the initial security configuration. | --> | RRC: *SecurityModeComplete* |
| 7 | The SS configures a data radio bearer, associated with the default EPS bearer context.  The *RRCConnectionReconfiguration* message is using condition SRB2-DRB(n, m) as specified in TS 36.508 [6] clause 4.8.2.2.1, with  n=1..3 depending on the number of PDNs (see clause 5.4.1A)  m=0..1 depending on the use case:  IF the procedure is used for on-demand call or communication establishment, for establishment of a pre-established session or IF a pre-established session exists THEN m=1  ELSE m=0 | <-- | RRC: *RRCConnectionReconfiguration* |
| - | EXCEPTION: In parallel to the events described below, depending on the context in which the procedure is used, the MCX client may start with user plane signalling (NOTE 1). | - | - |
| 8 | The UE transmits an *RRCConnectionReconfigurationComplete* message to confirm the establishment of the new data radio bearer, associated with the default EPS bearer context. | --> | RRC: *RRCConnectionReconfigurationComplete* |
| 9-15 | Void. | - | - |
| - | EXCEPTION: Steps 16a1-16a3 describe behaviour that depends on the context in which the procedure is used: The steps take place if the procedure is used for on-demand call or communication establishment or establishment of a pre-established session, | - | - |
| 16a1 | The SS configures a new RLC-UM data radio bearer, associated with the dedicated EPS bearer context.  The RRCConnectionReconfiguration message contains an ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST message for a dedicated EPS bearer according to TS 36.508 [6] clause 6.6.2 with   * MCPTT using dedicated EPS bearer context #5 (QCI 65) * MCVideo using dedicated EPS bearer context #10 (QCI 67) * MCData using dedicated EPS bearer context #9 (QCI 70) | <-- | RRC: *RRCConnectionReconfiguration*  NAS:  ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST |
| 16a2 | The UE transmits an *RRCConnectionReconfigurationComplete* message to confirm the establishment of the data radio bearer associated with the default EPS. | --> | RRC: *RRCConnectionReconfigurationComplete* |
| 16a3 | The UE transmits an ACTIVATE DEDICATED EPS BEARER CONTEXT ACCEPT message. | --> | RRC: ULInformationTransfer  NAS:ACTIVATE DEDICATED EPS BEARER CONTEXT ACCEPT |
| NOTE 1: User plane signalling can be SIP or HTTP signalling. | | | |

Table 5.4.3.3-2: Void

5.4.3.4 Specific message contents

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

### 5.4.3A Void

### 5.4.3B Void

### 5.4.4 Generic Test Procedure for MCX CT communication in E-UTRA

5.4.4.1 Initial conditions

System Simulator:

- SS (MCX server)

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

IUT:

- UE (MCX client):

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

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

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

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

5.4.4.2 Definition of system information messages

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

5.4.4.3 Procedure

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

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

Table 5.4.4.3-2: Void

5.4.4.4 Specific message contents

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

### 5.4.4A Void

### 5.4.4B Void

### 5.4.5 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 KD ID | The MSB of KD ID of the new KD |  |  |
| KD 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 KD-sess ID | the 8 most significant bits of the KD-sess ID |  |  |
| KD 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 KD ID | Any allowed value |  |  |
| KD 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* |
| 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 Void

## 5.5 Default message and other information elements content

### 5.5.1 General

The following conditions apply throughout clause 5.5:

Table 5.5.1-1: Conditions

|  |  |
| --- | --- |
| Condition | Explanation |
| ON-NETWORK | Message/IE sent only in on-network scenario. |
| OFF-NETWORK | Message/IE sent only in off-network scenario. |
| PRIVATE-CALL | Message/IE sent only as part of a Private call handling. |
| GROUP-CALL | Message/IE sent only as part of a Group call handling. |
| 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") |  |  |
|  | same value as in the INVITE |  |  | NON-2XX |
| SIP-Version | "SIP/2.0" |  |  |  |
| **Via** | same as in the INVITE but with updated via-branches in case of an ACK for 2xx response | see Table 5.5.2.5.2-1 | RFC 3261 [22] |  |
|  | same as in the INVITE (with the same via-branches) |  |  | NON-2XX |
| **Route** | not present |  | RFC 3261 [22] |  |
| **From** |  |  | RFC 3261 [22] |  |
| addr-spec | same URI as in the From-header of the INVITE | remote URI of the dialog (from the UE's point of view) |  |  |
| tag | same tag as in the From-header of the INVITE | remote tag of the dialog (from the UE's point of view) |  |  |
| **To** |  |  | RFC 3261 [22] |  |
| addr-spec | same URI as in the To-header of the INVITE | local URI of the dialog (from the UE's point of view) |  |  |
| tag | same tag as in the To-header of the response which has established the dialog | local tag of the dialog (from the UE's point of view) |  |  |
| **Call-ID** |  |  | RFC 3261 [22] |  |
| callid | Same value as in INVITE | Call-Id of the dialog |  |  |
| **Cseq** |  |  | RFC 3261 [22] |  |
| value | Same value as in INVITE |  |  |  |
| method | "ACK" |  |  |  |
| **Max-Forwards** |  |  | RFC 3261 [22] |  |
| value | "68" | The recommended initial value is 70 in RFC 3261.  Assuming 2 hops as according to the Via header this results in a value of 68 in the message sent to the UE |  |  |
| **Content-Length** |  |  | RFC 3261 [22] |  |
| value | "0" | No message body included |  |  |

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

#### 5.5.2.2 SIP BYE

##### 5.5.2.2.1 SIP BYE from the UE

Table 5.5.2.2.1-1: SIP BYE from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.229 [16], clause A.2.1.4.3, A.2.2.4.3 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Request-Line** |  |  | RFC 3261 [22] |  |
| Method | "BYE" |  |  |  |
| Request-URI | same URI as the SS has sent earlier in the Contact header of a message within the same dialog | Contact URI of the recipient of the BYE |  |  |
| SIP-Version | "SIP/2.0" |  |  |  |
| **Via** |  |  | RFC 3261 [22] |  |
| sent-protocol | "SIP/2.0/UDP" |  |  | UDP |
|  | "SIP/2.0/TCP" |  |  | TCP |
| sent-by | same value as in INVITE message |  |  |  |
| sent-by |  |  |  | MT\_CALL |
| host | IP address or FQDN | Either the UE’s IP address or its home domain name |  |  |
| port | protected server port of the UE | as assigned during registration |  |  |
| via-branch | Value starting with 'z9hG4bK' |  |  |  |
| **Route** |  |  | RFC 3261 [22] |  |
| route-param list | URIs of the Record-Route header sent to the UE in the response which has established the dialog, in reverse order |  |  |  |
|  | URIs of the Record-Route header sent to the UE in the INVITE |  |  | MT\_CALL |
| **From** |  |  | RFC 3261 [22] |  |
| addr-spec | Same URI of the UE as used earlier in the dialog | Local URI of the dialog (from the UE's point of view) |  |  |
| tag | Same tag of the UE as used earlier in the dialog | Local tag of the dialog ID (from the UE's point of view) |  |  |
| **To** |  |  | RFC 3261 [22] |  |
| addr-spec | Same URI of the SS as used earlier in the dialogURI | Remote URI of the dialog (from the UE's point of view) |  |  |
| tag | Same tag of the SS as used earlier in the dialog | Remote tag of the dialog ID (from the UE's point of view) |  |  |
| **Call-ID** |  |  | RFC 3261 [22] |  |
| callid | same value as in INVITE message |  |  |  |
| **CSeq** |  |  | RFC 3261 [22] |  |
| value | value of CSeq sent by the endpoint within its previous request in the same dialog but increased by one |  |  |  |
| method | "BYE" |  |  |  |
| **Require** |  |  | RFC 3261 [22]  RFC 3329 [53] |  |
| option-tag | "sec-agree" |  |  |  |
| **Proxy-Require** |  |  | RFC 3261 [22]  RFC 3329 [53] |  |
| option-tag | "sec-agree" |  |  |  |
| **Security-Verify** |  |  | RFC 3329 [53] |  |
| sec-mechanism | same value as Security -Server header sent by SS during registration |  |  |  |
| **Max-Forwards** |  |  | RFC 3261[22] |  |
| value | any allowed value | Non-zero value |  |  |
| **P-Access-Network-Info** |  |  | RFC 7315 [52]  RFC 7913 [51] |  |
| access-net-spec | Access network technology and, if applicable, the cell ID |  |  |  |
| **Content-Length** | if present |  | RFC 3261 [22] |  |
| value | "0" | No message body included |  |  |

##### 5.5.2.2.2 SIP BYE from the SS

Table 5.5.2.2.2-1: 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] |  |
| **Route** | Not present |  | RFC 3261 [22] |  |
| **From** |  |  | RFC 3261 [22] |  |
| addr-spec | Same URI of the SS as used earlier in the dialog | Remote URI of the dialog (from the UE's point of view) |  |  |
| tag | Same tag of the SS as used earlier in the dialog | Remote tag of the dialog (from the UE's point of view) |  |  |
| **To** |  |  | RFC 3261 [22] |  |
| addr-spec | Same URI of the UE as used earlier in the dialog | Local URI of the dialog (from the UE's point of view) |  |  |
| tag | Same tag of the UE as used earlier in the dialog | Local tag of the dialog (from the UE's point of view) |  |  |
| **Call-ID** |  |  | RFC 3261 [22] |  |
| callid | same value as in INVITE message |  |  |  |
| **CSeq** |  |  | RFC 3261 [22] |  |
| value | value of CSeq sent by the endpoint within its previous request in the same dialog but increased by one |  |  |  |
| method | "BYE" |  |  |  |
| **Max-Forwards** |  |  | RFC 3261[22] |  |
| value | "68" | The recommended initial value is 70 in RFC 3261.  Assuming 2 hops as according to the Via header this results in a value of 68 in the message sent to the UE |  |  |
| **Content-Length** |  |  | RFC 3261 [22] |  |
| value | "0" | No message body included |  |  |

#### 5.5.2.3 SIP CANCEL

This message is sent by the SS.

Table 5.5.2.3-1: SIP CANCEL

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

#### 5.5.2.4 SIP INFO

This message is sent by the SS.

Table 5.5.2.4-1: SIP INFO

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 |  |  |  |
|  | tsc\_MCVideo\_PublicServiceId\_A |  |  | MCVIDEO |
|  | tsc\_MCData\_PublicServiceId\_A |  |  | MCDATA |
| **Call-ID** |  |  | RFC 3261 [22] |  |
| Callid | same value as in the INVITE |  |  |  |
| **CSeq** |  |  | RFC 3261 [22] |  |
| value | value of CSeq sent by the SS within its previous request in the same dialog but increased by one |  |  |  |
| Method | "INFO" |  |  |  |
| **Max-Forwards** |  |  | RFC 3261 [22] |  |
| value | "70" | The recommended initial value is 70 in RFC 3261.  Editor's Note: to be changed to realistic value taking into account number of hops |  |  |
| **Content-Length** |  |  | RFC 3261 [22] |  |
| value | length of message body |  |  |  |
| **Message Body** | any allowed value |  |  |  |

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

#### 5.5.2.5 SIP INVITE

##### 5.5.2.5.1 SIP INVITE from the UE

Table 5.5.2.5.1-1: SIP INVITE from the UE

| 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 |  | MCPTT |
|  | tsc\_MCVideo\_PublicServiceId\_A | The public service identity identifying the participating MCVideo function serving the MCVideo user |  | MCVIDEO |
|  | tsc\_MCData\_PublicServiceId\_A | The public service identity identifying the participating MCData function serving the MCData user |  | MCDATA |
| Request-URI | same URI as the SS has sent earlier in the Contact header of a message within the same dialog | Contact URI of the recipient of the BYE |  | re\_INVITE |
| SIP-Version | "SIP/2.0" |  |  |  |
| **Via** |  |  | RFC 3261 [22]  RFC 3581 [55] |  |
| sent-protocol | "SIP/2.0/UDP" | UE accesses the server via UDP |  | UDP |
|  | "SIP/2.0/TCP" | UE accesses the server via TCP |  | TCP |
| sent-by |  |  |  |  |
| host | IP address or FQDN | Either the UE’s IP address or its home domain name |  |  |
| port | protected server port of the UE | as assigned during registration |  |  |
| via-branch | Value starting with 'z9hG4bK' |  |  |  |
| **Route** |  |  | RFC 3261 [22] |  |
| addr-spec[1] | SIP URI |  |  |  |
| user-info and host | P-CSCF address of the SS | P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery |  |  |
| port | protected server port of the SS | as assigned during registration |  |  |
| uri-parameters | "lr" |  |  |  |
| addr-spec[2] | SIP URI |  |  |  |
| user-info and host | "scscf.3gpp.org" | same value as in the Service-Route header field of the 200 OK response to REGISTER |  |  |
| port | not present |  |  |  |
| uri-parameters | "lr" |  |  |  |
| **Route** |  |  | RFC 3261 [22] | re\_INVITE |
| route-param list | URIs of the Record-Route header sent to the UE in the response which has established the dialog, in reverse order |  |  |  |
|  | URIs of the Record-Route header sent to the UE in the INVITE |  |  | MT\_CALL |
| **From** |  |  | RFC 3261 [22] |  |
| 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] |  |
| addr-spec | SIP URI |  |  |  |
| user-info and host | IP address or FQDN |  |  |  |
| port | protected server port of UE | as assigned during registration |  |  |
| feature-param | "+g.3gpp.mcptt" | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Push To Talk (MCPTT) communication. |  | MCPTT |
|  | "+g.3gpp.mcvideo" | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Video (MCVideo) communication. |  | MCVIDEO |
|  | "+g.3gpp.mcdata.sds" | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports mission critical data (MCData) service.communication. |  | MCDATA\_SDS |
|  | "+g.3gpp.mcdata.fd" | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports mission critical data (MCData) service.communication. |  | MCDATA\_FD |
| feature-param | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt" | This URN indicates that the device has the capabilities to support the mission critical push to talk (MCPTT) service. |  | MCPTT |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" | This URN indicates that the device has the capabilities to support the Mission Critical Video (MCVideo) communication. |  | MCVIDEO |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" | This URN indicates that the device has the capabilities to support the mission critical data (MCData) service. |  | MCDATA\_SDS |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd" | This URN indicates that the device has the capabilities to support the mission critical data (MCData) service. |  | MCDATA\_FD |
| feature-param | "audio" | This feature tag indicates that the device supports audio as a streaming media type. |  | MCPTT OR MCVIDEO |
| feature-param | "video" | This feature tag indicates that the device supports video as a streaming media type. |  | MCVIDEO |
| feature-param | "text" | This feature tag indicates that the device supports text as a streaming media type. |  | MCDATA |
| **Max-Forwards** |  |  | RFC 3261 [22] |  |
| value | any allowed value | Non-zero value |  |  |
| **P-Access-Network-Info** |  |  | RFC 7315 [52] |  |
| access-net-specs | Access network technology and, if applicable, the cell ID | AUTO |  |  |
| **Accept** |  |  | RFC 3261 [22] |  |
| media-range[1] | "application/sdp” |  |  |  |
| media-range[2] | "application/vnd.3gpp.mcptt-info+xml" |  |  | MCPTT |
|  | application/vnd.3gpp.mcvideo-info+xml |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-info+xml" |  |  | MCDATA |
| **P-Preferred-Service** |  |  | RFC 6050 [31] |  |
| Service-ID | "urn:urn-7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" |  |  | MCDATA\_SDS |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcdata.fd" |  |  | MCDATA\_FD |
| **P-Preferred-Identity** | if present |  | RFC 3325 [32] |  |
| PPreferredID-value | same URI as in From-header |  |  |  |
| **Accept-Contact** |  |  | RFC 3841 [29] |  |
| ac-value[1] |  |  |  |  |
| feature-param | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" |  |  | MCDATA\_SDS |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd" |  |  | MCDATA\_FD |
| req-param | "require" |  |  |  |
| explicit-param | "explicit" |  |  |  |
| ac-value[2] |  |  |  |  |
| feature-param | "+g.3gpp.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.mcvideo" |  |  | MCVIDEO |
|  | "+g.3gpp.mcdata.sds" |  |  | MCDATA\_SDS |
|  | "+g.3gpp.mcdata.fd" |  |  | MCDATA\_FD |
| req-param | "require" |  |  |  |
| explicit-param | "explicit" |  |  |  |
| **Priv-Answer-Mode** | not present |  |  |  |
| **Answer-Mode** | not present |  | RFC 5373 [34] | re\_INVITE |
| **Answer-Mode** |  |  | RFC 5373 [34] |  |
| answer-mode-value | "Auto" |  |  |  |
| answer-mode-value | "Manual" |  |  | MANUAL |
| **Resource-Priority** |  |  | RFC 4412 [40]  RFC 7134 [57]  RFC 8101 [45] | EMERGENCY-CALL or IMMPERIL-CALL |
| r-value |  |  |  | EMERGENCY-CALL |
| namespace | value of the <resource-priority-namespace> element contained in the <emergency-resource-priority> element contained in the <OnNetwork> element of the MCX service configuration documents | As configured in Table 5.5.8.4-1 |  |  |
| 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 |  |  | MCPTT |
|  | SDP Message as described in Table 5.5.3.1.1-2 |  |  | MCVIDEO |
|  | SDP Message as described in Table 5.5.3.1.1-3 |  |  | MCDATA |
| MIME body part |  | **MCPTT Info/MCVideo/MCData** |  |  |
| MIME-part-headers |  |  |  |  |
| **Content-Type** | "application/vnd.3gpp.mcptt-info+xml" |  |  | MCPTT |
|  | "application/vnd.3gpp.mcvideo-info+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-info+xml" |  |  | MCDATA |
| Content-ID | any value | Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | MCPTT-Info as described in Table 5.5.3.2.1-1 |  | TS 24.379 [9] clause F.1 | MCPTT |
|  | MCVideo-Info as described in Table 5.5.3.2.1-2 |  | TS 24.281 [86] clause F.1 | MCVIDEO |
|  | MCData-Info as described in Table 5.5.3.2.1-3 |  | TS 24.282 [87] clause D.1 | MCDATA |
| MIME body part |  | **Resource list** | RFC 5366 [35] | PRIVATE-CALL OR MCD\_1to1 |
| MIME-part-headers |  |  |  |  |
| **Content-Type** | "application/resource-lists+xml" |  |  |  |
| Content-ID | any value | Unique URL identifying the Resource-lists XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | As described in Table 5.5.3.3.1-1 |  |  | MCPTT |
|  | As described in Table 5.5.3.3.1-2 |  |  | MCVIDEO |
|  | As described in Table 5.5.3.3.1-3 |  |  | MCDATA |
| 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. |  | MCPTT |
|  | "application/vnd.3gpp.mcvideo-location-info+xml" | This MIME part shall be included if the MCVideo-Info 'alert-ind' element sent in the MCVideo-Info is set to true. |  | MCVIDEO |
| Content-ID | any value | Unique URL identifying the Location-info XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | Location-info as described in Table 5.5.3.4.1-1 |  | TS 24.379 [9] clause F.3 | MCPTT |
|  | Location-info as described in Table 5.5.3.4.1-2 |  | TS 24.281 [86] clause F.3 | MCVIDEO |
| MIME body part |  | **Signature** |  |  |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/vnd.3gpp.mcptt-signed+xml" |  | TS 24.379 [9] |  |
| MIME-part-body | Signatures for XML MIME bodies as described in Table 5.5.13.1-1 |  | TS 24.379 [9] |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| MANUAL | Call establishment with manual commencement mode |
| MCD\_1to1 | A one-to-one MCData call |
| MCDATA\_SDS | SDS message or SDS disposition notification |
| MCDATA\_FD | FD message or FD disposition notification |
| re\_INVITE | INVITE within a dialog |
| ALERT\_IND | MCPTT emergency alert is required as specified for the test case or automatically initiated by the client for an emergency call (in case of condition EMERGENCY-CALL when pc\_MCX\_EmergencyIndWithAlertInd=true);  ⇒ <alert-ind> is set to true in the mcptt-info. |
| NOTE: For further conditions see table 5.5.1-1 | |

##### 5.5.2.5.2 SIP INVITE from the SS

Table 5.5.2.5.2-1: SIP INVITE from the SS

| Derivation Path: TS 24.229 [16], clause A.2.1.4.7, A.2.2.4.7 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Request-Line** |  |  | RFC 3261 [22]  RFC 5031 [54] |  |
| Method | "INVITE" |  |  |  |
| Request-URI | SIP URI of the UE’s contact address as provided in the Contact-header of the REGISTER message |  |  |  |
| Request-URI | same URI as the UE has sent earlier in the Contact header of a response within the same dialog | Contact URI of the UE |  | re\_INVITE |
| SIP-Version | "SIP/2.0" |  |  |  |
| **Via** |  |  | RFC 3261 [22]  RFC 3581 [55] |  |
| sent-protocol[1] | "SIP/2.0/TCP" |  |  |  |
| sent-by[1] |  | Address of the P-CSCF that communicates with the called party |  |  |
| host | P-CSCF address of the SS | P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery |  |  |
| port | protected server port of the SS | as assigned during registration |  |  |
| via-branch[1] | Value assigned by the SS starting with 'z9hG4bK' |  |  |  |
| sent-protocol[2] | "SIP/2.0/UDP" |  |  |  |
| sent-by[2] |  | Address of the other endpoint (the caller) |  |  |
| host | Host name of the SIP URI being used in the From header |  |  |  |
| port | Same port number as in Contact-header | Caller’s port number |  |  |
| via-branch[2] | Value assigned by the SS starting with 'z9hG4bK' |  |  |  |
| **Record-Route** |  | Record-Route corresponding to the Via header | RFC 3261 [22] |  |
| addr-spec[1] | SIP URI | SIP URI corresponding to first entry of Via header |  |  |
| user-info and host | P-CSCF address of the SS | P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery |  |  |
| port | protected server port of the SS | as assigned during registration |  |  |
| uri-parameters | "lr" |  |  |  |
| addr-spec[2] | SIP URI |  |  |  |
| user-info and host | “term@scscf1.3gpp.org” |  |  |  |
| port | not present |  |  |  |
| uri-parameters | "lr" |  |  |  |
| addr-spec[3] | SIP URI |  |  |  |
| user-info and host | “orig@scscf2.3gpp.org” |  |  |  |
| port | not present |  |  |  |
| uri-parameters | "lr" |  |  |  |
| addr-spec[4] | SIP URI |  |  |  |
| user-info and host | “pcscf2.3gpp.org” |  |  |  |
| port | not present |  |  |  |
| 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 |  | MCPTT |
|  | tsc\_MCVideo\_PublicServiceId\_A | SIP URI of the calling UE |  | MCVIDEO |
|  | tsc\_MCData\_PublicServiceId\_A | SIP URI of the calling UE |  | MCDATA |
| port | not present |  |  |  |
| tag | Value assigned by the SS |  |  |  |
| **From** |  |  | RFC 3261 [22] | re\_INVITE |
| addr-spec | Same URI of the SS as used earlier in the dialog | Remote URI of the dialog (from the UE's point of view) |  |  |
| tag | Same tag of the SS as used earlier in the dialog | Remote tag of the dialog (from the UE's point of view) |  |  |
| **To** |  |  | RFC 3261 [22]  RFC 5031 [54] |  |
| addr-spec |  |  |  |  |
| user-info and host | px\_MCX\_SIP\_PublicUserId\_A\_1 | Default public user ID (IMPU) as stored in the UICC |  |  |
| port | not present |  |  |  |
| tag | not present |  |  |  |
| **To** |  |  | RFC 3261 [22] | re\_INVITE |
| addr-spec | Same URI of the UE as used earlier in the dialog | Local URI of the dialog (from the UE's point of view) |  |  |
| tag | Same tag of the UE as used earlier in the dialog | Local tag of the dialog (from the UE's point of view) |  |  |
| **Call-ID** |  |  | RFC 3261 [22] |  |
| callid | Value assigned by the SS |  |  |  |
| **Call-ID** |  |  | RFC 3261 [22] | re\_INVITE |
| callid | same value as in INVITE creating the dialog |  |  |  |
| **CSeq** |  |  | RFC 3261 [22] |  |
| value | Value assigned by the SS |  |  |  |
| value | value of CSeq sent by the endpoint within its previous request in the same dialog but increased by one |  |  | re\_INVITE |
| method | "INVITE" |  |  |  |
| **Supported** |  |  | RFC 3261 [22] |  |
| option-tag | "100rel" | This option tag indicates that the UA can send or receive reliable provisional responses. |  |  |
| option-tag | "timer" |  |  |  |
| option-tag | "tdialog" |  |  |  |
| option-tag | "norefersub" |  |  |  |
| **P-Called-Party-ID** |  |  | RFC 7315 [52] |  |
| called-pty-id-spec | Same public user ID as used in the To-header |  |  |  |
| **Session-Expires** |  |  | RFC 4028 [30] |  |
| generic-param | "1800" | The recommended initial value is 1800 in RFC 4028 [30]. |  |  |
| **P-Early-Media** |  |  | RFC 5009 [60] |  |
| em-parm | "inactive" |  |  |  |
| **Require** |  |  | RFC 3261 [22]  RFC 3312 [56]  RFC 3329 [53] |  |
| option-tag | "sec-agree" |  |  |  |
| **Proxy-Require** |  |  | RFC 3261 [22]  RFC 3329 [53] |  |
| option-tag | "sec-agree" |  |  |  |
| **P-Asserted-Identity** |  |  | RFC 3325 [32] |  |
| addr-spec |  |  |  |  |
| user-info and host | same URI as in From-header |  |  |  |
| port | not present |  |  |  |
| **Contact** |  |  | RFC 3261 [22]  RFC 3840 [33] |  |
| addr-spec | SIP URI |  |  |  |
| user-info and host | tsc\_MCPTT\_SessionId |  |  | MCPTT |
|  | tsc\_MCVideo\_SessionId |  |  | MCVIDEO |
|  | tsc\_MCData\_SessionId |  |  | MCDATA |
| port | Value assigned by the SS |  |  |  |
| feature-param | "+g.3gpp.mcptt" | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Push To Talk (MCPTT) communication. | RFC 3840 [33] clause 9 | MCPTT |
|  | "+g.3gpp.mcvideo" | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Video (MCVideo) communication. | RFC 3840 [33] clause 9 | MCVIDEO |
|  | "+g.3gpp.mcdata.sds" | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Data (MCData) communication. | RFC 3840 [33] clause 9 | MCDATA\_SDS |
|  | "+g.3gpp.mcdata.fd" | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Data (MCData) communication. | RFC 3840 [33] clause 9 | MCDATA\_FD |
| feature-param | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt" | This URN indicates that the device has the capabilities to support the mission critical push to talk (MCPTT) service. | RFC 3840 [33] clause 9 | MCPTT |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" | This URN indicates that the device has the capabilities to support the mission critical video (MCVideo) service. | RFC 3840 [33] clause 9 | MCVIDEO |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" | This URN indicates that the device has the capabilities to support the mission critical data (MCData) SDS service. | RFC 3840 [33] clause 9 | MCDATA\_SDS |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd" | This URN indicates that the device has the capabilities to support the mission critical data (MCData) FD service. | RFC 3840 [33] clause 9 | MCDATA\_FD |
| feature-param | "audio" | This feature tag indicates that the device supports audio as a streaming media type. | RFC 3840 [33] clause 10.1 | MCPTT OR MCVIDEO |
| feature-param | "video" | This feature tag indicates that the device supports video as a streaming media type. |  | MCVIDEO |
| feature-param | "text" | This feature tag indicates that the device supports text as a streaming media type. |  | MCDATA |
| feature-param | "isfocus" |  |  |  |
| **Max-Forwards** |  |  | RFC 3261 [22] |  |
| value | "68" | The recommended initial value is 70 in RFC 3261 [22].  Assuming 2 hops as according to the Via header this results in a value of 68 in the message sent to the UE |  |  |
| **Accept** |  |  | RFC 3261 [22] |  |
| media-range[1] | "application/sdp " |  |  |  |
| media-range[2] | "application/vnd.3gpp.mcptt-info+xml" |  |  | MCPTT |
|  | "application/vnd.3gpp.mcvideo-info+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-info+xml" |  |  | MCDATA |
| **Accept-Contact** |  |  | RFC 3841 [29] |  |
| ac-value[1] |  |  |  |  |
| feature-param | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" |  |  | MCDATA\_SDS |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd" |  |  | MCDATA\_FD |
| req-param | "require" |  |  |  |
| explicit-param | "explicit" |  |  |  |
| ac-value[2] |  |  |  |  |
| feature-param | "+g.3gpp.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.mcvideo" |  |  | MCVIDEO |
|  | "+g.3gpp.mcdata.sds" |  |  | MCDATA\_SDS |
|  | "+g.3gpp.mcdata.fd" |  |  | MCDATA\_FD |
| req-param | "require" |  |  |  |
| explicit-param | "explicit" |  |  |  |
| **Answer-Mode** | not present |  | RFC 5373 [34]  TS 24.379 [9] clause 6.3.2.2.6.3 | re-INVITE OR FIRST-TO-ANSWER |
| **Answer-Mode** |  |  | RFC 5373 [34] |  |
| answer-mode-value | "Auto" |  |  |  |
| answer-mode-value | "Manual" |  |  | MANUAL |
| **Priv-Answer-Mode** |  |  |  | FIRST-TO-ANSWER |
| answer-mode-value | "Manual" |  |  |  |
| **Content-Type** |  |  | RFC 5621 [58] |  |
| media-type | "multipart/mixed" |  |  |  |
| **Content-Length** |  |  | RFC 3261 [22] |  |
| Value | length of message-body |  |  |  |
| **Message-body** |  |  | RFC 3261 [22] |  |
| MIME body part |  | **SDP message** |  |  |
| MIME-part-headers |  |  |  |  |
| MIME-Content-Type | "application/sdp" |  |  |  |
| MIME-part-body | SDP Message as described in Table 5.5.3.1.2-1 |  | RFC 4566 [27] | MCPTT |
|  | SDP Message as described in Table 5.5.3.1.2-2 |  | RFC 4566 [27] | MCVIDEO |
|  | SDP Message as described in Table 5.5.3.1.2-3 |  | RFC 4566 [27] | MCDATA |
| MIME body part |  | **MCPTT/MCVideo/MCData Info** |  |  |
| MIME-part-headers |  |  |  |  |
| MIME-Content-Type | "application/vnd.3gpp.mcptt-info+xml" |  |  | MCPTT |
|  | "application/vnd.3gpp.mcvideo-info+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-info+xml" |  |  | MCDATA |
| Content-ID | Unique id in format of a Message-ID assigned by the SS | Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | MCPTT-Info as described in Table 5.5.3.2.2-1 |  |  | MCPTT |
|  | MCVideo-Info as described in Table 5.5.3.2.2-2 |  |  | MCVIDEO |
|  | As described in Table 5.5.3.2.2-3 |  |  | MCDATA |
| MIME body part |  | **Location info** |  | LOCATION-INFO |
| MIME-part-headers |  |  |  |  |
| MIME-Content-Type | "application/vnd.3gpp.mcptt-location-info+xml" |  |  | MCPTT |
|  | "application/vnd.3gpp.mcvideo-location-info+xml" |  |  | MCVIDEO |
| Content-ID | Unique id in format of a Message-ID assigned by the SS | Unique URL identifying the Location-info XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | Location-info as described in Table 5.5.3.4.2-1 |  | TS 24.379 [9] clause F.3 | MCPTT |
|  | Location-info as described in Table 5.5.3.4.2-2 |  | TS 24.281 [86] clause F.3 | MCVIDEO |
| MIME body part |  | **Signature** |  |  |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/vnd.3gpp.mcptt-signed+xml" |  | TS 24.379 [9] |  |
| MIME-part-body | Signatures for XML MIME bodies as described in Table 5.5.13.1-2 |  | TS 24.379 [9] |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| MANUAL | Call establishment with manual commencement mode |
| re\_INVITE | INVITE within a dialog |
| MCD\_1to1 | A one-to-one MCData call |
| MCDATA\_SDS | SDS message or SDS disposition notification |
| MCDATA\_FD | FD message or FD disposition notification |
| For further conditions see table 5.5.1-1 | |

#### 5.5.2.6 Void

#### 5.5.2.7 SIP MESSAGE

##### 5.5.2.7.1 SIP MESSAGE from the UE

Table 5.5.2.7.1-1: SIP MESSAGE from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 |  | MCPTT |
|  | tsc\_MCVideo\_PublicServiceId\_A | The public service identity identifying the originating participating MCVideo function serving the MCVideo user |  | MCVIDEO |
|  | tsc\_MCData\_PublicServiceId\_A | The public service identity identifying the originating participating MCData function serving the MCData user |  | MCDATA |
|  | same URI as provided in the Asserted-Identity header field of the SIP MESSAGE for location reporting configuration |  |  | LOCATION-REPORT |
| SIP-Version | "SIP/2.0*"* |  |  |  |
| **Via** |  |  | RFC 3261 [22]  RFC 3581 [55] |  |
| sent-protocol | "SIP/2.0/UDP" |  |  | UDP |
|  | "SIP/2.0/TCP" |  |  | TCP |
| sent-by |  |  |  |  |
| host | IP address or FQDN | Either the UE’s IP address or its home domain name |  |  |
| port | protected server port of the UE | as assigned during registration |  |  |
| via-branch | Value starting with 'z9hG4bK' |  |  |  |
| **From** |  |  | RFC 3261 [22] |  |
| addr-spec |  |  |  |  |
| user-info and host | Default public user id (px\_MCX\_SIP\_PublicUserId\_A\_1) | The URI of the UE |  |  |
| port | not present |  |  |  |
| tag | any allowed value |  |  |  |
| **To** |  |  | RFC 3261 [22]  RFC 5031 [54] |  |
| addr-spec |  |  |  |  |
| user-info and host | tsc\_MCPTT\_PublicServiceId\_A | The URI of the SS |  | MCPTT |
|  | tsc\_MCVideo\_PublicServiceId\_A | The URI of the SS |  | MCVIDEO |
|  | tsc\_MCData\_PublicServiceId\_A | The URI of the SS |  | MCDATA |
| port | not present |  |  |  |
| tag | not present |  |  |  |
| **Call-ID** |  |  | RFC 3261 [22] |  |
| callid | any allowed value |  |  |  |
| **Cseq** |  |  | RFC 3261 [22] |  |
| value | any allowed value |  |  |  |
| method | "MESSAGE" |  |  |  |
| **Max-Forwards** |  |  | RFC 3261 [22] |  |
| value | any allowed value | Non-zero value |  |  |
| **P-Access-Network-Info** |  |  | RFC 7315 [52] |  |
| access-net-spec | Access network technology and, if applicable, the cell ID |  |  |  |
| **Route** | same as specified for INVITE sent by the UE in Table 5.5.2.5.1-1 |  | RFC 3261 [22] |  |
| **Accept-Contact** |  |  | RFC 3841 [29] |  |
| ac-value[1] |  |  |  |  |
| feature-param | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata" |  |  | MCDATA |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" |  |  | MCDATA\_SDS |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd" |  |  | MCDATA\_FD |
| req-param | "require" |  |  |  |
| explicit-param | "explicit" |  |  |  |
| ac-value[2] |  |  |  | MCDATA\_SDS, MCDATA\_FD |
| feature-param | "+g.3gpp.mcdata.sds" |  |  | MCDATA\_SDS |
| "+g.3gpp.mcdata.fd" |  |  | MCDATA\_FD |
| req-param | "require" |  |  |  |
| explicit-param | "explicit" |  |  |  |
| **P-Preferred-Service** |  |  | RFC 6050 [31] |  |
| Service-ID | "urn:urn-7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcdata" |  |  | MCDATA |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" |  |  | MCDATA\_SDS |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcdata.fd" |  |  | MCDATA\_FD |
| **P-Preferred-Identity** | if present |  | RFC 3325 [32] |  |
| PPreferredID-value | same URI as in From-header |  |  |  |
| **Content-Type** |  |  | RFC 5621 [58] |  |
| media-type | "multipart/mixed" |  |  |  |
| **Content-Length** | present in case of TCP and when there is a message body (otherwise optional) |  | RFC 3261 [22] |  |
| value | any value | length of message-body |  |  |
| **Message-body** |  |  | RFC 3261 [22] |  |
| MIME body part |  | **MCPTT/MCVideo/MCData Info** |  |  |
| MIME-part-headers |  |  |  |  |
| MIME-Content-Type | "application/vnd.3gpp.mcptt-info+xml" |  |  | MCPTT |
|  | "application/vnd.3gpp.mcvideo-info+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-info+xml" |  |  | MCDATA |
| Content-ID | any value | Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | MCPTT-Info as described in Table 5.5.3.2.1-1 |  | TS 24.379 [9] clause F.1 | MCPTT |
|  | MCVideo-Info as described in Table 5.5.3.2.1-2 |  | TS 24.281 [86] clause F.1 | MCVIDEO |
|  | MCData-Info as described in Table 5.5.3.2.1-3 |  |  | MCDATA |
| MIME body part |  | **Affiliation-Command** |  | AFFILIATION |
| MIME-part-headers |  |  |  |  |
| MIME-Content-Type | "application/vnd.3gpp.mcptt-affiliation-command+xml" |  |  | MCPTT |
|  | "application/vnd.3gpp. mcvideo-affiliation-command+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp. mcdata-affiliation-command+xml" |  |  | MCDATA |
| Content-ID | any value | Unique URL identifying the affiliation-command XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | MCPTT-Affiliation-Command as described in Table 5.5.3.7-1 |  | TS 24.379 [9] clause F.4 | MCPTT |
|  | MCVideo-Affiliation-Command as described in Table 5.5.3.7-2 |  | TS 24.281 [86] clause F.4 | MCVIDEO |
|  | MCData-Affiliation-Command as described in Table 5.5.3.7-3 |  | TS 24.282 [87] clause D.3 | MCDATA |
| MIME body part |  | **Resource lists** | RFC 5366 [35] | RESOURCE\_LISTS |
| MIME-part-headers |  |  |  |  |
| MIME-Content-Type | "application/resource-lists+xml" |  |  |  |
| Content-ID | any value | Unique URL identifying the Resource-lists XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | Resource-lists as described in Table 5.5.3.3.1-1 |  |  | MCPTT |
|  | Resource-lists as described in Table 5.5.3.3.1-2 |  |  | MCVIDEO |
|  | Resource-lists as described in Table 5.5.3.3.1-3 |  |  | MCDATA |
| MIME body part |  | **Location info** | TS 24.379 [9] clause F.3 | LOCATION-INFO, LOCATION\_REPORT |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/vnd.3gpp.mcptt-location-info+xml" | This MIME part shall be included if the MCPTT-Info 'alert-ind' element sent in the MCPTT-Info is set to true. |  | MCPTT |
|  | "application/vnd.3gpp.mcvideo-location-info+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-location-info+xml" |  |  | MCDATA |
| Content-ID | any value | Unique URL identifying the Location-info XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | Location-info as described in Table 5.5.3.4.1-1 |  |  | MCPTT |
|  | Location-info as described in Table 5.5.3.4.1-2 |  |  | MCVIDEO |
|  | Location-info as described in Table 5.5.3.4.1-3 |  |  | MCDATA |
| MIME body part |  | **MIKEY message** |  | MIKEY |
| MIME-part-headers |  |  |  |  |
| **Content-Type** | "application/mikey" |  |  |  |
| MIME-part-body | As described in Table 5.5.9.1-2A | MIKEY message, containing the PSK | TS 33.180 [30]  TS 24.282 [87] |  |
| MIME body part |  | **MCData Data signalling message** |  | MCDATA\_SIGNALLING |
| MIME-part-headers |  |  |  |  |
| **Content-Type** | "application/vnd.3gpp.mcdata-signalling" |  |  |  |
| MIME-part-body | SIGNALLING\_PAYLOAD as described in Table 5.5.3.8.1-1 |  | TS 24.282 [87] |  |
| MIME body part |  | **MCData Data message** |  | MCDATA\_PAYLOAD |
| MIME-part-headers |  |  |  |  |
| **Content-Type** | application/vnd.3gpp.mcdata-payload |  |  |  |
| MIME-part-body | DATA\_PAYLOAD as described in Table 5.5.3.9.1-1 |  | TS 24.282 [87] |  |
| MIME body part |  | **Signature** |  |  |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/vnd.3gpp.mcptt-signed+xml" |  | TS 24.379 [9] |  |
| MIME-part-body | Signatures for XML MIME bodies as described in Table 5.5.13.1-1 |  | TS 24.379 [9] |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| RESOURCE\_LISTS | Message-body contains Resource lists |
| LOCATION\_REPORT | Message-body contains location information report according to TS 24.379 [2] clause 13.3.4.2 |
| MIKEY | Message-body contains MIKEY message (e.g. for MCData 1-to-1 communication) |
| MCDATA\_SIGNALLING | Message-body contains MCData Data signalling message |
| MCDATA\_PAYLOAD | Message-body contains MCData Data message (DATA PAYLOAD) |
| MCDATA\_SDS | SDS message or SDS disposition notification |
| MCDATA\_FD | FD message or FD disposition notification |
| For further conditions see table 5.5.1-1 | |

##### 5.5.2.7.2 SIP MESSAGE from the SS

Table 5.5.2.7.2-1: SIP MESSAGE from the SS

| Derivation Path: TS 24.229 [16], clause A.2.1.4.7a, A.2.2.4.7a | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Request-Line** |  |  | RFC 3261 [22]  RFC 5031 [54] |  |
| Method | "MESSAGE" |  |  |  |
| Request-URI | Public user id associated to the MC service id | px\_MCX\_SIP\_PublicUserId\_A\_1 (in general) |  |  |
| SIP-Version | "SIP/2.0*"* |  |  |  |
| **Via** |  |  | RFC 3261 [22]  RFC 3581 [55] |  |
| sent-protocol[1] | "SIP/2.0/TCP" |  |  |  |
| sent-by[1] |  | Address of the P-CSCF that communicates with the called party |  |  |
| ….host | P-CSCF address of the SS | P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery |  |  |
| port | protected server port of the SS | as assigned during registration |  |  |
| via-branch[1] | Value assigned by the SS starting with 'z9hG4bK' |  |  |  |
| sent-protocol[2] | "SIP/2.0/UDP" |  |  |  |
| sent-by[2] |  |  |  |  |
| ….host | “scscf.3gpp.org“ |  |  |  |
| port | Value assigned by the SS | Caller’s port number |  |  |
| via-branch[2] | Value assigned by the SS starting with 'z9hG4bK' |  |  |  |
| sent-protocol[3] | "SIP/2.0/UDP" |  |  |  |
| sent-by[3] |  |  |  |  |
| host | host name of the MC server |  |  |  |
| port | not present |  |  |  |
| via-branch[3] | Value assigned by the SS starting with 'z9hG4bK' |  |  |  |
| **From** |  |  | RFC 3261 [22] |  |
| addr-spec |  |  |  |  |
| user-info and host | tsc\_MCPTT\_PublicServiceId\_A |  |  | MCPTT |
|  | tsc\_MCVideo\_PublicServiceId\_A |  |  | MCVIDEO |
|  | tsc\_MCData\_PublicServiceId\_A |  |  | MCDATA |
| port | not present |  |  |  |
| tag | Value assigned by the SS |  |  |  |
| **To** |  |  | RFC 3261 [22]  RFC 5031 [54] |  |
| addr-spec |  |  |  |  |
| user-info and host | same URI as used as Request URI |  |  |  |
| port | not present |  |  |  |
| tag | not present |  |  |  |
| **Call-ID** |  |  | RFC 3261 [22] |  |
| callid | Value assigned by the SS |  |  |  |
| **Cseq** |  |  | RFC 3261 [22] |  |
| value | Value assigned by the SS |  |  |  |
| method | "MESSAGE" |  |  |  |
| **Max-Forwards** |  |  | RFC 3261 [22] |  |
| value | "67" | The recommended initial value is 70 in RFC 3261.  Assuming 3 hops as according to the Via header this results in a value of 67 in the message sent to the UE |  |  |
| **P-Asserted-Service** |  |  | RFC 6050 [31] | MCDATA\_SDS, MCDATA\_FD |
| Service-ID | "urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" |  |  | MCDATA\_SDS |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcdata.fd" |  |  | MCDATA\_FD |
| **P-Asserted-Service** |  |  | RFC 6050 [31] | AFFILIATION, LOCATION-CONFIG |
| Service-ID | "urn:urn-7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcdata" |  |  | MCDATA |
| **Accept-Contact** |  |  | RFC 3841 [29] |  |
| ac-value[1] |  |  |  |  |
| feature-param | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata" |  |  | MCDATA |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" |  |  | MCDATA\_SDS |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd" |  |  | MCDATA\_FD |
| req-param | "require" |  |  |  |
| explicit-param | "explicit" |  |  |  |
| ac-value[2] |  |  |  | ACCEPT-CONTACT-WITH-MEDIA-FEATURE-TAG |
| feature-param | "+g.3gpp.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.mcvideo" |  |  | MCVIDEO |
|  | "+g.3gpp.mcdata" |  |  | MCDATA |
| req-param | "require" |  |  |  |
| explicit-param | "explicit" |  |  |  |
| ac-value[2] |  |  |  | MCDATA\_SDS, MCDATA\_FD |
| feature-param | "+g.3gpp.mcdata.sds" |  |  | MCDATA\_SDS |
|  | "+g.3gpp.mcdata.fd" |  |  | MCDATA\_FD |
| req-param | "require" |  |  |  |
| explicit-param | "explicit" |  |  |  |
| **P-Asserted-Identity** |  |  | RFC 3325 [32] | MCDATA\_SDS, MCDATA\_FD |
| name-addr | px\_MCX\_SIP\_PublicUserId\_B | The public user identity of the originating MCData User |  |  |
| **P-Asserted-Identity** |  |  | RFC 3325 [32] | LOCATION-CONFIG |
| name-addr | tsc\_MCPTT\_PublicServiceId\_PF\_A | URI of the participating MCPTT function which configures the location reporting at the UE |  | MCPTT |
|  | tsc\_MCVideo\_PublicServiceId\_PF\_A | URI of the participating MCVideo function which configures the location reporting at the UE |  | MCVIDEO |
|  | tsc\_MCData\_PublicServiceId\_PF\_A | URI of the participating MCData function which configures the location reporting at the UE |  | MCDATA |
| **Content-Type** |  |  | RFC 5621 [58] |  |
| media-type | "multipart/mixed" |  |  |  |
| **Content-Length** |  |  | RFC 3261 [22] |  |
| value | length of message-body |  |  |  |
| **Message-body** |  |  | RFC 3261 [22] |  |
| MIME body part |  | **MCPTT/MCVideo/MCData Info** |  |  |
| MIME-part-headers |  |  |  |  |
| MIME-Content-Type | "application/vnd.3gpp.mcptt-info+xml" |  |  | MCPTT |
|  | "application/vnd.3gpp.mcvideo-info+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-info+xml" |  |  | MCDATA |
| Content-ID | Unique id in format of a Message-ID assigned by the SS | Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | MCPTT-Info as described in Table 5.5.3.2.2-1 |  | TS 24.379 [9] clause F.1 | MCPTT |
|  | MCVideo-Info as described in Table 5.5.3.2.2-2 |  | TS 24.281 [86] clause F.1 | MCVIDEO |
|  | MCData-Info as described in Table 5.5.3.2.2-3 |  | TS 24.282 [87] clause D.1.2 | MCDATA |
| MIME body part |  | **Affiliation-Command** |  | AFFILIATION |
| MIME-part-headers |  |  |  |  |
| MIME-Content-Type | "application/vnd.3gpp.mcptt-affiliation-command+xml" |  |  | MCPTT |
|  | "application/vnd.3gpp.mcvideo-affiliation-command+xml" |  |  | MCVIDEO |
|  | "vnd.3gpp.mcdata-affiliation-command+xml" |  |  | MCDATA |
| Content-ID | Unique id in format of a Message-ID assigned by the SS | Unique URL identifying the affiliation-command XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | MCPTT-Affiliation-Command as described in Table 5.5.3.7-1 |  | TS 24.379 [9] clause F.4 | MCPTT |
|  | MCVideo-Affiliation-Command as described in Table 5.5.3.7-2 |  | TS 24.281 [86] clause F.4 | MCVIDEO |
|  | MCData-Affiliation-Command as described in Table 5.5.3.7-3 |  | TS 24.282 [87] clause D.3 | MCDATA |
| MIME body part |  | **Resource lists** | RFC 5366 [35] | RESOURCE\_LISTS |
| MIME-part-headers |  |  |  |  |
| MIME-Content-Type | "application/resource-lists+xml" |  |  |  |
| Content-ID | Unique id in format of a Message-ID assigned by the SS | Unique URL identifying the Resource-lists XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | Resource-lists as described in Table 5.5.3.3.2-1 |  |  | MCPTT |
|  | Resource-lists as described in Table 5.5.3.3.2-2 |  |  | MCVIDEO |
|  | Resource-lists as described in Table 5.5.3.3.2-3 |  |  | MCDATA |
| MIME body part |  | **Location info** |  | LOCATION-INFO, LOCATION\_CONFIG |
| MIME-part-headers |  |  |  |  |
| MIME-Content-Type | "application/vnd.3gpp.mcptt-location-info+xml" |  |  | MCPTT |
|  | "application/vnd.3gpp.mcvideo-location-info+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-location-info+xml" |  |  | MCDATA |
| Content-ID | Unique id in format of a Message-ID assigned by the SS | Unique URL identifying the Location-info XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | Location-info as described in Table 5.5.3.4.2-1 |  | TS 24.379 [9] clause F.3 | MCPTT |
|  | Location-info as described in Table 5.5.3.4.2-2 |  | TS 24.281 [86] clause F.3 | MCVIDEO |
|  | Location-info as described in Table 5.5.3.4.2-3 |  | TS 24.282 [87] clause D.3 | MCDATA |
| MIME body part |  | **MIKEY message** |  | MIKEY |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/mikey" |  |  |  |
| MIME-part-body | As described in Table 5.5.9.1-2 | MIKEY message, containing the PSK | TS 33.180 [30]  TS 24.282 [87] |  |
| MIME body part |  | **MCData Data signalling message** |  | MCDATA\_SIGNALLING |
| MIME-part-headers |  |  |  |  |
| **Content-Type** | "application/vnd.3gpp.mcdata-signalling" |  |  |  |
| MIME-part-body | SIGNALLING PAYLOAD as described in Table 5.5.3.8.2-1 |  | TS 24.282 [87] |  |
| MIME body part |  | **MCData Data message** |  | MCDATA\_PAYLOAD |
| MIME-part-headers |  |  |  |  |
| **Content-Type** | application/vnd.3gpp.mcdata-payload |  |  |  |
| MIME-part-body | DATA\_PAYLOAD as described in Table 5.5.3.9.1-2 |  | TS 24.282 [87] |  |
| MIME body part |  | **Signature** |  |  |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/vnd.3gpp.mcptt-signed+xml" |  | TS 24.379 [9] |  |
| MIME-part-body | Signatures for XML MIME bodies as described in Table 5.5.13.1-2 |  | TS 24.379 [9] |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| RESOURCE\_LISTS | Message-body contains Resource lists |
| LOCATION\_CONFIG | Message-body contains location reporting configuration according to TS 24.379 [2] clause 13.2.2 |
| MIKEY | Message-body contains MIKEY message (e.g. for MCData 1-to-1 communication) |
| MCDATA\_SIGNALLING | Message-body contains MCData Data signalling message |
| MCDATA\_PAYLOAD | Message-body contains MCData Data message (DATA PAYLOAD) |
| MCDATA\_SDS | SDS message or SDS disposition notification |
| MCDATA\_FD | FD message or FD disposition notification |
| ACCEPT-CONTACT-WITH-MEDIA-FEATURE-TAG | Accept-Contact header field contains media feature tag ("+g.3gpp.mcptt", "+g.3gpp.mcvideo" or "+g.3gpp.mcdata") |
| For further conditions see table 5.5.1-1 | |

#### 5.5.2.8 SIP NOTIFY

This message is sent by the SS.

Table 5.5.2.8-1: SIP NOTIFY

| Derivation Path: TS 24.229 [16] clause A.2.1.4.8, A2.2.4.8 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Request-Line** |  |  | RFC 3261 [22] |  |
| Method | "NOTIFY" |  |  |  |
| Request-URI | same URI as the UE has provided earlier in the Contact header of the SUBSCRIBE |  |  |  |
| SIP-Version | "SIP/2.0" |  |  |  |
| **Via** |  |  | RFC 3261 [22] |  |
| sent-protocol[1] | "SIP/2.0/TCP" |  |  |  |
| sent-by[1] |  |  |  |  |
| host | P-CSCF address of the SS | P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery |  |  |
| port | protected server port of the SS |  |  |  |
| via-branch[1] | Value assigned by the SS starting with 'z9hG4bK' |  |  |  |
| sent-protocol[2] | "SIP/2.0/UDP" |  |  |  |
| sent-by[2] |  |  |  |  |
| host | “scscf.3gpp.org“ |  |  |  |
| port | not present |  |  |  |
| via-branch[2] | Value assigned by the SS starting with 'z9hG4bK' |  |  |  |
| sent-protocol[3] | "SIP/2.0/UDP" |  |  |  |
| sent-by[3] |  |  |  |  |
| host | host name of the MC server |  |  |  |
|  | tsc\_MCX\_CMS\_Hostname |  |  | CONFIG |
|  | tsc\_MCX\_GMS\_Hostname |  |  | GROUPCONFIG |
| port | not present |  |  |  |
| via-branch[3] | Value assigned by the SS starting with 'z9hG4bK' |  |  |  |
| **From** |  |  | RFC 3261 [22] |  |
| addr-spec | same URI as received in the To header of the SUBSCRIBE message | Remote URI of the dialog (from the UE's point of view) |  |  |
| tag | same tag as in the To-header of the response which has established the dialog | Remote tag of the dialog (from the UE's point of view) |  |  |
| **To** |  |  | RFC 3261 [22] |  |
| addr-spec | same URI as received in the From header of the SUBSCRIBE message | Local URI of the dialog (from the UE's point of view) |  |  |
| tag | same value as received in From tag of the SUBSCRIBE message | Local tag of the dialog (from the UE's point of view) |  |  |
| **Call-ID** |  |  | RFC 3261 [22] |  |
| callid | same as value received in SUBSCRIBE message |  |  |  |
| **Cseq** |  |  | RFC 3261 [22] |  |
| value | value of CSeq sent by the SS within its previous request in the same dialog but increased by one |  |  |  |
| method | "NOTIFY" |  |  |  |
| **Contact** |  |  | RFC 3261 [22] |  |
| addr-spec |  |  |  |  |
| user-info and host | Same URI as used as Contact-URI in the 200 (OK) for the SUBSCRIBE message |  |  |  |
| port | not present |  |  |  |
| **Event** |  |  | RFC 6665 [39]  RFC 3842 [61] |  |
| event-type | "presence" |  |  | PRESENCE-EVENT |
|  | "xcap-diff" |  |  | CONFIG.  GROUPCONFIG |
|  | "poc-settings" |  |  | POC-SETTINGS-EVENT |
| **Max-Forwards** |  |  | RFC 3261 [22] |  |
| value | "67" | The recommended initial value is 70 in RFC 3261.  Assuming 3 hops as according to the Via header this results in a value of 67 in the message sent to the UE |  |  |
| **Subscription-State** |  |  | RFC 6665 [39] |  |
| substate-value | "active" |  |  |  |
| expires | "7200" |  |  |  |
| **Content-Type** |  |  | RFC 3261 [22]  RFC 3842 [61] |  |
| media-type | “multipart/mixed" |  |  |  |
| **Content-Length** |  |  | RFC 3261 [22] |  |
| value | length of message-body |  |  |  |
| **Message-body** |  |  | RFC 3261 [22] |  |
| MIME body part |  | **PIDF** |  | PRESENCE-EVENT |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/pidf+xml" |  |  |  |
| Content-ID | Unique id in format of a Message-ID assigned by the SS | Unique URL identifying the PIDF XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | PIDF as described in Table 5.5.3.5.2-1 |  | TS 24.379 [9] clause 9.3.1 | MCPTT |
|  | PIDF as described in Table 5.5.3.5.2-2 |  | TS 24.281 [86] clause 8.3.1 | MCVIDEO |
|  | PIDF as described in Table 5.5.3.5.2-3 |  | TS 24.282 [87] clause 8.4.1 | MCDATA |
| MIME body part |  | xcap-diff |  | CONFIG,  GROUPCONFIG |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/xcap-diff+xml" |  |  |  |
| Content-ID | Unique id in format of a Message-ID assigned by the SS | Unique URL identifying the xcap-diff XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| 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 5.5.3.11.2-1 |  |  |  |
| MIME body part |  | Signature |  |  |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/vnd.3gpp.mcptt-signed+xml" |  | TS 24.379 [9] |  |
| MIME-part-body | Signatures for XML MIME bodies as described in Table 5.5.13.1-2 |  | TS 24.379 [9] |  |

#### 5.5.2.9 SIP OPTIONS

Editor’s note: It shall be specified who is sending the message.

Table 5.5.2.9-1: SIP OPTIONS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.229 [16] clause A.2.1.4.9, A2.2.4.9 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Request-Line** |  |  |  |  |
| Method | "OPTIONS" |  |  |  |
| Request-Disposition | px\_MCPTT\_Client\_A\_ID |  |  |  |
|  | px\_MCVideo\_Client\_A\_ID |  |  | MCVIDEO |
|  | px\_MCData\_Client\_A\_ID |  |  | MCDATA |
| SIP-Version | "SIP/2.0" |  |  |  |
| **Via** |  |  | RFC 3261 [22]  RFC 3581 [55] |  |
| sent-protocol | "SIP/2.0/UDP" |  |  |  |
| sent-by | any allowed value | IP address or FQDN and protected server port of the UE |  |  |
| via-branch | any allowed value | Value starting with 'z9hG4bK' |  |  |
| **From** |  |  | RFC 3261 [22] |  |
| addr-spec | px\_MCPTT\_Client\_A\_ID |  |  |  |
|  | px\_MCVideo\_Client\_A\_ID |  |  | MCVIDEO |
|  | px\_MCData\_Client\_A\_ID |  |  | MCDATA |
| tag | "1" |  |  |  |
| **To** |  |  | RFC 3261 [22]  RFC 5031 [54] |  |
| addr-spec | tsc\_MCPTT\_PublicServiceId\_A |  |  |  |
|  | tsc\_MCVideo\_PublicServiceId\_A |  |  | MCVIDEO |
|  | tsc\_MCData\_PublicServiceId\_A |  |  | MCDATA |
| **Call-ID** |  |  | RFC 3261 [22] |  |
| Callid | same value as in the INVITE |  |  |  |
| **CSeq** |  |  | RFC 3261 [22] |  |
| value | value of CSeq sent by the SS within its previous request in the same dialog but increased by one |  |  |  |
| Method | "INFO" |  |  |  |
| **Contact** |  |  | RFC 3261 [22  RFC 3840 [33] |  |
| addr-spec | SIP URI |  |  |  |
| user-info and host | IP address or FQDN (px\_MCPTT\_Client\_A\_ID) |  |  |  |
|  | IP address or FQDN (px\_MCVideo\_Client\_A\_ID) |  |  | MCVIDEO |
|  | IP address or FQDN (px\_MCData\_Client\_A\_ID) |  |  | MCDATA |
| feature-param | "+g.3gpp.mcptt" | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Push To Talk (MCPTT) communication. |  |  |
|  | "+g.3gpp.mcvideo" | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Video (MCVideo) communication. |  | MCVIDEO |
|  | "+g.3gpp.mcdata.sds" | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Data (MCData) communication. |  | MCDATA |
| feature-param | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt" | This URN indicates that the device has the capabilities to support the mission critical push to talk (MCPTT) service. |  |  |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" | This URN indicates that the device has the capabilities to support the mission critical video (MCVideo) service. |  | MCVIDEO |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" | This URN indicates that the device has the capabilities to support the mission critical data (MCData) service. |  | MCDATA |
| feature-param | "audio" | This feature tag indicates that the device supports audio as a streaming media type. |  | MCPTT OR MCVIDEO |
| feature-param | "video" | This feature tag indicates that the device supports video as a streaming media type. |  | MCVIDEO |
| feature-param | "text" | This feature tag indicates that the device supports text as a streaming media type. |  | MCDATA |
| **Accept** |  |  |  |  |
| media-range | "application/sdp" |  |  |  |
| **Max-Forwards** |  |  | RFC 3261 [22] |  |
| value | any allowed value | Non-zero value |  |  |
| **Content-Length** |  |  | RFC 3261 [22] |  |
| value | "0" | No message body included - end of SIP message |  |  |

Editor’s note: Table 5.5.2.9-1 needs to be reviewed

#### 5.5.2.10 SIP PRACK

##### 5.5.2.10.1 SIP PRACK from the UE

Table 5.5.2.10.1-1: SIP PRACK from the UE

| Derivation Path: TS 24.229 [16] clause A.2.1.4.10, A2.2.4.10 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Status-Line** |  |  | RFC 3261 [22] |  |
| Method | "PRACK" |  |  |  |
| Request-URI | same URI as the SS has sent earlier in the Contact header of a response within the same dialog |  |  |  |
| SIP-Version | "SIP/2.0" |  |  |  |
| **Via** |  |  | RFC 3261 [22] |  |
| sent-protocol | "SIP/2.0/UDP" |  |  | UDP |
|  | "SIP/2.0/TCP" |  |  | TCP |
| sent-by | same value as in INVITE message |  |  |  |
| via-branch | Value starting with 'z9hG4bK' |  |  |  |
| **Route** |  |  | RFC 3261 [22] |  |
| route-param list | URIs of the Record-Route header sent to the UE in the response which has established the dialog, in reverse order |  |  |  |
| **From** |  |  | RFC 3261 [22] |  |
| addr-spec | same value as in the INVITE message | Local URI of the dialog (from the UE's point of view) |  |  |
| tag | same value as in the INVITE | Local tag of the dialog ID (from the UE's point of view) |  |  |
| **To** |  |  | RFC 3261 [22] |  |
| addr-spec | same value as in the INVITE | Remote URI of the dialog (from the UE's point of view) |  |  |
| tag | same tag as in the To-header of the response which has established the dialog | Remote tag of the dialog ID (from the UE's point of view) |  |  |
| **Call-ID** |  |  | RFC 3261 [22] |  |
| callid | same value as in INVITE message |  |  |  |
| **CSeq** |  |  | RFC 3261 [22] |  |
| value | value of CSeq sent by the endpoint within its previous request in the same dialog but increased by one |  |  |  |
| method | "PRACK" |  |  |  |
| **Max-Forwards** |  |  | RFC 3261 [22] |  |
| value | any allowed value | Non-zero value |  |  |
| **RAck** |  |  | RFC 3261 [22] |  |
| response-num | same value as in RSeq header of the reliable response |  |  |  |
| cseq-num | same value as in CSeq of reliable response |  |  |  |
| method | same value as in CSeq of reliable response |  |  |  |
| **P-Access-Network-Info** |  |  | RFC 7315 [52] |  |
| access-net-spec | Access network technology and, if applicable, the cell ID |  |  |  |
| **Content-Length** | if present |  | RFC 3261 [22] |  |
| value | "0" | No message body included |  |  |

##### 5.5.2.10.2 SIP PRACK from the SS

Table 5.5.2.10.2-1: SIP PRACK from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 |  | MCPTT |
|  | tsc\_MCVideo\_PublicServiceId\_A | The public service identity identifying the originating participating MCVideo function serving the MCVideo user |  | MCVIDEO |
|  | tsc\_MCData\_PublicServiceId\_A | The public service identity identifying the originating participating MCData function serving the MCData user |  | MCDATA |
| SIP-Version | "SIP/2.0" |  |  |  |
| **Route** |  |  | RFC 3261 [22] |  |
| addr-spec[1] | SIP URI |  |  |  |
| user-info and host | P-CSCF address of the SS | P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery |  |  |
| port | protected server port of the SS | as assigned during registration |  |  |
| uri-parameters | "lr" |  |  |  |
| addr-spec[2] | SIP URI |  |  |  |
| user-info and host | "scscf.3gpp.org" |  |  |  |
| port | not present |  |  |  |
| uri-parameters | "lr" |  |  |  |
| **Via** |  |  | RFC 3261 [22]  RFC 3581 [55] |  |
| sent-protocol | "SIP/2.0/UDP" |  |  | UDP |
|  | "SIP/2.0/TCP" |  |  | TCP |
| sent-by |  |  |  |  |
| user-info and host | IP address or FQDN | Either the UE’s IP address or its home domain name |  |  |
| port | protected server port of the UE | as assigned during registration |  |  |
| via-branch | Value starting with 'z9hG4bK' |  |  |  |
| **From** |  |  | RFC 3261 [22] |  |
| addr-spec |  |  |  |  |
| user-info and host | Default public user id (px\_MCX\_SIP\_PublicUserId\_A\_1) |  |  |  |
| port | not present |  |  |  |
| tag | any value |  |  |  |
| **To** |  |  | RFC 3261 [22]  RFC 5031 [54] |  |
| addr-spec |  |  |  |  |
| user-info and host | same URI as used as Request URI |  |  |  |
| port | not present |  |  |  |
| tag | not present |  |  |  |
| **Expires** |  |  | RFC 3261 [22]  RFC 3903 [43] |  |
| delta-seconds | "4294967295" |  |  |  |
| **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 | MCPTT |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  | TS 24.281 [86] clause 7.2.1A | MCVIDEO |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcdata" |  | TS 24.282 [87] clause 7.2.1A | MCDATA |
| **Accept** |  |  | RFC 3261 [22] | PRESENCE-EVENT |
| media-range | "application/pidf+xml" |  |  |  |
| port | not present |  |  |  |
| **Content-Type** |  |  | RFC 5621 [58] |  |
| media-type | "multipart/mixed" |  |  |  |
| **Content-Length** | present in case of TCP and when there is a message body (otherwise optional)length of message-body |  | RFC 3261 [22] |  |
| value | any value |  |  |  |
| **Message-body** |  |  | RFC 3261 [22] |  |
| MIME body part |  | **MCPTT/MCVideo/MCData Info** |  |  |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/vnd.3gpp.mcptt-info+xml" |  |  | MCPTT |
|  | "application/vnd.3gpp.mcvideo-info+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-info+xml" |  |  | MCDATA |
| Content-ID | any value | Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | MCPTT-Info as described in Table 5.5.3.2.1-1 |  | TS 24.379 [9] clause F.1 | MCPTT |
|  | MCVideo-Info as described in Table 5.5.3.2.1-2 |  | TS 24.281 [86] clause F.1 | MCVIDEO |
|  | MCData-Info as described in Table 5.5.3.2.1-3 |  | TS 24.282 [87] clause D.1 | MCDATA |
| MIME body part |  | **PIDF** |  | PRESENCE-EVENT |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/pidf+xml" |  |  |  |
| MIME-part-body | PIDF as described in Table 5.5.3.5.1-1 |  | TS 24.379 [9] clause 9.3.1 | MCPTT |
|  | PIDF as described in Table 5.5.3.5.1-2 |  | TS 24.281 [86] clause 8.3.1 | MCVIDEO |
|  | PIDF as described in Table 5.5.3.5.1-3 |  | TS 24.282 [87] clause 8.3.1 | MCDATA |
| MIME body part |  | **MIKEY** |  | 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 | |  | |  | |
| **Require** | |  | |  | | RFC 3261 [22]  RFC 3312 [56]  RFC 3329 [53] | |  | |
| option-tag | | "sec-agree" | |  | |  | |  | |
| option-tag | | "multiple-refer" | |  | |  | |  | |
| **Proxy-Require** | |  | |  | | RFC 3261 [22]  RFC 3329 [53] | |  | |
| option-tag | | "sec-agree" | |  | |  | |  | |
| **Security-Verify** | |  | |  | | RFC 3329 [53] | |  | |
| sec-mechanism | | same value as Security -Server header sent by SS during registration | |  | |  | |  | |
| **Contact** | |  | |  | | RFC 3261 [22  RFC 3840 [33] | |  | |
| addr-spec | | SIP URI | |  | |  | |  | |
| user-info and host | | IP address or FQDN | |  | |  | |  | |
| feature-param | | "+g.3gpp.mcptt" | | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Push To Talk (MCPTT) communication. | |  | | MCPTT | |
|  | | "+g.3gpp.mcvideo" | | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Video (MCVideo) communication. | |  | | MCVIDEO | |
|  | | "+g.3gpp.mcdata.sds" | | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Data (MCData) communication. | |  | | MCDATA | |
| feature-param | | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt" | | This URN indicates that the device has the capabilities to support the mission critical push to talk (MCPTT) service. | |  | | MCPTT | |
|  | | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" | | This URN indicates that the device has the capabilities to support the mission critical video (MCVideo) service. | |  | | MCVIDEO | |
|  | | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" | | This URN indicates that the device has the capabilities to support the mission critical data (MCData) service. | |  | | MCDATA | |
| feature-param | | "audio" | | This feature tag indicates that the device supports audio as a streaming media type. | |  | | MCPTT OR MCVIDEO | |
| feature-param | | "video" | | This feature tag indicates that the device supports video as a streaming media type. | |  | | MCVIDEO | |
| feature-param | | "text" | | This feature tag indicates that the device supports text as a streaming media type. | |  | | MCDATA | |
| **Refer-To** | |  | |  | | RFC 3515 [38] | |  | |
| addr-spec | | a Content-ID ("cid") Uniform Resource Locator (URL) as specified in IETF RFC 2392 that points to an application/resource-lists+xml MIME body as specified in IETF RFC 5366 | |  | |  | |  | |
| **Refer-To** | |  | |  | | RFC 3515 [38] | | METHOD-BYE | |
| addr-spec | |  | |  | |  | |  | |
| user-info and host | | tsc\_MCX\_SessionID\_B | | The session identity of the pre-established session to leave. | |  | |  | |
| uri-parameters | |  | |  | |  | |  | |
| id[1] | | method | |  | |  | |  | |
| value[1] | | "BYE" | |  | |  | |  | |
| **Max-Forwards** | |  | |  | | RFC 3261 [22] | |  | |
| value | | any allowed value | | Non-zero value | |  | |  | |
| **P-Access-Network-Info** | |  | |  | | RFC 7315 [52] | |  | |
| access-net-specs | | Access network technology and, if applicable, the cell ID | |  | |  | |  | |
| **P-Preferred-Service** | |  | |  | | RFC 6050 [31] | |  | |
| Service-ID | | "urn:urn-7:3gpp-service.ims.icsi.mcptt" | |  | |  | | MCPTT | |
|  | | "urn:urn-7:3gpp-service.ims.icsi.mcvideo" | |  | |  | | MCVIDEO | |
|  | | "urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" | |  | |  | | MCDATA | |
| **P-Preferred-Identity** | | If present | |  | | RFC 3325 [32] | |  | |
| PPreferredID-value | | same URI as in From-header | |  | |  | |  | |
| **Resource-Priority** | |  | |  | | RFC 4412 [40]  RFC 7134 [57]  RFC 8101 [45]  TS 24.379 [9] clause 6.2.8.1.15 | | EMERGENCY-CALL AND (GROUP-CALL OR PRIVATE-CALL) | |
| r-value | |  | |  | |  | |  | |
| 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" | |  | |  | |  | |
| Content-ID | | same value as the cid URL in the Refer-To header field | | Unique URL identifying the Resource-lists XML MIME body; used as reference in the signature MIME body too | | TS 24.379 [9] clause 6.6.3.1 | |  | |
| MIME-part-body | | Resource-lists as described in Table 5.5.3.3.1-1 with condition PRE-ESTABLISH and the uri attribute of the single <entry> element extended with the headers of Table 5.5.2.12-2 | |  | |  | | MCPTT | |
|  | | Resource-lists as described in Table 5.5.3.3.1-2 | |  | |  | | MCVIDEO | |
|  | | Resource-lists as described in Table 5.5.3.3.1-3 | |  | |  | | MCDATA | |
| MIME body part | |  | | **Location info** | |  | | LOCATION-INFO | |
| MIME-part-headers | |  | |  | |  | |  | |
| Content-Type | | "application/vnd.3gpp.mcptt-location-info+xml" | |  | |  | | MCPTT | |
|  | | "application/vnd.3gpp.mcvideo-location-info+xml" | |  | |  | | MCVIDEO | |
| Content-ID | | any value | | Unique URL identifying the Location-info XML MIME body; used as reference in the signature MIME body | | TS 24.379 [9] clause 6.6.3.1 | |  | |
| MIME-part-body | | Location-info as described in Table 5.5.3.4.1-1 | |  | | TS 24.379 [9] clause F.3 | | MCPTT | |
|  | | Location-info as described in Table 5.5.3.4.1-2 | |  | | TS 24.281 [86] clause F.3 | | MCVIDEO | |
| MIME body part | |  | | **Signature** | |  | |  | |
| MIME-part-headers | |  | |  | |  | |  | |
| Content-Type | | "application/vnd.3gpp.mcptt-signed+xml" | |  | | TS 24.379 [9] | |  | |
| MIME-part-body | | Signatures for XML MIME bodies as described in Table 5.5.13.1-1 | |  | | TS 24.379 [9] | |  | |

Table 5.5.2.12-2: SIP header fields extending the uri attribute of the resource-lists' single entry

| 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" |  |  | MCPTT |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" |  |  | MCDATA |
| req-param | "require" |  |  |  |
| explicit-param | "explicit" |  |  |  |
| ac-value[2] |  |  |  |  |
| feature-param | "+g.3gpp.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.mcvideo" |  |  | MCVIDEO |
|  | "+g.3gpp.mcdata.sds" |  |  | MCDATA |
| req-param | "require" |  |  |  |
| explicit-param | "explicit" |  |  |  |
| **Answer-Mode** | not present |  |  |  |
| **Answer-Mode** |  |  | RFC 5373 [34]  TS 24.379 [9] cl. 11.1.1.2.2.1, 8) | PRIVATE-CALL AND (NOT FORCE) |
| answer-mode-value | "Auto" |  |  |  |
| answer-mode-value | "Manual" |  |  | MANUAL |
| **Priv-Answer-Mode** | not present |  |  |  |
| **Priv-Answer-Mode** |  |  | RFC 5373 [34]  TS 24.379 [9] clause 11.1.1.2.2.1, 8) and clause 11.1.6.2.2.1, 8) | PRIVATE-CALL AND FORCE |
| answer-mode-value | "Auto" | if force of automatic commencement mode at the invited MCPTT client is requested by the MCPTT user, |  |  |
| **Content-Type** |  |  | RFC 5621 [58] |  |
| media-type | "multipart/mixed" |  |  |  |
| **body** |  | NOTE: Characters that are not formatted as ASCII characters are escaped in the following parameters in the headers portion of the SIP URI. | RFC 3261 [22] |  |
| MIME body part |  | **MCPTT/MCVideo/MCData Info** |  |  |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/vnd.3gpp.mcptt-info+xml" |  |  | MCPTT |
|  | "application/vnd.3gpp.mcvideo-info+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-info+xml" |  |  | MCDATA |
| Content-ID | any value | Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | MCPTT-Info as described in Table 5.5.3.2.1-1 |  | TS 24.379 [9] clause F.1 | MCPTT |
|  | MCVideo-Info as described in Table 5.5.3.2.1-2 |  | TS 24.281 [86] clause F.1 | MCVIDEO |
|  | MCData-Info as described in Table 5.5.3.2.1-3 |  | TS 24.282 [87] clause D.1 | MCDATA |
| MIME body part |  | **Location info** |  | (MCPTT OR MCVIDEO) AND ALLOW-LOCATION-INFO |
| MIME-part-headers |  |  |  |  |
| Content-Type | “application/vnd.3gpp.mcptt-location-info+xml” |  |  | MCPTT |
|  | “application/vnd.3gpp.mcvideo-location-info+xml” |  |  | MCVIDEO |
| Content-ID | any value | Unique URL identifying the Location-info XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | Location-info as described in Table 5.5.3.4.1-1 |  | TS 24.379 [9] clause F.3 | MCPTT |
|  | Location-info as described in Table 5.5.3.4.1-2 |  | TS 24.281 [86] clause F.3 | MCVIDEO |
| MIME body part |  | **Signature** |  |  |
| MIME-part-headers |  |  |  |  |
| Content-Type | “application/vnd.3gpp.mcptt-signed+xml” |  | TS 24.379 [9] |  |
| MIME-part-body | Signatures for XML MIME bodies as described in Table 5.5.13.1-1 |  | TS 24.379 [9] |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| MANUAL | Call establishment with manual commencement mode |
| FORCE | force of automatic commencement mode at the invited MCPTT client is requested by the MCPTT user |
| ALLOW-LOCATION-INFO | Implicit floor control is requested AND <allow-location-info-when-talking> element of the <ruleset> element of the MCPTT user profile document set to “true” in TS 36.579-1 [2] Table 5.5.8.3-1 |
| For further conditions see table 5.5.1-1 | |

#### 5.5.2.13 SIP REGISTER

This message is sent by the UE.

Table 5.5.2.13-1: SIP REGISTER

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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" |  |  | MCPTT |
|  | "+g.3gpp.mcvideo" | This media feature tag when used in a SIP request or a SIP response indicates that the function sending the SIP message supports Mission Critical Video (MCVideo) communication. |  | MCVIDEO |
| feature-param | g.3gpp.mcdata.sds | SDS is supported | TS 24.282 [87] clause 7.2.1 | MCDATA AND pc\_MCData\_SDS |
| feature-param | g.3gpp.mcdata.fd | FD is supported | TS 24.282 [87] clause 7.2.1 | MCDATA AND pc\_MCData\_FD |
| feature-param | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" | This URN indicates that the device has the capabilities to support the mission critical video (MCVideo) service. |  | MCVIDEO |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata " | This URN indicates that the device has the capabilities to support the mission critical data (MCData) service. |  | MCDATA |
| feature-param | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" | SDS is supported | TS 24.282 [87] clause 7.2.1 | MCDATA AND pc\_MCData\_SDS |
| feature-param | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd" | FD is supported | TS 24.282 [87] clause 7.2.1 | MCDATA AND pc\_MCData\_FD |
| feature-param | "audio" |  |  | MCPTT OR MCVIDEO |
| feature-param | "video" | This feature tag indicates that the device supports video as a streaming media type. |  | MCVIDEO |
| feature-param | "text" | This feature tag indicates that the device supports text as a streaming media type. |  | MCDATA |
| feature-param | “expires=600000” if present |  |  |  |
| **Expires** | Present if no expires parameter in Contact header |  | RFC 3261 [22]  RFC 3903 [43] |  |
| value | "600000" |  |  |  |
| **Require** |  |  | RFC 3261 [22]  RFC 3329 [53] |  |
| option-tag | "sec-agree" |  |  |  |
| **Proxy-Require** |  |  | RFC 3261 [22]  RFC 3329 [53] |  |
| option-tag | "sec-agree" |  |  |  |
| **Supported** |  |  | RFC 3261 [22]  RFC 6442 [62]  RFC 4488 [36] |  |
| option-tag | "path" |  |  |  |
| option-tag | "timer" |  |  |  |
| **Cseq** |  |  | RFC 3261 [22] |  |
| value | any allowed value |  |  | SIP\_REGISTER\_INITIAL |
|  | value sent by the UE in previous REGISTER incremented by one |  |  |  |
| method | "REGISTER" |  |  |  |
| **Call-ID** |  |  | RFC 3261 [22] |  |
| callid | any value |  |  |  |
| **Security-Client** |  |  | RFC 7315 [52] |  |
| mechanism-name | "ipsec-3gpp" |  |  |  |
| algorithm | "hmac-sha-1-96" |  |  |  |
| protocol | "esp" (if present) |  |  |  |
| mode | "trans" (if present) |  |  |  |
| encrypt-algorithm | "des-ede3-cbc" or "aes-cbc" |  |  |  |
| spi-c | SPI number of the inbound SA at the protected client port |  |  |  |
| spi-s | SPI number of the inbound SA at the protected server port |  |  |  |
| port-c | protected client port |  |  |  |
| port-s | protected server port |  |  |  |
| **Security-Verify** | Not present |  | RFC 3329 [53] | SIP\_REGISTER\_INITIAL |
| **Security-Verify** |  |  | RFC 3329 [53] |  |
| sec-mechanism | same value as Security Server header sent by SS |  |  |  |
| **Authorization** |  |  | RFC 2617 [72],  RFC 3310 [96] | SIP\_REGISTER\_INITIAL |
| username | Private user id (px\_MCX\_SIP\_PrivateUserId\_A) if available at the UE or derived from the IMSI otherwise | Depending on the UE configuration the UE may know the private public user id (e.g. when there is an ISIM) or the UE needs to derive it from the IMSI as according to 23.003 [69] clause 13.3 (e.g. when there is a USIM only) |  |  |
| realm | same home domain name as used in Request-URI |  |  |  |
| nonce | "" | Empty string |  |  |
| digest-uri | same SIP-URI as used as Request-URI |  |  |  |
| opaque | any value if present |  |  |  |
| qop | any value if present |  |  |  |
| cnonce | any value if present |  |  |  |
| nc | any value if present |  |  |  |
| algorithm | any value if present |  |  |  |
| response | "" | Empty string |  |  |
| **Authorization** |  |  | RFC 2617 [72],  RFC 3310 [96] |  |
| username | same value as for condition SIP\_REGISTER\_INITIAL |  |  |  |
| realm | same value as received in the realm directive in the WWW Authenticate header sent by SS |  |  |  |
| nonce | same value as in WWW-Authenticate header sent by SS |  |  |  |
| digest-uri | same SIP-URI as used as Request-URI |  |  |  |
| opaque | same value as sent by the server in “401 Unauthorized for REGISTER” |  |  |  |
| qop | "auth" |  |  |  |
| cnonce | any value | value assigned by UE affecting the response calculation |  |  |
| nc | nonce-count value | counter to indicate how many times the UE has sent the same value of nonce within successive REGISTERs, initial value shall be 1 |  |  |
| algorithm | “AKAv1-MD5” |  |  |  |
| response | Digest response | calculated by the client according to RFC 2617 |  |  |
| **Max-Forwards** |  |  | RFC 3261 [22] |  |
| value | any allowed value | Non-zero value |  |  |
| **P-Access-Network-Info** |  |  | RFC 7315 [52] |  |
| access-net-specs | Access network technology and, if applicable, the cell ID |  |  |  |
| **Content-Type** |  |  | RFC 5621 [58] | 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" |  |  | MCPTT |
|  | "application/vnd.3gpp.mcvideo-info+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-info+xml" |  |  | MCDATA |
| Content-ID | any value | Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | MCPTT-Info as described in Table 5.5.3.2.1-1 |  | TS 24.379 [9] clause F.1 | MCPTT |
|  | MCVideo-Info as described in Table 5.5.3.2.1-2 |  | TS 24.281 [86] clause F.1 | MCVIDEO |
|  | MCData-Info as described in Table 5.5.3.2.1-3 |  | TS 24.282 [87] clause D.1 | MCDATA |
| MIME body part |  | **MIKEY** |  |  |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/mikey" |  | RFC 3830 [24] |  |
| MIME-part-body | MIKEY message as described in Table 5.5.9.1-1 | MIKEY message, containing the CSK | TS 33.180 [94] |  |
| MIME body part |  | **Signature** |  |  |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/vnd.3gpp.mcptt-signed+xml" |  | TS 24.379 [9] |  |
| MIME-part-body | Signatures for XML MIME bodies as described in Table 5.5.13.1-1 |  | TS 24.379 [9] |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| SIP\_REGISTER\_INITIAL | Initial unprotected REGISTER |
| For further conditions see table 5.5.1-1 | |

#### 5.5.2.14 SIP SUBSCRIBE

This message is sent by the UE.

Table 5.5.2.14-1: SIP SUBSCRIBE

| Derivation Path: TS 24.229 [16] clause A.2.1.4.13, A.2.2.4.13 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Request-Line** |  |  | RFC 3261 [22]  RFC 5031 [54] |  |
| Method | "SUBSCRIBE" |  |  |  |
| Request-URI | tsc\_MCPTT\_PublicServiceId\_A | The public service identity identifying the originating participating MCPTT function serving the MCPTT user |  | MCPTT |
|  | tsc\_MCVideo\_PublicServiceId\_A | The public service identity identifying the originating participating MCVideo function serving the MCVideo user |  | MCVIDEO |
|  | tsc\_MCData\_PublicServiceId\_A | The public service identity identifying the originating participating MCData function serving the MCData user |  | MCDATA |
|  | "sip:" & 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 |
|  | "sip:" & tsc\_MCX\_GMSURI | public service identity (PSI) for performing subscription proxy function of the GMS as configured in the <GMS-URI> element of the initial UE configuration | TS 24.481 [11] clause 6.3.13.2.1 | 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 |
|  | "SIP/2.0/TCP" |  |  | TCP |
| sent-by |  |  |  |  |
| host | IP address or FQDN | Either the UE’s IP address or its home domain name |  |  |
| port | protected server port of the UE | as assigned during registration |  |  |
| via-branch | value starting with 'z9hG4bK' |  |  |  |
| **From** |  |  | RFC 3261 [22] |  |
| addr-spec |  |  |  |  |
| user-info and host | Default public user id (px\_MCX\_SIP\_PublicUserId\_A\_1) |  |  |  |
| port | not present |  |  |  |
| tag | any value |  |  |  |
| **From** |  |  | RFC 3261 [22] | re\_SUBSCRIBE |
| addr-spec | Same URI of the UE as used earlier in the dialog | Local URI of the dialog (from the UE's point of view) |  |  |
| tag | Same tag of the UE as used earlier in the dialog | Local tag of the dialog ID (from the UE's point of view) |  |  |
| **To** |  |  | RFC 3261 [22]  RFC 5031 [54] |  |
| addr-spec |  |  |  |  |
| user-info and host | same URI as used as Request URI |  |  |  |
| port | not present |  |  |  |
| tag | not present |  |  |  |
| **To** |  |  | RFC 3261 [22] | re\_SUBSCRIBE |
| addr-spec | Same URI of the SS as used earlier in the dialogURI | Remote URI of the dialog (from the UE's point of view) |  |  |
| tag | Same tag of the SS as used earlier in the dialog | Remote tag of the dialog ID (from the UE's point of view) |  |  |
| **Contact** |  |  | RFC 3261 [22] |  |
| addr-spec | SIP URI |  |  |  |
| user-info and host | IP address or FQDN |  |  |  |
| port | protected server port of UE | as assigned during registration |  |  |
| feature-param | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt" | Mandatory media feature tag according to TS 24.481 [11] clause 6.3.13.2.1 and TS 24.484 [14] clause 6.3.13.2.2 |  | CONFIG OR GROUPCONFIG |
| feature-param | any (further) feature tags if present | In addition to mandatory feature tags (if any) the UE may provide further feature tags which are not checked |  |  |
| **Expires** |  |  | RFC 3261 [22]  RFC 3903 [43] |  |
| value | any value |  |  |  |
| **Require** |  |  | RFC 3261 [22]  RFC 3329 [53] |  |
| option-tag | "sec-agree" |  |  |  |
| **Proxy-Require** |  |  | RFC 3261 [22]  RFC 3329 [53] |  |
| option-tag | "sec-agree" |  |  |  |
| **Security-Verify** |  |  | RFC 3329 [53] |  |
| sec-mechanism | same value as Security -Server header sent by SS during registration |  |  |  |
| **Cseq** |  |  | RFC 3261 [22] |  |
| value | any allowed value |  |  |  |
|  | value of CSeq sent by the endpoint within its previous request in the same dialog but increased by one |  |  | re\_SUBSCRIBE |
| method | "SUBSCRIBE" |  |  |  |
| **Call-ID** |  |  | RFC 3261 [22] |  |
| callid | any allowed value |  |  |  |
|  | same value as in SUBSCRIBE creating the dialog |  |  | re\_SUBSCRIBE |
| **Max-Forwards** |  |  | RFC 3261 [22] |  |
| value | any allowed value | Non-zero value |  |  |
| **P-Access-Network-Info** |  |  | RFC 7315 [52]  RFC 7913 [51] |  |
| access-net-spec | Access network technology and, if applicable, the cell ID | Access network technology and, if applicable, the cell ID |  |  |
| **Event** |  |  | RFC 6665 [39] |  |
| event-type | "presence" |  |  |  |
|  | "xcap-diff" |  |  | CONFIG  GROUPCONFIG |
|  | "poc-settings" |  |  | POC-SETTINGS-EVENT |
| **Accept** |  |  | RFC 3261 [22] |  |
| media-range | "application/pidf+xml" |  |  |  |
|  | "application/xcap-diff+xml" |  |  | CONFIG,  GROUPCONFIG |
| "application/poc-settings+xml" |  |  | POC-SETTINGS-EVENT |
| **P-Preferred-Service** |  |  | RFC 6050 [31] |  |
| Service-ID | "urn:urn-7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT OR CONFIG OR GROUPCONFIG |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcdata" |  |  | MCDATA |
|  |  |  |  |  |
| **Content-Type** |  |  | RFC 5621 [58] |  |
| media-type | "multipart/mixed" |  |  |  |
| **Content-Length** | present in case of TCP and when there is a message body (otherwise optional) |  | RFC 3261 [22] |  |
| value | any value | length of message-body |  |  |
| **Message-body** |  |  | RFC 3261 [22] |  |
| MIME body part |  | **MCPTT/MCVideo/MCData Info** |  |  |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/vnd.3gpp.mcptt-info+xml" |  |  | MCPTT OR CONFIG OR GROUPCONFIG |
|  | "application/vnd.3gpp.mcvideo-info+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-info+xml" |  |  | MCDATA |
| Content-ID | any value | Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | MCPTT-Info as described in Table 5.5.3.2.1-1 |  | TS 24.379 [9] clause F.1 | MCPTT OR CONFIG OR GROUPCONFIG |
|  | 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" |  |  |  |
| Content-ID | any value | Unique URL identifying the SIMPLE-FILTER XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | SIMPLE-FILTER as described in Table 5.5.3.6-1 |  | TS 24.379 [9] clause 9.3.2  TS 24.281 [86] clause 8.3.2  TS 24.282 [87] clause 8.4.2 |  |
| MIME body part |  | **Resource-lists** |  | CONFIG, GROUPCONFIG |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/resource-lists+xml" |  |  |  |
| Content-ID | any value | Unique URL identifying the Resource-lists XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | Resource-lists as described in Table 5.5.3.3.1-1 |  |  | MCPTT |
|  | Resource-lists as described in Table 5.5.3.3.1-2 |  |  | MCVIDEO |
|  | Resource-lists as described in Table 5.5.3.3.1-3 |  |  | MCDATA |
| MIME body part |  | **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" |  |  | MCPTT |
|  | "+g.3gpp.mcvideo" |  |  | MCVIDEO |
| feature-param | "+g.3gpp.icsi-ref= urn:urn-7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
| feature-param | "audio" |  |  | MCPTT OR MCVideo |
| feature-param | "video" |  |  | MCVIDEO |
| **Supported** |  |  |  |  |
| option-tag | "norefersub" |  |  |  |
| **Rseq** |  |  | RFC 3262 [97] | 100rel |
| response-num | previous RSeq number sent in the same direction incremented by one |  |  |  |
| **Call-ID** |  |  |  |  |
| callid | same value as received in INVITE message |  |  |  |
| **CSeq** |  |  |  |  |
| value | same value as received in INVITE message |  |  |  |
| **Content-Length** | if present |  |  |  |
| value | "0" | No message body included |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| 100rel | Reponse sent reliable according to RFC 3262 [97] |

5.5.2.16.2.2 SIP 180 (Ringing) from the SS

Table 5.5.2.16.2.2-1: SIP 180 (Ringing) from the SS

| Derivation Path: RFC 3261 [22] | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Status-Line** |  |  |  |  |
| SIP-Version | "SIP/2.0" |  |  |  |
| Status-Code | "180" |  |  |  |
| Reason-Phrase | "Ringing" |  |  |  |
| **Record-Route** | same as spefied for the SIP 200 (OK) from the SS in table 5.5.2.17.1.2-1 with condition INVITE-RSP |  | RFC 3261 [22] |  |
| **Via** | same as received in the INVITE message |  | RFC 3261 [22]  RFC 3581 [55] |  |
| **Require** |  |  |  | 100rel |
| option-tag | "100rel" |  |  |  |
| **From** |  |  |  |  |
| addr-spec | same value as in the request |  |  |  |
| tag | same value as in the request |  |  |  |
| **To** |  |  |  |  |
| addr-spec | same value as in the request |  |  |  |
| tag | same value as in the request or To-tag assigned by the SS if missing in the request |  |  |  |
| **Contact** |  |  |  |  |
| addr-spec |  |  |  |  |
| user-info and host | tsc\_MCPTT\_SessionId |  |  | MCPTT |
|  | tsc\_MCVideo\_SessionId |  |  | MCVIDEO |
| port | not present |  |  |  |
| feature-param | "+g.3gpp.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.mcvideo" |  |  | MCVIDEO |
| feature-param | "+g.3gpp.icsi-ref= urn:urn-7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
| feature-param | "audio" |  |  | MCPTT OR MCVIDEO |
| feature-param | "video" | This feature tag indicates that the device supports video as a streaming media type. |  | MCVIDEO |
| feature-param | "isfocus" |  |  |  |
| **Supported** |  |  |  |  |
| option-tag | "norefersub" |  |  |  |
| **Rseq** |  |  | RFC 3262 [97] | 100rel |
| response-num | previous RSeq number sent in the same direction incremented by one; arbitrarily selected if there is no previous RSeq number |  |  |  |
| **Call-ID** |  |  |  |  |
| callid | same value as received in INVITE message |  |  |  |
| **CSeq** |  |  |  |  |
| value | same value as received in INVITE message |  |  |  |
| **Content-Length** |  |  |  |  |
| value | "0" | No message body included |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| 100rel | Reponse sent reliable according to RFC 3262 [97] |

##### 5.5.2.16.3 SIP 183 (Session Progress)

5.5.2.16.3.1 SIP 183 (Session Progress) from the UE

Table 5.5.2.16.3.1-1: SIP 183 (Session Progress) from the UE

| Derivation Path: RFC 3261 [22] | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Status-Line** |  |  |  |  |
| SIP-Version | "SIP/2.0" |  |  |  |
| Status-Code | "183" |  |  |  |
| Reason-Phrase | "Session progress" |  |  |  |
| **Record-Route** |  |  | RFC 3261 [22] |  |
| rec-route | same as received in INVITE message |  |  |  |
| **Via** | same as received in INVITE message |  | RFC 3261 [22]  RFC 3581 [55] |  |
| **Require** |  |  |  | 100rel |
| option-tag | "100rel" |  |  |  |
| **From** |  |  |  |  |
| addr-spec | same value as received in INVITE message |  |  |  |
| tag | same value as received in INVITE message |  |  |  |
| **To** |  |  |  |  |
| addr-spec | same value as received in INVITE message |  |  |  |
| tag | same value as received in the INVITE message or any value if missing in the INVITE message. |  |  |  |
| **Contact** |  |  |  |  |
| addr-spec | SIP URI |  |  |  |
| user-info and host | IP address or FQDN |  |  |  |
| port | protected server port of UE | as assigned during registration |  |  |
| feature-param | "+g.3gpp.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.mcvideo" |  |  | MCVIDEO |
| feature-param | "+g.3gpp.icsi-ref= urn:urn-7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
| feature-param | "audio" |  |  | MCPTT OR MCVideo |
| feature-param | "video" |  |  | MCVIDEO |
| **Supported** |  |  |  |  |
| option-tag | "norefersub" |  |  |  |
| **Rseq** |  |  |  | 100rel |
| response-num | previous RSeq number sent in the same direction incremented by one |  |  |  |
| **Call-ID** |  |  |  |  |
| callid | same value as received in INVITE message |  |  |  |
| **CSeq** |  |  |  |  |
| value | same value as received in INVITE message |  |  |  |
| **P-Answer-State** | if present |  |  |  |
| value | "unconfirmed" |  |  |  |
| **Content-Length** | if present |  | RFC 3261 [22] |  |
| value | "0" | No message body included |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| 100rel | Reponse sent reliable according to RFC 3262 [97] |

5.5.2.16.3.2 SIP 183 (Session Progress) from the SS

Table 5.5.2.16.3.2-1: SIP 183 (Session Progress) from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 3261 [22] | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Status-Line** |  |  |  |  |
| SIP-Version | "SIP/2.0" |  |  |  |
| Status-Code | "183" |  |  |  |
| Reason-Phrase | "Session progress" |  |  |  |
| **Record-Route** | same as specified for the SIP 200 (OK) from the SS in table 5.5.2.17.1.2-1 with condition INVITE-RSP |  | RFC 3261 [22] |  |
| **Via** | same as received in the INVITE message |  | RFC 3261 [22]  RFC 3581 [55] |  |
| **Require** |  |  |  | 100rel |
| option-tag | "100rel" |  |  |  |
| **From** |  |  |  |  |
| addr-spec | same value as in the request |  |  |  |
| tag | same value as in the request |  |  |  |
| **To** |  |  |  |  |
| addr-spec | same value as in the request |  |  |  |
| tag | same value as in the request or To-tag assigned by the SS if missing in the request |  |  |  |
| **Contact** |  |  |  |  |
| addr-spec |  |  |  |  |
| user-info and host | tsc\_MCPTT\_SessionId |  |  | MCPTT |
|  | tsc\_MCVideo\_SessionId |  |  | MCVIDEO |
| port | not present |  |  |  |
| feature-param | "+g.3gpp.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.mcvideo" |  |  | MCVIDEO |
| feature-param | "+g.3gpp.icsi-ref= urn:urn-7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
| feature-param | "audio" |  |  | MCPTT OR MCVIDEO |
| feature-param | "video" | This feature tag indicates that the device supports video as a streaming media type. |  | MCVIDEO |
| feature-param | "isfocus" |  |  |  |
| **Supported** |  |  |  |  |
| option-tag | "norefersub" |  |  |  |
| **Rseq** |  |  |  | 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 |  |  | MCPTT |
|  | tsc\_MCVideo\_PublicServiceId\_A |  |  | MCVIDEO |
| port | not present |  |  |  |
| **Content-Length** |  |  | RFC 3261 [22] |  |
| value | "0" | No message body included |  |  |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| 100rel | Response sent reliable according to RFC 3262 [97] |

#### 5.5.2.17 SIP 2xx

##### 5.5.2.17.1 SIP 200 (OK)

5.5.2.17.1.1 SIP 200 (OK) from the UE

Table 5.5.2.17.1.1-1: SIP 200 (OK) from the UE

| Derivation Path: RFC 3261 [22] | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Status-Line** |  |  |  |  |
| SIP-Version | "SIP/2.0" |  |  |  |
| Status-Code | "200" |  |  |  |
| Reason-Phrase | "OK" |  |  |  |
| **Via** | same as received in the request |  | RFC 3261 [22]  RFC 3581 [55] |  |
| **Record-Route** |  |  | RFC 3261 [22] | INVITE-RSP |
| rec-route | same as received in the request |  |  |  |
| **From** |  |  |  |  |
| addr-spec | Same value as received in the request |  |  |  |
| tag | same value as received in the request |  |  |  |
| **To** |  |  |  |  |
| addr-spec | same value as received in the request |  |  |  |
| tag | same value as received in the request or any value if missing in the request. |  |  |  |
| **Contact** |  |  |  | INVITE-RSP |
| user-info and host | IP address or FQDN |  |  |  |
| port | protected server port of UE | as assigned during registration |  |  |
| feature-param | "+g.3gpp.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.mcvideo" |  |  | MCVIDEO |
|  | "+g.3gpp.mcdata.sds" |  | TS 24.282 [87] clause 9.2.3.2.4 | MCDATA\_SDS |
|  | "+g.3gpp.mcdata.fd" |  | TS 24.282 [87] clause 10.2.5.2.4 | MCDATA\_FD |
| feature-param | "+g.3gpp.icsi-ref= urn:urn- 7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" |  | TS 24.282 [87] clause 9.2.3.2.4 | MCDATA\_SDS |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd" |  | TS 24.282 [87] clause 10.2.5.2.4 | MCDATA\_FD |
| feature-param | "audio" |  |  | MCPTT OR MCVideo |
| feature-param | "video" |  |  | MCVIDEO |
| feature-param | "text" |  |  | MCDATA |
| **Call-ID** |  |  |  |  |
| callid | same value as received in the request |  |  |  |
| **CSeq** |  |  |  |  |
| value | same value as received in the request |  |  |  |
| **Require** |  |  |  | INVITE-RSP |
| option-tag | "timer" |  |  |  |
| **Session-Expires** |  |  |  | INVITE-RSP |
| delta-seconds | Same value as session expires header in SIP INVITE |  | RFC 4028 [30]  TS 24.229 [16] cl.5.1.4.1 |  |
| refresher | "uas" |  |  |  |
| **Content-Type** |  |  | RFC 5621 [58] | INVITE-RSP |
| value | "multipart/mixed" |  |  |  |
| **Content-Length** | present in case of TCP and when there is a message body (otherwise optional) |  | RFC 3261 [22] |  |
| value | any value | length of message-body |  |  |
| **P-Answer-State** | If present |  | RFC 4964 [118]  TS 24.379 [9] clause 6.2.3.1.2 | INVITE-RSP AND GROUP-CALL |
| **answer-type** | “confirmed” |  |  |  |
| **Message-body** | not present |  | RFC 3261 [22] |  |
| **Message-body** |  |  | RFC 3261 [22] | INVITE-RSP |
| MIME body part |  | **SDP message** |  |  |
| MIME-part-header |  |  |  |  |
| MIME-Content-Type | "application/sdp" |  | RFC 4566 [27] |  |
| MIME-part-body | SDP message as described in Table 5.5.3.1.1-1 |  |  | MCPTT |
|  | SDP message as described in Table 5.5.3.1.1-2 |  |  | MCVIDEO |
|  | SDP message as described in Table 5.5.3.1.1-3 |  |  | MCDATA |
| MIME body part |  | **MCPTT/MCVideo/MCData Info** |  |  |
| MIME-part-header |  |  |  |  |
| MIME-Content-Type | "application/vnd.3gpp.mcptt-info+xml" |  |  | MCPTT |
|  | "application/vnd.3gpp.mcvideo-info+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-info+xml" |  |  | MCDATA |
| Content-ID | any value | Unique URL identifying the MCPTT/MCVideo/MCData Info XML MIME body; used as reference in the signature MIME body | TS 24.379 [9] clause 6.6.3.1 |  |
| MIME-part-body | MCPTT-Info as described in Table 5.5.3.2.1-1 |  | TS 24.379 [9] clause F.1 | MCPTT |
|  | MCVideo-Info as described in Table 5.5.3.2.1-2 |  | TS 24.281 [86] clause F.1 | MCVIDEO |
|  | MCData-Info as described in Table 5.5.3.2.1-3 |  | TS 24.282 [87] clause D.1 | MCDATA |
| MIME body part |  | **Signature** |  |  |
| MIME-part-headers |  |  |  |  |
| Content-Type | "application/vnd.3gpp.mcptt-signed+xml" |  | TS 24.379 [9] |  |
| MIME-part-body | Signatures for XML MIME bodies as described in Table 5.5.13.1-1 |  | TS 24.379 [9] |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| INVITE-RSP | 200 OK is the response to the SIP INVITE |
| MCDATA\_SDS | INVITE for SDS communication |
| MCDATA\_FD | INVITE for FD communication |

5.5.2.17.1.2 SIP 200 (OK) from the SS

Table 5.5.2.17.1.2-1: SIP 200 (OK) from the SS

| Derivation Path: RFC 3261 [22] | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Status-Line** |  |  |  |  |
| SIP-Version | "SIP/2.0" |  |  |  |
| Status-Code | "200" |  |  |  |
| Reason-Phrase | "OK" |  |  |  |
| **Via** | same as received in the request |  | RFC 3261 [22]  RFC 3581 [55] |  |
| **Record-Route** |  |  | RFC 3261 [22] | INVITE-RSP |
| addr-spec[1] | SIP URI |  |  |  |
| user-info and host | pcscf.other.com |  |  |  |
| port | not present |  |  |  |
| uri-parameters | "lr" |  |  |  |
| addr-spec[2] | SIP URI |  |  |  |
| user-info and host | scscf.other.com |  |  |  |
| port | not present |  |  |  |
| uri-parameters | "lr" |  |  |  |
| addr-spec[3] | SIP URI |  |  |  |
| user-info and host | orig@scscf.3gpp.org |  |  |  |
| port | not present |  |  |  |
| uri-parameters | "lr" |  |  |  |
| addr-spec[4] | SIP URI |  |  |  |
| user-info and host | same address as sent by the UE in the first entry of the Route header of the INVITE | P-CSCF address |  |  |
| port | not present |  |  |  |
| uri-parameters | "lr" |  |  |  |
| **Record-Route** |  |  | RFC 3261 [22] | SUBSCRIBE-RSP |
| addr-spec[1] | SIP URI |  |  |  |
| user-info and host | P-CSCF address of the SS | P-CSCF address as assigned to the UE via NAS signalling or P-CSCF discovery |  |  |
| port | not present |  |  |  |
| uri-parameters | "lr" |  |  |  |
| **From** |  |  |  |  |
| addr-spec | same value as in the request |  |  |  |
| tag | same value as in the request |  |  |  |
| **To** |  |  |  |  |
| addr-spec | same value as in the request |  |  |  |
| tag | same value as in the request or To-tag assigned by the SS if missing in the request |  |  |  |
| **Expires** |  |  | RFC 3261 [22]  RFC 3903 [43] | SUBSCRIBE-RSP,  PUBLISH-RSP |
| value | same value as in the request |  |  |  |
| **Contact** |  |  |  | REGISTER-RSP |
| addr-spec | same value as received in the REGISTER |  |  |  |
| feature-param | "+g.3gpp.mcptt" |  |  | MCPTT |
| feature-param | "+g.3gpp.mcvideo" |  |  | MCVIDEO |
| feature-param | "+g.3gpp.mcdata.sds" |  |  | MCDATA |
| feature-param | "+g.3gpp.mcdata.fd" |  |  | MCDATA |
| expires | "600000" |  |  |  |
| **Contact** |  |  |  | SUBSCRIBE-RSP |
| addr-spec |  |  |  |  |
| user-info and host | Same URI as used as Request-URI of the SUBSCRIBE message |  |  |  |
| port | not present |  |  |  |
| **Contact** |  |  |  | INVITE-RSP |
| addr-spec |  |  |  |  |
| user-info and host | tsc\_MCPTT\_SessionId |  |  | MCPTT |
|  | tsc\_MCVideo\_SessionId |  |  | MCVIDEO |
|  | tsc\_MCData\_SessionId |  |  | MCDATA |
| port | not present |  |  |  |
| feature-param | "+g.3gpp.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.mcvideo" |  |  | MCVIDEO |
|  | "+g.3gpp.mcdata.sds" |  | TS 24.282 [87] clause 9.2.3.2.4 | MCDATA\_SDS |
|  | "+g.3gpp.mcdata.fd" |  | TS 24.282 [87] clause 10.2.5.2.4 | MCDATA\_FD |
| feature-param | "+g.3gpp.icsi-ref= urn:urn- 7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" |  | TS 24.282 [87] clause 9.2.3.2.4 | MCDATA\_SDS |
|  | "+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcdata.fd" |  | TS 24.282 [87] clause 10.2.5.2.4 | MCDATA\_FD |
| feature-param | “audio” |  |  | MCPTT OR MCVIDEO |
| feature-param | “video” |  |  | MCVIDEO |
| feature-param | “text” |  |  | MCDATA |
| feature-param | "isfocus" |  |  |  |
| **Call-ID** |  |  |  |  |
| callid | same value as received in the request |  |  |  |
| **CSeq** |  |  |  |  |
| value | same value as received in the request |  |  |  |
| **Require** |  |  |  | INVITE-RSP |
| option-tag | "timer" |  |  |  |
| **Session-Expires** |  |  |  | INVITE-RSP |
| generic-param | "3600" |  |  |  |
| refresher | "uac" |  |  |  |
| **Supported** |  |  |  | INVITE-RSP |
| option-tag | "tdialog" |  |  |  |
| option-tag | "norefersub" |  |  |  |
| option-tag | "explicitsub" |  |  |  |
| option-tag | "nosub" |  |  |  |
| **Refer-Sub** |  |  | RFC 4488 [36] | REFER-RSP |
| refer-sub-value | “false” |  |  |  |
| **P-Associated-URI** |  |  | RFC 7315 [52] | REGISTER-RSP |
| addr-spec[1] | SIP URI |  |  |  |
| host | px\_MCX\_SIP\_PublicUserId\_A\_1 |  |  |  |
| port | not present |  |  |  |
| **Service-Route** |  |  | RFC 3261 [22] | REGISTER-RSP |
| addr-spec[1] | SIP URI |  |  |  |
| host | scscf.3gpp.org |  |  |  |
| port | not present |  |  |  |
| uri-parameters | "lr" |  |  |  |
| **SIP-ETag** |  |  | RFC 3903 [43] | PUBLISH-RSP |
| entity-tag | unique value arbitrarily selected by the SS |  |  |  |
| **Content-Type** |  |  | RFC 4566 [27] | INVITE-RSP |
| media-type | "application/sdp" |  |  |  |
| **Content-Length** |  |  | RFC 3261 [22] |  |
| value | length of message-body |  |  |  |
| **Message-body** |  |  | RFC 3261 [22] | INVITE-RSP |
| **SDP message** | SDP message as described in Table 5.5.3.1.2-1 |  |  | MCPTT |
|  | SDP message as described in Table 5.5.3.1.2-2 |  |  | MCVIDEO |
|  | SDP message as described in Table 5.5.3.1.2-3 | 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;  INITIAL\_SDP\_OFFER implies SDP\_OFFER, i.e. when a test case or test procedure specifies INITIAL\_SDP\_OFFER then SDP\_OFFER shall be applied too, even when not explicitly specified. |
| SDP\_ANSWER | SDP message is an Answer |
| FIRST\_SDP\_FROM\_UE | First SDP message sent by the UE within the session;  FIRST\_SDP\_FROM\_UE shall be applied implicitly for an SDP message sent by the UE when the SDP message is the first SDP message sent by the UE for a session.  ⇒ In general FIRST\_SDP\_FROM\_UE does not need to be specified for a specific message content. |
| FIRST\_SDP\_FROM\_SS | First SDP message sent by the SS within the session;  FIRST\_SDP\_FROM\_SS shall be applied implicitly for an SDP message sent by the SS when the SDP message is the first SDP message sent by the UE for a session.  ⇒ In general FIRST\_SDP\_FROM\_SS does not need to be specified for a specific message content; nevertheless FIRST\_SDP\_FROM\_SS may be specified for a specific message content when the SDP message is for a new session (e.g. when a new dialog replaces a pre-established session) |
| IMPLICIT\_GRANT\_REQUESTED | An implicit grant is requested by the user |
| IMPLICIT\_FLOOR\_GRANTED | An implicit grant shall be granted by the SS |
| PRE\_ESTABLISHED\_SESSION | SDP message during establishment or modification of a pre-established session NOTE: The condition shall be applied for all SDP messages of preestablished session test cases and it is not explicitly mentioned in specific message content for these test cases |
| WITHOUT\_FLOORCONTROL | SDP message for MCPTT call without floor control:  In general when this condition is applied for an on-demand call the SDP message does not contain a media description for media plane control at all, whereas for call establishment using pre-established session the SDP message still contains a media description for media plane control but without any floor control related fmtp attributes (see TS 24.380 [10] clauses 14.2.6 and 14.3.7). |
| WITHOUT\_TRANSMISSIONCONTROL | SDP message for MCVideo call without transmission control  Editor's note:  In contrast to MCPTT there is no "mc\_no\_floor\_ctrl" (or similar) fmtp parameter for MCVideo yet. |
| WITHOUT\_SECURITY | In case of private call: SDP message shall not contain any "a=key-mgmt" attribute for end-to-end security |
| WITH\_SECURITY | End-to-end security to be applied independent from other conditions like PRIVATE-CALL, SDP\_OFFER (e.g. for first-to-answer call) |
| SDS\_SESSION | SDP message for establishment of an SDS session according to TS 24.282 [87] clause 9.2.4. |

5.5.3.1.1 SDP Message from the UE

- MCPTT

Table 5.5.3.1.1-1: SDP Message from the UE for MCPTT

| Derivation Path: RFC 4566 [27] | | | | |
| --- | --- | --- | --- | --- |
| **Information Element** | **Value/remark** | **Comment** | **Reference** | **Condition** |
| **Session description:** |  |  |  |  |
| **Protocol Version** | "0" | v= line |  |  |
| **Origin** | Same o=line as in the previous SDP message sent by the UE except that sess-version is  incremented by one | o= line |  |  |
| **Origin** |  | o= line |  | FIRST\_SDP\_FROM\_UE |
| username | any allowed value |  |  |  |
| sess-id | any allowed value | A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session |  |  |
| sess-version | any allowed value |  |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address |  |  |  |
| unicast-address | IP address of the UE | IP address assigned at initial registration |  |  |
| **Session Name** | at least one UTF-8-encoded character, or if no name is given, a single empty space | s= line |  |  |
| **Connection Data** | not required if included in all media | c= line |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address |  |  |  |
| connection-address | IP address of the UE |  |  |  |
| **Bandwidth** |  | b= line |  |  |
| "AS" | any allowed value |  | TS 26.114 [64] Table K.6 |  |
| **Time description** |  |  |  |  |
| **Timing** |  | t= line |  |  |
| start-time | "0" |  |  |  |
| stop-time | "0" |  |  |  |
| **Session attribute** | present only if there is no key-mgmt media attribute in the media description for audio | a= line  attribute = key-mgmt  (NOTE 2) |  | WITH\_SECURITY OR (PRIVATE-CALL AND SDP\_OFFER AND NOT WITHOUT\_SECURITY) |
| key-mgmt |  |  | TS 24.379 [9] clause 6.2.1 |  |
| mikey | MIKEY-SAKKE I\_MESSAGE as specified in Table 5.5.9.1-2A |  | 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** |  |  |
| **media description** |  | m= line  media = audio | RFC 4867 [59] |  |
| media | "audio" |  |  |  |
| port | any allowed value | The transport port to which the media stream is sent |  |  |
| proto | "RTP/SAVP" |  |  |  |
| fmt | any allowed value(s) | Indicating RTP payload type numbers |  |  |
| **media title** | "speech" | i= line |  |  |
| **Connection Data** | present if session description does not contain a c=line; optional otherwise | c= line |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address" |  |  |  |
| connection-address | IP address of the UE |  |  |  |
| **Bandwidth** |  | b= line |  |  |
| "AS" | any allowed value |  | TS 26.114 [64] Table K.6 |  |
| "RS" | any allowed value if present |  | RFC 3556 [113] |  |
| "RR" | any allowed value if present |  | RFC 3556 [113] |  |
| **media attribute** |  | a= line  attribute = rtpmap |  |  |
| rtpmap | "rtpmap" |  |  |  |
| payload type | same value as format parameter of the "fmtp" attribute |  |  |  |
| encoding name | "AMR-WB" |  |  |  |
| clock rate | 16000 |  | RFC 4867 [59] clause 8.3 |  |
| encoding parameter | "1" if present | Channel number |  |  |
| **media attribute** |  | a= line  attribute = fmtp |  |  |
| fmtp | "fmtp" |  |  |  |
| format | a value given in fmt in the audio media description |  |  |  |
| format specific parameters |  | Parameters of WB-AMR codec  NOTE: In addition to the parameters below the UE may provide further parameters |  |  |
| mode-change-capability | "2" | To be able to interoperate fully with gateways to circuit switched networks | RFC 4867 [59] clause 8.2 |  |
| max-red | "0" | No redundancy will be used | RFC 4867 [59] clause 8.2 |  |
| **media attribute** |  | a= line  attribute =ptime |  |  |
| ptime | any allowed value | packet time |  |  |
| **media attribute** |  | a= line  attribute =maxptime |  |  |
| maxptime | any allowed value | maximum packet time |  |  |
| **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 |  | WITH\_SECURITY OR (PRIVATE-CALL AND SDP\_OFFER AND NOT WITHOUT\_SECURITY) |
| key-mgmt |  |  | TS 24.379 [9] clause 6.2.1 |  |
| mikey | MIKEY-SAKKE I\_MESSAGE as specified in Table 5.5.9.1-2A |  | RFC 4567 [44] |  |
| **Media description[2]** |  | Media description for media control |  | NOT WITHOUT\_FLOORCONTROL OR PRE\_ESTABLISHED\_SESSION |
| **media description** |  | m= line  media = application  SDP media-level section for a media-control entity  (NOTE 2) |  |  |
| media | "application" |  |  |  |
| port | any allowed value | The port for the media-control entity |  |  |
| proto | "udp" |  |  |  |
| fmt | "MCPTT" |  |  |  |
| **Connection Data** | present if session description does not contain a c=line; optional otherwise | c= line |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address" |  |  |  |
| connection-address | IP address of the UE |  |  |  |
| **media attribute** |  | a= line  attribute = fmtp |  |  |
| fmtp |  |  |  |  |
| format | "MCPTT" |  |  |  |
| format specific parameters |  |  |  | SDP\_OFFER AND NOT WITHOUT\_FLOORCONTROL |
| mc\_queueing | not present |  | TS 24.380 [10] cl. 12.1.2.3 |  |
|  | present | Parameter has no value |  | pc\_MCPTT\_FloorRequestQueueing |
| 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 |
| mc\_ssrc | any value if present |  | TS 24.380 [10] cl. 12.1.2.3 |  |
| mc\_no\_floor\_ctrl | not present |  | TS 24.380 [10] cl. 12.1.2.3 |  |
| format specific parameters |  |  |  | SDP\_ANSWER AND NOT WITHOUT\_FLOORCONTROL |
| mc\_queueing | not present |  | TS 24.380 [10] cl. 12.1.2.3 |  |
|  | present | Parameter has no value |  | pc\_MCPTT\_FloorRequestQueueing |
| 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 |  |
| format specific parameters |  |  |  | WITHOUT\_FLOORCONTROL |
| mc\_queueing | not present |  | TS 24.380 [10] cl. 12.1.2.3 |  |
| mc\_priority | not present |  | 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 |  |
| 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 |  |
| mc\_no\_floor\_ctrl | present | Parameter has no value | TS 24.380 [10] cl. 12.1.2.3 |  |
| **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 | any allowed value |  |  |  |
| sess-id | any allowed value | A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session. |  |  |
| sess-version | any allowed value |  |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address |  |  |  |
| unicast-address | IP address of the UE | IP address assigned at initial registration |  |  |
| **Session Name** | at least one UTF-8-encoded character, or if no name is given, a single empty space | s= line |  |  |
| **Connection Data** | not required if included in all media | c= line |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address |  |  |  |
| connection-address | IP address of the UE |  |  |  |
| Bandwidth |  | b= line |  |  |
| "AS" | any allowed value |  |  |  |
| **Time description** |  |  |  |  |
| Timing |  | t= line |  |  |
| start-time | "0" |  |  |  |
| stop-time | "0" |  |  |  |
| **Session attribute** | present only if there is no key-mgmt media attribute in the media descriptions for audio and video | a= line  attribute = key-mgmt  (NOTE 2) |  | WITH\_SECURITY OR (PRIVATE-CALL AND SDP\_OFFER AND NOT WITHOUT\_SECURITY) |
| key-mgmt |  |  | TS 24.379 [9] clause 6.2.1 |  |
| mikey | MIKEY-SAKKE I\_MESSAGE as specified in Table 5.5.9.1-2A |  | 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** |  |  |
| **media description** |  | m= line  media = audio | RFC 4867 [59] |  |
| media | "audio" |  |  |  |
| port | any allowed value | The transport port to which the media stream is sent |  |  |
| proto | "RTP/SAVP" |  |  |  |
| fmt | any allowed value(s) | Indicating RTP payload type numbers |  |  |
| **media title** | "audio component of MCVideo" | i= line |  |  |
| **Connection Data** | present if session description does not contain a c=line; optional otherwise | c= line |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address" |  |  |  |
| connection-address | IP address of the UE |  |  |  |
| **Bandwidth** |  | b= line |  |  |
| "AS" | any allowed value |  |  |  |
| "RS" | any allowed value if present |  | RFC 3556 [113] |  |
| "RR" | any allowed value if present |  | RFC 3556 [113] |  |
| **media attribute** |  | a= line  attribute = rtpmap |  |  |
| rtpmap | "rtpmap" |  |  |  |
| payload type | same value as format parameter of the "fmtp" attribute |  |  |  |
| encoding name | "AMR-WB" |  |  |  |
| clock rate | 16000 |  | RFC 4867 [59] clause 8.3 |  |
| encoding parameter | "1" if present | Channel number |  |  |
| **media attribute** |  | a= line  attribute = fmtp |  |  |
| fmtp | "fmtp" |  |  |  |
| format | a value given in fmt in the audio media description |  |  |  |
| format specific parameters |  | Parameters of WB-AMR codec  NOTE: In addition to the parameters below the UE may provide further parameters |  |  |
| mode-change-capability | "2" | To be able to interoperate fully with gateways to circuit switched networks | RFC 4867 [59] clause 8.2 |  |
| max-red | "0" | No redundancy will be used | RFC 4867 [59] clause 8.2 |  |
| media attribute |  | a= line  attribute =ptime |  |  |
| ptime | any allowed value | packet time |  |  |
| **media attribute** |  | a= line  attribute =maxptime |  |  |
| maxptime | any allowed value | maximum packet time |  |  |
| **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 audio media's c= line or in the session's c= line if the audio media does not have a c= line | default candidate |  |  |
| port | same port number as in the m= line for audio |  |  |  |
| cand-type | "host" |  |  |  |
| **media attribute** |  | a=line  attribute=”candidate” | RFC 5245 [115] | PRE\_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 audio media's c= line or in the session's c= line if the audio media does not have a c= line | default candidate |  |  |
| port | same port number as in the m= line for audio incremented by 1 |  |  |  |
| cand-type | "host" |  |  |  |
| **media attribute** | present only if there is no key-mgmt attribute at session level | a= line  attribute = key-mgmt |  | WITH\_SECURITY OR (PRIVATE-CALL AND SDP\_OFFER AND NOT WITHOUT\_SECURITY) |
| key-mgmt |  |  | TS 24.281 [86] clause 6.2.1 |  |
| mikey | MIKEY-SAKKE I\_MESSAGE as specified in Table 5.5.9.1-2A (NOTE 4) | 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 | "RTP/SAVPF" or "RTP/SAVP" |  |  |  |
| fmt | any allowed value(s) |  |  |  |
| **media title** | "video component of MCVideo" | i= line |  |  |
| **Connection Data** | present if session description does not contain a c=line; optional otherwise | c= line |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address" |  |  |  |
| connection-address | IP address of the UE |  |  |  |
| **Bandwidth** |  | b= line |  |  |
| "AS" | any allowed value |  |  |  |
| "RS" | any allowed value if present |  | RFC 3556 [113] |  |
| "RR" | any allowed value if present |  | RFC 3556 [113] |  |
| **media attribute** |  | a= line  attribute = rtpmap |  |  |
| rtpmap | "rtpmap" |  |  |  |
| payload type | same value as format parameter of the "fmtp" attribute |  |  |  |
| encoding name | "H264" |  |  |  |
| clock rate | 90000 |  | RFC 4867 [59] clause 8.3 |  |
| **media attribute** |  | a= line  attribute = fmtp |  |  |
| fmtp | "fmtp" |  |  |  |
| format | a value given in fmt in the audio media description |  |  |  |
| format specific parameters |  | Parameters of H264 codec  NOTE: In addition to the parameters below the UE may provide further parameters | RFC 6184 [129] |  |
| profile-level-id | any allowed value |  |  |  |
| packetization-mode | 0 |  |  | SDP\_ANSWER |
| **media attribute** | present if proto="RTP/AVP" in the m=line | a= line  attribute = tcap | RFC 5939 [128]  TS 26.114 [64] clause 6.2.1a.2 | SDP\_OFFER |
| tcap |  |  |  |  |
| trpr-cap-num | 1 |  |  |  |
| proto-list | RTP/AVPF |  |  |  |
| **media attribute** | present if proto="RTP/AVP" in the m=line | a= line  attribute = pcfg | RFC 5939 [128]  TS 26.114 [64] clause 6.2.1a.2 | SDP\_OFFER |
| pcfg |  |  |  |  |
| config-number | 1 |  |  |  |
| pot-cfg-list | t=1 |  |  |  |
| **media attribute** | one or several attribute lines if present | a=line  attribute=ssrc | RFC 5576 [116] |  |
| ssrc |  |  |  |  |
| ssrc-id | any allowed value but all the same if there is more than one ssrc attribute for 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 video media's c= line or in the session's c= line if the video media does not have a c= line | default candidate |  |  |
| port | same port number as in the m= line for video |  |  |  |
| cand-type | "host" |  |  |  |
| **media attribute** |  | a=line  attribute=”candidate” | RFC 5245 [115] | PRE\_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 video media's c= line or in the session's c= line if the video media does not have a c= line | default candidate |  |  |
| port | same port number as in the m= line for video incremented by 1 |  |  |  |
| cand-type | "host" |  |  |  |
| **media attribute** | present only if there is no key-mgmt attribute at session level | a= line  attribute = key-mgmt |  | WITH\_SECURITY OR (PRIVATE-CALL AND SDP\_OFFER AND NOT WITHOUT\_SECURITY) |
| key-mgmt |  |  | TS 24.281 [86] clause 6.2.1 |  |
| mikey | MIKEY-SAKKE I\_MESSAGE as specified in Table 5.5.9.1-2A (NOTE 4) | Use condition MCVIDEO | RFC 4567 [44] |  |
| **Media description[3]** |  | Media description for media control |  | NOT WITHOUT\_TRANSMISSIONCONTROL OR PRE\_ESTABLISHED\_SESSION |
| **media description** |  | m= line  media = application  SDP media-level section for a media-control entity  (NOTE 2) |  |  |
| media | "application" |  | 3GPP TS 24.581 [88] clause 12 |  |
| port | any allowed value | The port for the media-control entity |  |  |
| proto | "udp" |  |  |  |
| fmt | "MCVideo" |  |  |  |
| **Connection Data** | present if session description does not contain a c=line; optional otherwise | c= line |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address" |  |  |  |
| connection-address | IP address of the UE |  |  |  |
| **media attribute** |  | a= line  attribute = fmtp |  |  |
| fmtp |  |  | 3GPP TS 24.581 [88] clause 12, clause 14 |  |
| format | "MCVideo" |  |  |  |
| format specific parameters |  |  |  | SDP\_OFFER AND NOT WITHOUT\_TRANSMISSIONCONTROL |
| mc\_queueing | not present |  | 3GPP TS 24.581 [88] clause 12, clause 14 |  |
|  | present | Parameter has no value. |  | pc\_MCVideo\_TransmissionRequestQueueing |
| mc\_priority | any allowed value if present | Any integer value in the range of 1..255  Shall be present when priority other than the default priority is required | 3GPP TS 24.581 [88] clause 12, clause 14 |  |
| mc\_reception\_priority | any allowed value if present | Any integer value in the range of 0…255  Shall be present when priority other than the default reception priority is required | 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 AND NOT WITHOUT\_TRANSMISSIONCONTROL |
| mc\_queueing | not present |  | 3GPP TS 24.581 [88] clause 12, clause 14 |  |
|  | present | Parameter has no value |  | pc\_MCVideo\_TransmissionRequestQueueing |
| mc\_priority | same value as in the SDP offer if present, not present otherwise |  | 3GPP TS 24.581 [88] clause 12, clause 14 |  |
| mc\_reception\_priority | same value as in the SDP offer if present, not present otherwise |  | 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 |  |
| **media attribute** |  | a=line  attribute=”candidate” | RFC 5245 [115] | PRE\_ESTABLISHED\_SESSION |
| candidate |  | candidate for Transmission Control Messages |  |  |
| foundation | any value |  |  |  |
| component-id | 1 | according to RFC 5245 [115] clause 4.1.1.1 |  |  |
| transport | "UDP" |  |  |  |
| priority | any value |  |  |  |
| connection-address | same IP address as in application media's c= line or in the session's c= line if the application media does not have a c= line | default candidate |  |  |
| port | same port number as in the m= line for application |  |  |  |
| cand-type | "host" |  |  |  |
| NOTE 1: If "ssrc" media attributes are included, then at least one "ssrc=" line shall contain a "cname" source attribute according to RFC 5576 [116] clause 6.1.  NOTE 2: Even though there is no clarity in core specs it is assumed that a key-mgmt attribute at session level does not affect the media control security, i.e. the key-mgmt attribute is not applicable for the "application" media description for which still the CSK is used as security key. This is in contrast to RFC 4566 [27] clause 5 saying "In general, session-level values are the default for all media unless overridden by an equivalent media-level value."  NOTE 3: If the UE is configured as lite implementation according to RFC 5245 [115], it shall include "a=ice-lite" session-level attribute; nevertheless this is not a test requirement unless specified otherwise in a test case.  NOTE 4: If present the a=key-mgmt attributes for audio and video carry the same keys. | | | | |

- MCData

**Table 5.5.3.1.1-3: SDP Message from the UE for MCData**

| Derivation Path: RFC 4566 [27] | | | | |
| --- | --- | --- | --- | --- |
| **Information Element** | **Value/remark** | **Comment** | **Reference** | **Condition** |
| **Session description:** |  |  |  |  |
| **Protocol Version** | "0" | v= line |  |  |
| **Origin** | Same o=line as in the previous SDP message sent by the UE except that sess-version is incremented by one | o= line |  |  |
| **Origin** |  | o= line |  | FIRST\_SDP\_FROM\_UE |
| username | any allowed value |  |  |  |
| sess-id | any allowed value | A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session. |  |  |
| sess-version | any allowed value |  |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address" |  |  |  |
| unicast-address | IP address of the UE | IP address assigned at initial registration |  |  |
| **Session Name** | at least one UTF-8-encoded character, or if no name is given, a single empty space | s= line |  |  |
| **Connection Data** | not required if included in all media | c= line |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address" |  |  |  |
| connection-address | IP address of the UE |  |  |  |
| **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 |  | SDP\_OFFER AND MCD\_1to1 |
| key-mgmt |  |  | TS 24.379 [9] clause 6.2.1 |  |
| mikey | MIKEY-SAKKE I\_MESSAGE as specified in Table 5.5.9.1-2A |  | RFC 4567 [44] |  |
| **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 | “\*” |  |  |  |
| **Connection Data** | present if session description does not contain a c=line; optional otherwise | c= line |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address" |  |  |  |
| connection-address | IP address of the UE |  |  |  |
| **media attribute** |  | a= line  attribute = sendonly |  | SDP\_OFFER AND NOT SDS\_SESSION |
| sendonly |  | No parameters associated with this line |  |  |
| **media attribute** |  | a= line  attribute = recvonly |  | SDP\_ANSWER AND NOT SDS\_SESSION |
| recvonly |  | No parameters associated with this line |  |  |
| **media attribute** |  | a= line  attribute = sendrecv |  | SDS\_SESSION |
| sendrecv |  | No parameters associated with this line |  |  |
| **media attribute** |  | a= line  attribute = path |  |  |
| path | MSRP URI according to RFC 4975 [120] clause 6 and 9 | attribute containing its own MSRP URI.  An example:  msrp://mcdata.example.com:7654/abcde1; tcp | TS 24.282 [31] |  |
| scheme | "msrp" |  |  |  |
| authority |  |  | RFC 3986 [123] clause 3.2 |  |
| userinfo | any value if present |  |  |  |
| host | any allowed value | domain name or IP address of the UE |  |  |
| port | same value as in the media line if present | port at which the UE may be connected to for MSRP;  mandatory when hostname is an IP address |  |  |
| session id | any allowed value if present |  |  |  |
| transport | "tcp" | mandatory for MSRP according to RFC 4975 [120] clause 6 |  |  |
| URI-parameter | not present |  |  |  |
| **media attribute** |  | a= line  attribute = accept-types | RFC 4975 [120] |  |
| accept-types |  |  |  |  |
| format-entry[1] | "application/vnd.3gpp.mcdata-signalling" |  |  |  |
| format-entry[2] | "application/vnd.3gpp.mcdata-payload" |  |  | MCDATA\_SDS |
| **media attribute** |  | a= line  attribute = setup | RFC 4145 [119] |  |
| setup | “actpass” |  |  | SDP\_OFFER |
|  | "active" or "passive" |  |  | SDP\_ANSWER |
| **media attribute** |  | a= line  attribute = file-transfer-id | RFC 5547 [124] | MCDATA\_FD |
| file-transfer-id | any allowed value |  | RFC 5547 [124] clause 8.2.1 | SDP\_OFFER |
|  | same value as in the sdp offer |  | RFC 5547 [124] clause 8.2.2 | SDP\_ANSWER |
| **media attribute** |  | a= line  attribute = file-selector | RFC 5547 [124] | MCDATA\_FD |
| file-selector |  |  |  | SDP\_OFFER |
| selector[1] |  |  |  |  |
| filename | any allowed value | e.g. "TestFile.txt" |  |  |
| filesize | size of the file to be transferred |  |  |  |
| filetype | any allowed value | e.g. "text/plain" |  |  |
| hash |  |  |  |  |
| algorithm | "sha-1" |  |  |  |
| value | hash value of the file to be transferred |  |  |  |
| file-selector | same value as in the sdp offer |  |  | SDP\_ANSWER |
| **media attribute** |  | a= line  attribute = file-date | RFC 5547 [124] | MCDATA\_FD AND SDP\_OFFER |
| file-date |  |  |  |  |
| date-param | at least one entry with an allowed value |  |  |  |
| **media attribute** | present only if there is no key-mgmt attribute at session level | a= line  attribute = key-mgmt |  | SDP\_OFFER AND MCD\_1to1 |
| key-mgmt |  |  | TS 24.379 [9] clause 6.2.1 |  |
| mikey | MIKEY-SAKKE I\_MESSAGE as specified in Table 5.5.9.1-2A | 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 | | "11111111" | A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session. | |  |  |
| sess-version | | "11111111" |  | |  |  |
| nettype | | "IN" |  | |  |  |
| Addrtype | | "IP4" or "IP6" depending on IP address" | This depends on the unicast address of the UE | |  |  |
| unicast-address | | IP address of the SS |  | |  |  |
| **Session Name** | | " " | s= line  single empty space indicating no session name | |  |  |
| **Bandwidth** | |  | b= line | |  |  |
| "AS" | | 38 |  | | TS 26.114 [64] Table K.6 |  |
| **Time description** | |  |  | |  |  |
| **Timing** | |  | t= line | |  |  |
| start-time | | "0" |  | |  |  |
| stop-time | | "0" |  | |  |  |
| **Session attribute** | |  | a=line  attribute=”ice-lite” | | RFC 5245 [115] | PRE\_ESTABLISHED\_SESSION |
| ice-lite | |  |  | |  |  |
| **Media description[1]** | |  | **Media description for audio** | |  |  |
| **media description** | |  | m= line  media = audio | | RFC 4867 [59] |  |
| media | | "audio" |  | |  |  |
| port | | port number assigned by the SS (even integer) | The transport port to which the media stream is sent | | RFC 6335 [63] clause 6 |  |
| proto | | "RTP/SAVP" |  | |  |  |
| fmt | | "99" | RTP/SAVP payload type for AMR-WB is dynamic | |  | INITIAL\_SDP\_OFFER |
|  | | value for AMR-WB as used in initial offer |  | |  |  |
| **media title** | | "speech" | i= line | |  |  |
| **Connection Data** | |  | c= line | |  |  |
| nettype | | "IN" |  | |  |  |
| Addrtype | | "IP4" or "IP6" depending on IP address" | This depends on the connection address | |  |  |
| connection-address | | IP address of the SS |  | |  |  |
| **Bandwidth** | |  | b= line | |  |  |
| "AS" | | 38 |  | | TS 26.114 [64] Table K.6 |  |
| "RS" | | 0 |  | | RFC 3556 [113] |  |
| "RR" | | 2000 |  | | RFC 3556 [113] |  |
| **media attribute** | |  | a= line  attribute = rtpmap | |  |  |
| rtpmap | | "rtpmap" |  | |  |  |
| payload type | | "99" |  | |  | INITIAL\_SDP\_OFFER |
|  | | value for AMR-WB as used in initial offer |  | |  |  |
| encoding name | | "AMR-WB" |  | |  |  |
| clock rate | | 16000 |  | | RFC 4867 [59] clause 8.3 |  |
| encoding parameter | | "1" | Channel number | |  |  |
| **media attribute** | |  | a= line  attribute = fmtp | |  |  |
| fmtp | |  |  | |  |  |
| format | | "99" |  | |  | INITIAL\_SDP\_OFFER |
|  | | value for AMR-WB as used in initial offer |  | |  |  |
| format specific parameters | |  | Parameters of WB-AMR codec | |  |  |
| mode-change-capability | | "2" | To be able to interoperate fully with gateways to circuit switched networks | | RFC 4867 [59] clause 8.2 |  |
| max-red | | "0" | No redundancy will be used | | RFC 4867 [59] clause 8.2 |  |
| **media attribute** | |  | a= line  attribute =ptime | |  |  |
| ptime | | "20" | packet time | |  |  |
| **media attribute** | |  | a= line  attribute =maxptime | |  |  |
| maxptime | | "240" | maximum packet time | |  |  |
| **media attribute** | |  | a= line  attribute = key-mgmt | |  | WITH\_SECURITY OR (PRIVATE-CALL AND SDP\_OFFER AND NOT WITHOUT\_SECURITY) |
| key-mgmt | |  |  | | TS 24.379 [9] clause 6.2.1 |  |
| mikey | | MIKEY-SAKKE I\_MESSAGE as specified in Table 5.5.9.1-2 |  | | RFC 4567 [44] |  |
| **media attribute** | |  | a=line  attribute=”candidate” | | RFC 5245 [115] | PRE\_ESTABLISHED\_SESSION |
| candidate | |  | candidate for RTP | |  |  |
| foundation | | 1234 | arbitrarily selected | |  |  |
| component-id | | 1 | according to RFC 5245 [115] clause 4.1.1.1 | |  |  |
| transport | | "UDP" |  | |  |  |
| priority | | 2130706431 | RFC 5245 [115] clause 4.2:  224 \* 126 + 28 \* 65535 + 256 - component id | |  |  |
| connection-address | | IP address of the SS (same IP address as in the c=line 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:  224 \* 126 + 28 \* 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\_FLOORCONTROL OR PRE\_ESTABLISHED\_SESSION |
| **media description** | |  | m= line  media = application  SDP media-level section for a media control entity | |  |  |
| media | | "application" |  | |  |  |
| port | | port number assigned by the SS being different than the port number of the audio channel (RTP) and its associated control channel (RTCP)" | The port for the media control entity | |  |  |
| proto | | "udp" |  | |  |  |
| fmt | | "MCPTT" |  | |  |  |
| **Connection Data** | |  | c= line | |  |  |
| nettype | | "IN" |  | |  |  |
| Addrtype | | "IP4" or "IP6" depending on IP address | This depends on the connection address | |  |  |
| connection-address | | IP address of the SS |  | |  |  |
| **media attribute** | |  | a= line  attribute = fmtp | |  |  |
| fmtp | |  |  | |  |  |
| format | | "MCPTT" |  | |  |  |
| format specific parameters | |  |  | |  | SDP\_OFFER AND NOT WITHOUT\_FLOORCONTROL |
| 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. 14.3.3 |  |
| 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 |  |
| mc\_no\_floor\_ctrl | | not present |  | | TS 24.380 [10] cl. 12.1.2.3 |  |
| format specific parameters | |  |  | |  | SDP\_ANSWER AND NOT WITHOUT\_FLOORCONTROL |
| mc\_queueing | | present if included in the offer | Parameter has no value | | TS 24.380 [10] 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 |  |
|  | | 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 |
| mc\_no\_floor\_ctrl | | not present |  | | TS 24.380 [10] cl. 12.1.2.3 |  |
| format specific parameters | |  |  | |  | WITHOUT\_FLOORCONTROL |
| mc\_queueing | | not present |  | | TS 24.380 [10] cl. 12.1.2.3 |  |
| mc\_priority | | not present |  | | 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 |  |
| 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 |  |
| mc\_no\_floor\_ctrl | | present | Parameter has no value | | TS 24.380 [10] cl. 12.1.2.3 |  |
| **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:  224 \* 126 + 28 \* 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 | "-" | "-" indicating the concept of user IDs not being supported |  |  |
| sess-id | "11111111" | A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session. |  |  |
| sess-version | "11111111" |  |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address | This depends on the unicast address of the UE |  |  |
| unicast-address | IP address of the SS |  |  |  |
| **Session Name** | " " | s= line  single empty space indicating no session name |  |  |
| **Bandwidth** |  | b= line |  |  |
| "AS" | 352 |  |  |  |
| **Time description** |  |  |  |  |
| Timing |  | t= line |  |  |
| start-time | "0" |  |  |  |
| stop-time | "0" |  |  |  |
| **Session attribute** |  | a=line  attribute=”ice-lite” | RFC 5245 [115] | PRE\_ESTABLISHED\_SESSION |
| ice-lite |  |  |  |  |
| **Media description[1]** |  | Media description for audio |  |  |
| **media description** |  | m= line  media = audio | RFC 4867 [59] |  |
| media | "audio" |  |  |  |
| port | port number assigned by the SS (even integer) | The transport port to which the media stream is sent | RFC 6335 [63] clause 6 |  |
| proto | "RTP/SAVP" |  |  |  |
| fmt | "99" | RTP/SAVP payload type for AMR-WB is dynamic |  | INITIAL\_SDP\_OFFER |
|  | value for AMR-WB as used in initial offer |  |  |  |
| **media title** | "audio component of MCVideo" | i= line |  |  |
| **Connection Data** |  | c= line |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address | This depends on the connection address |  |  |
| connection-address | IP address of the SS |  |  |  |
| **Bandwidth** |  | b= line |  |  |
| "AS" | 37 |  |  |  |
| "RS" | 0 |  | RFC 3556 [113] |  |
| "RR" | 2000 |  | RFC 3556 [113] |  |
| **media attribute** |  | a= line  attribute = rtpmap |  |  |
| rtpmap | "rtpmap" |  |  |  |
| payload type | "99" |  |  | INITIAL\_SDP\_OFFER |
|  | value for AMR-WB as used in initial offer |  |  |  |
| encoding name | "AMR-WB" |  |  |  |
| clock rate | 16000 |  | RFC 4867 [59] clause 8.3 |  |
| encoding parameter | "1" | Channel number |  |  |
| **media attribute** |  | a= line  attribute = fmtp |  |  |
| fmtp |  |  |  |  |
| format | "99" |  |  | INITIAL\_SDP\_OFFER |
|  | value for AMR-WB as used in initial offer |  |  |  |
| format specific parameters |  | Parameters of WB-AMR codec |  |  |
| mode-change-capability | "2" | To be able to interoperate fully with gateways to circuit switched networks | RFC 4867 [59] clause 8.2 |  |
| max-red | "0" | No redundancy will be used | RFC 4867 [59] clause 8.2 |  |
| **media attribute** |  | a= line  attribute =ptime |  |  |
| ptime | "20" | packet time |  |  |
| **media attribute** |  | a= line  attribute =maxptime |  |  |
| maxptime | "240" | maximum packet time |  |  |
| **media attribute** |  | a= line  attribute = key-mgmt |  | WITH\_SECURITY OR (PRIVATE-CALL AND SDP\_OFFER AND NOT WITHOUT\_SECURITY) |
| key-mgmt |  |  | TS 24.281 [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 attribute** |  | a=line  attribute=”candidate” | RFC 5245 [115] | PRE\_ESTABLISHED\_SESSION |
| candidate |  | candidate for RTP |  |  |
| foundation | 1234 | arbitrarily selected |  |  |
| component-id | 1 | according to RFC 5245 [115] clause 4.1.1.1 |  |  |
| transport | "UDP" |  |  |  |
| priority | 2130706431 | RFC 5245 [115] clause 4.2:  224 \* 126 + 28 \* 65535 + 256 - component id |  |  |
| connection-address | IP address of the SS (same IP address as in the c=line for audio) | default candidate |  |  |
| port | same port number as in the m= line for audio |  |  |  |
| cand-type | "host" |  |  |  |
| **media attribute** |  | a=line  attribute=”candidate” | RFC 5245 [115] | PRE\_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:  224 \* 126 + 28 \* 65535 + 256 - component id |  |  |
| connection-address | IP address of the SS (same IP address as in the c=line for audio) | default candidate |  |  |
| port | same port number as in the m= line for audio incremented by 1 |  |  |  |
| cand-type | "host" |  |  |  |
| **Media description[2]** |  | Media description for video |  |  |
| **media description** |  | m= line  media = video  SDP media-level section for a media-transmission control entity |  |  |
| media | "video" |  |  |  |
| port | port number of the audio stream incremented by 2 (resulting in even integer) | The port for the media-transmission control entity |  |  |
| proto | "RTP/SAVPF" |  |  |  |
| fmt | "100" |  |  | INITIAL\_SDP\_OFFER |
|  | value for H264 as used in initial offer |  |  |  |
| **media title** | "video component of MCVideo" | i= line |  |  |
| **Connection Data** |  | c= line |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address |  |  |  |
| connection-address | IP address of the SS |  |  |  |
| **Bandwidth** |  | b= line |  |  |
| "AS" | 315 |  |  |  |
| "RS" | 0 |  | RFC 3556 [113] |  |
| "RR" | 2500 |  | RFC 3556 [113] |  |
| **media attribute** |  | a= line  attribute = rtpmap |  |  |
| rtpmap | "rtpmap" |  |  |  |
| payload type | "100" |  |  | INITIAL\_SDP\_OFFER |
|  | value for H264 as used in initial offer |  |  |  |
| encoding name | "H264" |  |  |  |
| clock rate | 90000 |  | RFC 6184 [129] |  |
| **media attribute** |  | a= line  attribute = fmtp |  |  |
| fmtp |  |  |  |  |
| format | "100" |  |  | INITIAL\_SDP\_OFFER |
|  | value for H264 as used in initial offer |  |  |  |
| format specific parameters |  | Parameters the H264 codec | RFC 6184 [129] | SDP\_OFFER |
| packetization-mode | "0" |  |  |  |
| profile-level-id | "42e00c" |  |  |  |
| sprop-parameter-sets | "J0LgDJWgUH6Af1A=,KM46gA==" |  |  |  |
| format specific parameters | same parameters and values as sent by the UE in the corresponding SDP offer | Parameters the H264 codec |  | SDP\_ANSWER |
| **media attribute** |  | a= line  attribute = rtcp-fb | RFC 4585 [130] | SDP\_OFFER |
| rtcp-fb |  |  |  |  |
| rtcp-fb-pt | "\*" |  |  |  |
| rtcp-fb-val | "trr-int 5000" |  |  |  |
| **media attribute** |  | a= line  attribute = rtcp-fb | RFC 4585 [130] | SDP\_OFFER |
| rtcp-fb |  |  |  |  |
| rtcp-fb-pt | "\*" |  |  |  |
| rtcp-fb-val | "nack" |  |  |  |
| **media attribute** |  | a= line  attribute = rtcp-fb | RFC 4585 [130] | SDP\_OFFER |
| rtcp-fb |  |  |  |  |
| rtcp-fb-pt | "\*" |  |  |  |
| rtcp-fb-val | "nack pli" |  |  |  |
| **media attribute** |  | a= line  attribute = rtcp-fb | RFC 4585 [130] | SDP\_OFFER |
| rtcp-fb |  |  |  |  |
| rtcp-fb-pt | "\*" |  |  |  |
| rtcp-fb-val | "ccm fir" |  |  |  |
| **media attribute** |  | a= line  attribute = rtcp-fb | RFC 4585 [130] | SDP\_OFFER |
| rtcp-fb |  |  |  |  |
| rtcp-fb-pt | "\*" |  |  |  |
| rtcp-fb-val | "ccm tmmbr" |  |  |  |
| **media attribute** | present if there have been a=tcap and a=pcfg attributes in the corresponding SDP offer | a= line  attribute = acfg | RFC 5939 [128]  TS 26.114 [64] clause 6.2.1a.3 | SDP\_ANSWER |
| acfg |  |  |  |  |
| config-number | 1 |  |  |  |
| sel-cfg-list | "t=1" |  |  |  |
| **media attribute** |  | a= line  attribute = key-mgmt |  | WITH\_SECURITY OR (PRIVATE-CALL AND SDP\_OFFER AND NOT WITHOUT\_SECURITY) |
| key-mgmt |  |  | TS 24.281 [86] clause 6.2.1 |  |
| mikey | MIKEY-SAKKE I\_MESSAGE as specified in Table 5.5.9.1-2 | Use condition MCVIDEO | RFC 4567 [44] |  |
| **media attribute** |  | a=line  attribute=”candidate” | RFC 5245 [115] | PRE\_ESTABLISHED\_SESSION |
| candidate |  | candidate for RTP |  |  |
| foundation | 2345 | arbitrarily selected; different than audio |  |  |
| component-id | 1 | according to RFC 5245 [115] clause 4.1.1.1 |  |  |
| transport | "UDP" |  |  |  |
| priority | 2130706431 | RFC 5245 [115] clause 4.2:  224 \* 126 + 28 \* 65535 + 256 - component id |  |  |
| connection-address | IP address of the SS (same IP address as in the c=line for video) | default candidate |  |  |
| port | same port number as in the m= line for video |  |  |  |
| cand-type | "host" |  |  |  |
| **media attribute** |  | a=line  attribute=”candidate” | RFC 5245 [115] | PRE\_ESTABLISHED\_SESSION |
| candidate |  | candidate for RTCP |  |  |
| foundation | 22345 | same as for RTP |  |  |
| component-id | 2 | according to RFC 5245 [115] clause 4.1.1.1 |  |  |
| transport | "UDP" |  |  |  |
| priority | 2130706430 | RFC 5245 [115] clause 4.2:  224 \* 126 + 28 \* 65535 + 256 - component id |  |  |
| connection-address | IP address of the SS (same IP address as in the c=line for video) | default candidate |  |  |
| port | same port number as in the m= line for video incremented by 1 |  |  |  |
| **Media description[3]** |  | Media description for media control |  | NOT WITHOUT\_TRANSMISSIONCONTROL OR PRE\_ESTABLISHED\_SESSION |
| **media description** |  | m= line  media = application  SDP media-level section for a media control entity |  |  |
| media | "application" |  |  |  |
| port | port number assigned by the SS being different than the port number of the audio and video channels (RTP) and their associated control channels (RTCP)" | The port for the media control entity |  |  |
| proto | "udp" |  |  |  |
| fmt | "MCVideo" |  |  |  |
| **Connection Data** |  | c= line |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address | This depends on the connection address |  |  |
| connection-address | IP address of the SS |  |  |  |
| **media attribute** |  | a= line  attribute = fmtp |  |  |
| fmtp |  |  |  |  |
| format | "MCVideo" |  |  |  |
| format specific parameters |  |  |  | SDP\_OFFER AND NOT WITHOUT\_TRANSMISSIONCONTROL |
| 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 |  | 3GPP TS 24.581 [88] clause 12, clause 14 |  |
| mc\_implicit\_request | not present |  | 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 AND NOT WITHOUT\_TRANSMISSIONCONTROL |
| mc\_queueing | present if included in the offer | Parameter has no value | 3GPP TS 24.581 [88] clause 12, clause 14 |  |
| mc\_priority | if a value is provided in the offer: "3" or the value provided in the offer, whichever is the lower value;  otherwise not present | "3" is the value of the <user-priority> element for user A in the MCVideo Group Configuration (Table 5.5.7.2-1) | 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 | not present |  |  |  |
|  | present | Parameter has no value | 3GPP TS 24.581 [88] clause 12, clause 14 | IMPLICIT\_GRANT\_REQUESTED |
| mc\_reception\_priority | same value as in the SDP offer if present, not present otherwise |  | 3GPP TS 24.581 [88] clause 12, clause 14 |  |
| **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 (audio, video) |  |  |
| component-id | 1 | according to RFC 5245 [115] clause 4.1.1.1 |  |  |
| transport | "UDP" |  |  |  |
| priority | 2130706431 | RFC 5245 [115] clause 4.2:  224 \* 126 + 28 \* 65535 + 256 - component id |  |  |
| connection-address | IP address of the SS (same IP address as in the c=line for media control) | default candidate |  |  |
| port | same port number as in the m= line for application |  |  |  |
| cand-type | "host" |  |  |  |

- MCData

**Table 5.5.3.1.2-3: SDP Message from the SS for MCData**

| Derivation Path: RFC 4566 [27] | | | | |
| --- | --- | --- | --- | --- |
| **Information Element** | **Value/remark** | **Comment** | **Reference** | **Condition** |
| **Session description:** |  |  |  |  |
| **Protocol Version** | "0" | v= line |  |  |
| **Origin** | Same o=line as in the previous SDP message sent by the SS except that sess-version is  incremented by one | o= line |  |  |
| **Origin** |  | o= line |  | FIRST\_SDP\_FROM\_SS |
| username | "-" | "-" indicating the concept of user IDs not being supported |  |  |
| sess-id | "11111111" | A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session. |  |  |
| sess-version | "11111111" |  |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address |  |  |  |
| unicast-address | IP address of the SS |  |  |  |
| **Session Name** | " " | s= line |  |  |
| **Time description** |  |  |  |  |
| **Timing** |  | t= line |  |  |
| start-time | "0" |  |  |  |
| stop-time | "0" |  |  |  |
| **Media description[1]** |  | **Media description for data** |  |  |
| **media description** |  | m= line  media = message | RFC 4867 [59]  TS 24.282 [31] |  |
| media | "message" |  |  |  |
| port | port number assigned by the SS | The transport port to which the media stream is sent |  |  |
| proto | "TCP/MSRP" |  |  |  |
| fmt | “\*” |  |  |  |
| **Connection Data** |  | c= line |  |  |
| nettype | "IN" |  |  |  |
| Addrtype | "IP4" or "IP6" depending on IP address |  |  |  |
| connection-address | IP address of the SS |  |  |  |
| **media attribute** |  | a= line  attribute = sendonly |  | SDP\_OFFER AND NOT SDS\_SESSION |
| sendonly |  | No parameters associated with this line |  |  |
| **media attribute** |  | a= line  attribute = recvonly |  | SDP\_ANSWER AND NOT SDS\_SESSION |
| recvonly |  | No parameters associated with this line |  |  |
| **media attribute** |  | a= line  attribute = sendrecv |  | SDS\_SESSION |
| sendrecv |  | No parameters associated with this line |  |  |
| **media attribute** |  | a= line  attribute = path |  |  |
| path | MSRP URI according to RFC 4975 [120] clause 6 and 9 |  | TS 24.282 [31] |  |
| scheme | "msrp" |  |  |  |
| authority |  |  | RFC 3986 [123] clause 3.2 |  |
| userinfo | not present |  |  |  |
| host | IP address of the SS |  |  |  |
| port | same value as in the media line |  |  |  |
| session id | assigned by the SS |  |  |  |
| transport | "tcp" |  |  |  |
| URI-parameter | not present |  |  |  |
| **media attribute** |  | a= line  attribute = accept-types | RFC 4975 [120] |  |
| accept-types |  |  |  |  |
| format-entry[1] | "application/vnd.3gpp.mcdata-signalling" |  |  |  |
| format-entry[2] | "application/vnd.3gpp.mcdata-payload" |  |  | MCDATA\_SDS |
| **media attribute** |  | a= line  attribute = setup | RFC 4145 [119] |  |
| setup | “actpass” |  |  | SDP\_OFFER |
|  | "passive" |  |  | SDP\_ANSWER |
| **media attribute** |  | a= line  attribute = file-transfer-id | RFC 5547 [124] | MCDATA\_FD |
| file-transfer-id | value assigned by the SS | randomly chosen globally unique identification (RFC 5547 [124]) |  | SDP\_OFFER |
|  | same value as in the sdp offer |  |  | SDP\_ANSWER |
| **media attribute** |  | a= line  attribute = file-selector | RFC 5547 [124] | MCDATA\_FD |
| file-selector |  |  |  | SDP\_OFFER |
| selector[1] |  |  |  |  |
| filename | name of the file to be transferred | e.g. "TestFile.txt" |  |  |
| filesize | size of the file to be transferred |  |  |  |
| filetype | type of the file to be transferred | e.g. "text/plain" |  |  |
| hash |  |  |  |  |
| algorithm | "sha-1" |  |  |  |
| value | hash value of the file to be transferred |  |  |  |
| file-selector | same value as in the sdp offer |  |  | SDP\_ANSWER |
| **media attribute** |  | a= line  attribute = file-date | RFC 5547 [124] | MCDATA\_FD AND SDP\_OFFER |
| file-date |  |  |  |  |
| date-param[1] |  |  |  |  |
| type | "creation" |  |  |  |
| date-time | date and time when the file has been created | e.g. "Mon, 20 Dec 2021 15:01:31 +0100" | RFC 5322 [109] |  |
| **media attribute** |  | a= line  attribute = key-mgmt |  | SDP\_OFFER AND MCD\_1to1 |
| key-mgmt |  |  | TS 24.379 [9] clause 6.2.1 |  |
| mikey | MIKEY-SAKKE I\_MESSAGE as specified in Table 5.5.9.1-2 | 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 |  |  |
| **media attribute** |  | a= line  attribute =ptime |  |  |
| ptime | any allowed value | packet time |  |  |
| **media attribute** |  | a= line  attribute =maxptime |  |  |
| maxptime | any allowed value | maximum packet time |  |  |
| **media description** |  | m= line  media = application |  |  |
| media | "application" |  |  |  |
| port | any allowed value | Set to a port number for media-floor control entity of the MCPTT group |  |  |
| proto | "udp" |  |  |  |
| fmt | "MCPTT" |  |  |  |
| **media attribute** |  | a= line  attribute = fmtp |  |  |
| fmtp |  |  |  |  |
| format | "MCPTT" |  |  |  |
| format specific parameters |  |  |  |  |
| mc\_queueing | optional | Parameter has no value |  |  |
| mc\_priority | not present  or  any allowed value | Any integer value in the range of 1..255 |  |  |
| mc\_granted | present | Parameter has no value |  |  |
| mc\_implicit\_request | present | Parameter has no value |  |  |
| **media attribute** |  | a= line  attribute = key-mgmt |  |  |
| key-mgmt |  |  |  |  |
| mikey | MIKEY-SAKKE I\_MESSAGE as specified in Table 5.5.9.1-2 |  |  |  |

- MCVideo

**Table 5.5.3.1.3-2: SDP Message from the UE - Off-network for MCVideo**

| Derivation Path: RFC 4566 [27] | | | | |
| --- | --- | --- | --- | --- |
| **Information Element** | **Value/remark** | **Comment** | **Reference** | **Condition** |
| **Session description:** |  |  |  |  |
| **Protocol Version** | "0" | v= line |  |  |
| **Origin** |  | o= line |  |  |
| username | "-" |  |  |  |
| sess-id | any allowed value | A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session. |  |  |
| sess-version | any allowed value |  |  |  |
| nettype | "IN" |  |  |  |
| addrtype | "IP4" | "IP4" or "IP6" |  |  |
| unicast-address | px\_MCVideo\_IP\_ConnectionAddressAll |  |  |  |
| **Session Name** | "-" | s= line |  |  |
| **Connection Data** |  | c= line |  |  |
| nettype | "IN" |  |  |  |
| addrtype | "IP4" | "IP4" or "IP6" |  |  |
| connection-address | px\_MCVideo\_IP\_ConnectionAddressAll | Set to the multicast IP address of the MCVideo group |  |  |
| **Bandwidth** |  | b= line |  |  |
| bwtype | "AS:" | bwtype:bandwidth |  |  |
| bandwidth | any allowed value |  |  |  |
| **Time description** |  |  |  |  |
| **Timing** |  | t= line |  |  |
| start-time | "0" |  |  |  |
| stop-time | "0" |  |  |  |
| **Media descriptions** |  |  |  |  |
| **media description** |  | m= line  media = audio |  |  |
| media | "audio" |  |  |  |
| port | any allowed value | Set to a port number for MCVideo speech of the MCVideo group |  |  |
| proto | "RTP/AVP" |  |  |  |
| fmt | any allowed value(s) | Indicating RTP payload type numbers |  |  |
| **media title** | "speech" | i= line |  |  |
| **media attribute** |  | a= line  attribute = rtpmap |  |  |
| rtpmap | "rtpmap" |  |  |  |
| payload type | "99" |  |  |  |
| encoding name | "AMR-WB" |  |  |  |
| clock rate | 16000 |  |  |  |
| encoding parameter | "1" if present | Channel number |  |  |
| **media attribute** |  | a= line  attribute = fmtp |  |  |
| fmtp | "fmtp" |  |  |  |
| format | the value given in fmt in the audio media description |  |  |  |
| format specific parameters |  | Parameters of WB-AMR codec |  |  |
| mode-change-capability | "2" | To be able to interoperate fully with gateways to circuit switched networks |  |  |
| max-red | "0" | No redundancy will be used |  |  |
| **media attribute** |  | a= line  attribute =ptime |  |  |
| ptime | any allowed value | packet time |  |  |
| **media attribute** |  | a= line  attribute =maxptime |  |  |
| maxptime | any allowed value | maximum packet time |  |  |
| **media description** |  | m= line  media = video  SDP media-level section for a media-transmission control entity |  |  |
| media | "video" |  |  |  |
| port | any allowed value | The port for the media-transmission control entity |  |  |
| proto | "udp" | User Datagram Protocol. With UDP, computer applications can send messages to other hosts on an Internet Protocol (IP) network. Time-sensitive applications often use UDP because dropping packets is preferable to waiting for packets delayed due to retransmission, which may not be an option in a real-time system. |  |  |
| fmt | "MCVideo" |  |  |  |
| **Connection Data** |  | c= line  Included if the media plane control channel uses a different IP address than other media described in the SDP |  |  |
| nettype | "IN" |  |  |  |
| addrtype | "IP4" |  |  |  |
| connection-address | px\_MCVideo\_IP\_ConnectionAddressApp |  |  |  |
| **media attribute** |  | a= line  attribute = rtpmap |  |  |
| rtpmap | "rtpmap" |  |  |  |
| payload type | "" |  |  |  |
| encoding name | "H.264" |  |  |  |
| clock rate |  |  | RFC 4867 [59] clause 8.3 |  |
| encoding parameter | "" if present | Channel number |  |  |
| **media attribute** |  | a= line  attribute = fmtp |  |  |
| fmtp |  |  | 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 |  |
| 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 |  |
| 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 |  |  |
| ptime | "20" | packet time |  |  |
| **media attribute** |  | a= line  attribute =maxptime |  |  |
| maxptime | "240" | maximum packet time |  |  |
| **media description** |  | m= line  media = application |  |  |
| media | "application" |  |  |  |
| port | "49153" | Set to a port number for media-floor control entity of the MCPTT group |  |  |
| proto | "udp" |  |  |  |
| fmt | "MCPTT" |  |  |  |
| **media attribute** |  | a= line  attribute = fmtp |  |  |
| fmtp |  |  |  |  |
| format | "MCPTT" |  |  |  |
| format specific parameters |  |  |  |  |
| mc\_queueing | Present | Parameter has no value |  |  |
| mc\_priority | "5" | Any integer value in the range of 1..255 |  |  |
| mc\_granted | Present | Parameter has no value |  |  |
| mc\_implicit\_request | Present | Parameter has no value |  |  |
| **media attribute** |  | a= line  attribute = key-mgmt |  |  |
| key-mgmt |  |  |  |  |
| mikey | MIKEY-SAKKE I\_MESSAGE as specified in Table 5.5.9.1-2 |  |  |  |

- MCVideo

**Table 5.5.3.1.4-2: SDP Message from the SS - Off-network for MCVideo**

| Derivation Path: RFC 4566 [27] | | | | |
| --- | --- | --- | --- | --- |
| **Information Element** | **Value/remark** | **Comment** | **Reference** | **Condition** |
| **Session description:** |  |  |  |  |
| **Protocol Version** | "0" | v= line |  |  |
| **Origin** |  | o= line |  |  |
| username | "-" |  |  |  |
| sess-id | "12345678" | A numeric string such that the tuple of <username>, <sess-id>, <nettype>, <addrtype>, and <unicast-address> forms a globally unique identifier for the session. |  |  |
| sess-version | "12345678" |  |  |  |
| nettype | "IN" |  |  |  |
| addrtype | "IP4" |  |  |  |
| unicast-address | px\_MCVideo\_IP\_ConnectionAddressAll |  |  |  |
| **Session Name** | "-" | s= line |  |  |
| **Connection Data** |  | c= line |  |  |
| nettype | "IN" |  |  |  |
| addrtype | "IP4" | "IP4" or "IP6" |  |  |
| connection-address | px\_MCVideo\_IP\_ConnectionAddressAll | Set to the multicast IP address of the MCVideo group |  |  |
| **Bandwidth** |  | b= line |  |  |
| bwtype | "AS:" | bwtype:bandwidth |  |  |
| bandwidth | any allowed value |  |  |  |
| **Time description** |  |  |  |  |
| **Timing** |  | t= line |  |  |
| start-time | "0" |  |  |  |
| stop-time | "0" |  |  |  |
| **Media descriptions** |  |  |  |  |
| **media description** |  | m= line  media = audio |  |  |
| media | "audio" |  |  |  |
| port | "49152" | Set to a port number for MCVideo speech of the MCVideo group |  |  |
| proto | "RTP/AVP" |  |  |  |
| fmt | "99" | Indicating RTP payload type numbers |  |  |
| **media title** | "speech" | i= line |  |  |
| **media attribute** |  | a= line  attribute = rtpmap |  |  |
| rtpmap | "rtpmap" |  |  |  |
| payload type | "99" |  |  |  |
| encoding name | "AMR-WB" |  |  |  |
| clock rate | 16000 |  |  |  |
| encoding parameter | "1" if present | Channel number |  |  |
| **media attribute** |  | a= line  attribute = fmtp |  |  |
| fmtp | "fmtp" |  |  |  |
| format | "99" |  |  |  |
| format specific parameters |  | Parameters of WB-AMR codec |  |  |
| mode-change-capability | "2" | To be able to interoperate fully with gateways to circuit switched networks |  |  |
| max-red | "0" | No redundancy will be used |  |  |
| **media attribute** |  | a= line  attribute =ptime |  |  |
| ptime | "20" | packet time |  |  |
| **media attribute** |  | a= line  attribute =maxptime |  |  |
| maxptime | "240" | maximum packet time |  |  |
| **media description** |  | m= line  media = video  SDP media-level section for a media-transmission control entity |  |  |
| media | "video" |  |  |  |
| port | any allowed value | The port for the media-transmission control entity |  |  |
| proto | "udp" | User Datagram Protocol. With UDP, computer applications can send messages to other hosts on an Internet Protocol (IP) network. Time-sensitive applications often use UDP because dropping packets is preferable to waiting for packets delayed due to retransmission, which may not be an option in a real-time system. |  |  |
| fmt | "MCVideo" |  |  |  |
| **Connection Data** |  | c= line  Included if the media plane control channel uses a different IP address than other media described in the SDP |  |  |
| nettype | "IN" |  |  |  |
| addrtype | "IP4" |  |  |  |
| connection-address | px\_MCVideo\_IP\_ConnectionAddressApp |  |  |  |
| **media attribute** |  | a= line  attribute = rtpmap |  |  |
| rtpmap | "rtpmap" |  |  |  |
| payload type | "" |  |  |  |
| encoding name | "H.264" |  |  |  |
| clock rate |  |  | RFC 4867 [59] clause 8.3 |  |
| encoding parameter | "" if present | Channel number |  |  |
| **media attribute** |  | a= line  attribute = fmtp |  |  |
| fmtp |  |  | 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 |  |
| 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 |  |
| 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 |  |  |  |
| 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) < imminentperil -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 |  |  |  |
|  | 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) <alert-ind> with mcvideoBoolean set to "false" |  |  |  |
|  | encrypted (NOTE 2) <alert-ind> with mcvideoBoolean set to pc\_MCX\_EmergencyIndWithAlertInd |  |  | EMERGENCY-CALL AND INVITE\_REFER |
| imminentperil-ind | not present or encrypted (NOTE 2) <imminentperil-ind> with mcvideoBoolean set to "false" |  |  |  |
|  | encrypted (NOTE 2) <imminentperil-ind> with mcvideoBoolean set to true |  |  | IMMPERIL-CALL AND INVITE-REFER |
| broadcast-ind | not present or “false” |  |  |  |
| mc-org | not present |  |  |  |
| associated-group-id | not present |  |  |  |
|  | px\_MCVideo\_Group\_A\_ID if mcvideo-request-uri contains a temporary group identity; otherwise, not present | if the <mcvideo-request-uri> element contains a group identity then this element can include an MCVideo group ID associated with the group identity in the <mcvideo-request-uri> element. E.g. if the <mcvideo-request-uri> element contains a temporary group identity (TGI), then the <associated-group-id> element can contain the constituent MCVideo group ID | TS 24.281 [86] clause F.1.3 | GROUP-CALL |
| originated-by | not present |  |  |  |
| MKFC-GKTPs | not present |  |  |  |
| mcvideo-client-id | not present |  |  |  |
|  | encrypted (NOTE 2) < mcvideo-client-id> with mcvideoString set to valid UUID URN (NOTE 1) | The UUID URN of the MCVIDEO Client | RFC 4122 [106]  TS 24.281 [86] clause 4.9 | (GROUP-CALL OR CHAT-GROUP-CALL OR  EMERGENCY-CALL OR  IMMPERIL-CALL)  AND INVITE\_REFER |
|  | not present or encrypted (NOTE 2) < mcvideo-client-id> with mcvideoString set to valid UUID URN (NOTE 1) |  |  | PRIVATE-CALL AND INVITE\_REFER |
|  | not present or encrypted (NOTE 2) < mcvideo-client-id> with mcvideoString set to valid UUID URN (NOTE 1) | in general mcvideo-client-id is not mandatory (e.g. for SIP SUBSCRIBE) | RFC 4122 [106]  TS 24.281 [86] clause 4.9 | CONFIG, GROUPCONFIG |
|  | encrypted (NOTE 2) < mcvideo-client-id> with mcvideoString set to valid UUID URN (NOTE 1) | mcvideo-client-id is mandatory in the SIP REGISTER or SIP PUBLISH for service authorisation according to TS 24.281 [86] clauses 7.2.1 and 7.2.2 | RFC 4122 [106]  TS 24.281 [86] clause 4.9 | CONFIG AND REGISTER\_PUBLISH |
|  | encrypted (NOTE 2) < mcvideo-client-id> with mcvideoString set to valid UUID URN (NOTE 1) | mcvideo-client-id is mandatory in SIP PUBLISH for MCVideo service settings only, according to TS 24.281 [86] clause 7.2.3 | RFC 4122 [106]  TS 24.281 [86] clause 4.9 | POC-SETTINGS-EVENT |
| alert-ind-rcvd | not present |  |  |  |
| anyExt | not present 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 | | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| REGISTER\_PUBLISH | MCVideo-Info in SIP REGISTER or SIP PUBLISH request for service authorisation |
| INVITE\_REFER | MCVideo-Info in SIP INVITE or SIP REFER request for call establishment |
| INVITE-RSP | MCVideo-Info in SIP response to a SIP INVITE |
| For further conditions see table 5.5.1-1 | |

Table 5.5.3.2.1-2A: Encrypted MCVideo info parameter sent by the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] clauses F.1.2, F.1.3 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| type attribute | "Encrypted" |  |  |  |
| EncryptedData | EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the mcvideo parameter |  |  |  |

##### - MCData

Table 5.5.3.2.1-3: MCData-Info from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87], Clause D.1 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| mcdata-info |  |  |  |  |
| mcdata-Params |  |  |  |  |
| mcdata-access-token | not present |  |  |  |
|  | Encrypted (NOTE 2) <mcdata-access-token> with mcdataString set to access token as assigned to the UE in the Token Response | The access token is opaque to the MCData client | TS 33.180 [94], clause B.4  RFC 6749 [77] | CONFIG  GROUPCONFIG |
| request-type | not present |  |  |  |
|  | "one-to-one-sds" |  |  | MCD\_1to1 |
|  | “group-sds” |  |  | MCD\_grp |
| mcdata-request-uri | not present |  |  |  |
|  | Encrypted (NOTE 1) <mcdata-request-uri> with mcdataURI set to px\_MCData\_Group\_A\_ID |  |  | MCD\_grp |
|  | Encrypted (NOTE 1) <mcdata-request-uri> with mcdataURI set to px\_MCData\_Group\_A\_ID |  |  | POC-SETTINGS-EVENT |
| mcdata-calling-user-id | not present |  |  |  |
| mcdata-called-party-id | not present |  |  |  |
| mcdata-calling-group-id | not present |  |  |  |
| alert-ind | not present |  |  |  |
| originated-by | not present |  |  |  |
| mcdata-client-id | not present |  |  |  |
|  | Encrypted (NOTE 1) <mcdata-client-id> with mcdataString set to valid UUID URN (NOTE 1) |  |  | MCD\_grp |
|  | Encrypted (NOTE 1) <mcdata-client-id> with mcdataString set to valid UUID URN (NOTE 1) |  |  | CONFIG AND PUBLISH |
|  | not present or encrypted (NOTE 1) <mcdata-client-id> with mcdataString set to valid UUID URN (NOTE 1) | in general mcdata-client-id is not mandatory (e.g. for SIP SUBSCRIBE) |  | (CONFIG OR GROUPCONFIG) AND NOT REGISTER (NOTE 3) |
|  | Encrypted (NOTE 1) <mcdata-client-id> with mcdataString set to valid UUID URN (NOTE 1) | mcdata-client-id is mandatory in SIP PUBLISH for MCData service settings only, according to TS 24.282 [87] clause 7.2.3 | RFC 4122 [106] | POC-SETTINGS-EVENT |
| mcdata-controller-psi | not present |  |  |  |
| 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 5.5.3.2.1-3A  NOTE 3: In contrast to MCPTT and MCVideo for MCData TS 24.282 [87] clause 7.2.1 does not specify the client-id to be included in the REGISTER request. | | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| MCD\_1to1 | A one-to-one MCData call |
| MCD\_grp | A goup MCData call |
| REGISTER | MCData-Info in SIP REGISTER request for service authorisation |
| PUBLISH | MCData-Info in SIP PUBLISH request for service authorisation |
| For further conditions see table 5.5.1-1 | |

Table 5.5.3.2.1-3A: Encrypted MCData info parameter sent by the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clauses D.1.2, D.1.3 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| type attribute | "Encrypted" |  |  |  |
| EncryptedData | EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the mcdata parameter |  |  |  |

##### 5.5.3.2.2 MCS Info Lists from the SS

##### - MCPTT

Table 5.5.3.2.2-1: MCPTT-Info from the SS

| Derivation Path: TS 24.379 [9] clause F.1.2 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| mcpttinfo |  |  |  |  |
| mcptt-Params |  |  |  |  |
| mcptt-access-token | not present |  |  |  |
| session-type | not present |  |  |  |
|  | "prearranged" |  |  | GROUP-CALL |
|  | "private" |  |  | PRIVATE-CALL |
|  | “chat” |  |  | CHAT-GROUP-CALL |
|  | "first-to-answer" |  |  | FIRST-TO-ANSWER |
| mcptt-request-uri | Encrypted (NOTE 1) <mcptt-request-uri> with mcpttURI set to px\_MCPTT\_ID\_User\_A | The URI of the called user |  |  |
| mcptt-calling-user-id | Encrypted (NOTE 1) <mcptt-calling-user-id> with mcpttURI set to px\_MCPTT\_ID\_User\_B | The URI of the calling user |  |  |
| mcptt-called-party-id | not present |  |  |  |
| mcptt-calling-group-id | not present |  |  |  |
|  | Encrypted (NOTE 1) <mcptt-calling-group-id> with mcpttURI set to px\_MCPTT\_Group\_A\_ID | The URI of the group |  | GROUP-CALL OR CHAT-GROUP-CALL |
| required | not present |  |  |  |
| emergency-ind | not present |  |  |  |
|  | Encrypted (NOTE 1) <emergency-ind> with mcpttBoolean set to "true" |  |  | EMERGENCY-CALL |
| alert-ind | not present |  |  |  |
|  | Encrypted (NOTE 1) <alert-ind> with mcpttBoolean set to "false" |  |  | EMERGENCY-CALL |
| imminentperil-ind | not present |  |  |  |
|  | Encrypted (NOTE 1) <imminentperil-ind> with mcpttBoolean set to "true" |  |  | IMMPERIL-CALL |
| broadcast-ind | not present |  |  |  |
| mc-org | not present |  |  |  |
| floor-state | not present |  |  |  |
| associated-group-id | not present |  |  |  |
| originated-by | not present |  |  |  |
| MKFC-GKTPs | not present |  |  |  |
| mcptt-client-id | not present |  |  |  |
| alert-ind-rcvd | not present |  |  |  |
| anyExt | not present |  | TS 24.379 [9], clause F.1.3 |  |
| NOTE 1: Encrypted element as described in Table 5.5.3.2.2-1A | | | | |

Table 5.5.3.2.2-1A: Encrypted MCPTT info parameter sent by the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.379 [9] clauses F.1.2, F.1.3 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| type attribute | "Encrypted" |  |  |  |
| EncryptedData | EncryptedData as described in Table 5.5.13.2-2 containing encrypted element content of the mcptt parameter |  |  |  |

##### - MCVideo

Table 5.5.3.2.2-2: MCVideo-Info from the SS

| Derivation Path: TS 24.281 [86] Clause F.1.2 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| mcvideoinfo |  |  |  |  |
| mcvideo-Params |  |  |  |  |
| mcvideo-access-token | not present |  |  |  |
| session-type | not present |  |  |  |
|  | "prearranged" |  |  | GROUP-CALL |
|  | "private" |  |  | PRIVATE-CALL |
|  | "chat" |  |  | CHAT-GROUP-CALL |
| mcvideo-request-uri | Encrypted (NOTE 1) <mcvideo-request-uri> with mcvideoURI set to px\_MCVideo\_ID\_User\_A | The URI of the called user |  |  |
| mcvideo-calling-user-id | Encrypted (NOTE 1) <mcvideo-calling-user-id> with mcvideoURI set to px\_MCVideo\_ID\_User\_B | The URI of the calling user |  |  |
| mcvideo-called-party-id | not present |  |  |  |
| mcvideo-calling-group-id | not present |  |  |  |
|  | Encrypted (NOTE 1) <mcvideo-calling-group-id> with mcvideoURI set to px\_MCVideo\_Group\_A\_ID | The URI of the group |  | GROUP-CALLOR CHAT-GROUP-CALL |
| required | not present |  |  |  |
| emergency-ind | Encrypted (NOTE 1) <emergency-ind> with mcvideoBoolean set to "false" |  |  |  |
|  | Encrypted (NOTE 1) <emergency-ind> with mcvideoBoolean set to "true" |  |  | EMERGENCY-CALL |
| alert-ind | not present |  |  |  |
|  | Encrypted (NOTE 1) <alert-ind> with mcvideoBoolean set to "false" |  |  | EMERGENCY-CALL |
| imminentperil-ind | not present |  |  |  |
|  | Encrypted (NOTE 1) <imminentperil-ind> with mcvideoBoolean set to "true" |  |  | IMMPERIL-CALL |
| broadcast-ind | not present |  |  |  |
| mc-org" | not present |  |  |  |
| associated-group-id | not present |  |  |  |
| originated-by | not present |  |  |  |
| MKFC-GKTPs | not present |  |  |  |
| mcvideo-client-id | not present |  |  |  |
| alert-ind-rcvd | not present |  |  |  |
| anyExt | not present |  | TS 24.281 [86] clause F.1.3 |  |
| NOTE 1: Encrypted element as described in Table 5.5.3.2.2-2A | | | | |

Table 5.5.3.2.2-2A: Encrypted MCVideo info parameter sent by the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] clauses F.1.2, F.1.3 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| type attribute | "Encrypted" |  |  |  |
| EncryptedData | EncryptedData as described in Table 5.5.13.2-2 containing encrypted element content of the mcvideo parameter |  |  |  |

##### - MCData

Table 5.5.3.2.2-3: MCData-Info from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87], Clause D.1 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| mcdata-info |  |  |  |  |
| mcdata-Params |  |  |  |  |
| mcdata-access-token | not present |  |  |  |
| request-type | not present |  |  |  |
|  | "one-to-one-sds" |  |  | MCD\_1to1 |
|  | “group-sds” |  |  | MCD\_grp |
| mcdata-request-uri | Encrypted (NOTE 1) <mcdata-request-uri> with mcdataURI set to px\_MCData\_ID\_User\_A |  |  |  |
| mcdata-calling-user-id | Encrypted (NOTE 1) <mcdata-calling-user-id> with mcdataURI set to px\_MCData\_ID\_User\_B |  |  |  |
| mcdata-called-party-id | not present |  |  |  |
| mcdata-calling-group-id | not present |  |  |  |
|  | Encrypted (NOTE 1) <mcdata-calling-group-id> with mcdataURI set to px\_MCData\_Group\_A\_ID |  |  | MCD\_grp |
| alert-ind | not present |  |  |  |
| originated-by | not present |  |  |  |
| mcdata-client-id | not present |  |  |  |
|  | Encrypted (NOTE 1) <mcdata-client-id> with mcdataString set to px\_MCX\_Client\_B\_ID |  |  | MCD\_grp |
| mcdata-controller-psi | not present |  |  |  |
| NOTE 1: Encrypted element as described in Table 5.5.3.2.2-3A | | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| MCD\_1to1 | A one-to-one MCData call |
| MCD\_grp | A group MCData call |
| For further conditions see table 5.5.1-1 | |

Table 5.5.3.2.2-3A: Encrypted MCData info parameter sent by the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clauses D.1.2, D.1.3 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| type attribute | "Encrypted" |  |  |  |
| EncryptedData | EncryptedData as described in Table 5.5.13.232 containing encrypted element content of the mcdata parameter |  |  |  |

#### 5.5.3.3 Resource-lists

##### 5.5.3.3.1 Resource-lists from the UE

##### - 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 | encrypted (NOTE 4) |  |  | PRIVATE-CALL  GROUP-CALL  EMERGENCY-CALL  IMMPERIL-CALL |
| list[1] | encrypted (NOTE 4) |  |  |  |
| name attribute | Not present |  |  |  |
| display-name | Not present |  |  |  |
| entry[1] | NOTE 4, 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 | Not present |  |  | CONFIG |
| 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 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 | encrypted (NOTE 4) |  |  |  |
| list | encrypted (NOTE 4) |  |  |  |
| name attribute | Not present |  |  |  |
| display-name | Not present |  |  |  |
| entry[1] | NOTE 4, 5 |  |  |  |
| uri attribute | px\_MCData\_ID\_User\_B | The MCData ID of the target MCData 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 | Not present |  |  | CONFIG |
| 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 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\_MCData\_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.mcdata.ue-config"  NOTE 1b: AUID2 = "org.3gpp.mcdata.user-profile"  NOTE 1c: AUID3 = "org.3gpp.mcdata.service-config"  NOTE 2: XUID = "sip:" & px\_MCData\_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\_MCData\_Group\_A\_ID & "/"  NOTE 7: Node-Sel = "/group/list-service/mgktp:GKTPs?xmlns(mgktp=urn:3gpp:ns:mcpttGKTP:1.0)” | | | | |

##### 5.5.3.3.2 Resource-lists from the SS

##### - MCPTT

Table 5.5.3.3.2-1: Resource-lists from the SS for MCPTT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 5366 [35] / RFC 4826 [83] | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| resource-lists | Editor's note: XML element content encryption to be added |  |  |  |
| name attribute | Not present |  |  |  |
| display-name | Not present |  |  |  |
| list |  |  |  |  |
| entry[1] |  |  |  |  |
| uri attribute | px\_MCPTT\_ID\_User\_A | The MCPTT ID of the invited user |  |  |
| display-name | Not present |  |  |  |

##### - MCVideo

Table 5.5.3.3.2-2: Resource-lists from the SS for MCVideo

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 5366 [35] / RFC 4826 [83] | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| resource-lists | Editor's note: XML element content encryption to be added |  |  |  |
| list |  |  |  |  |
| entry[1] |  |  |  |  |
| uri attribute | px\_MCVideo\_ID\_User\_A | The MCVideo ID of the invited user |  |  |
| display name | not present |  |  |  |

##### - MCData

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 5366 [35] / RFC 4826 [83] | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| resource-lists | Editor's note: XML element content encryption to be added |  |  |  |
| list |  |  |  |  |
| entry[1] |  |  |  |  |
| uri attribute | px\_MCData\_ID\_User\_A | The MCData ID of the invited user |  |  |
| display name | not present |  |  |  |

#### 5.5.3.4 Location-info

##### 5.5.3.4.1 Location-info (Report from the UE)

##### - MCPTT

Table 5.5.3.4.1-1: Location-info (Report from the UE) for MCPTT

| Derivation Path: TS 24.379 [9] clause F.3 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| location-info |  |  |  |  |
| Report |  |  |  |  |
| ReportID attribute | not present | Attribute is used to return the value in the <RequestId> attribute in the <Request> element. Only present in response to a Location-Info Request. |  |  |
| ReportType attribute | "Emergency" | Required  The <ReportType> attribute has two values "Emergency" and "NonEmergency" used to inform whether the client is sending the report in an emergency situation or not. |  |  |
| TriggerID | not present | An element which can occur multiple times. Contains the value of the <TriggerId> attribute associated with a trigger that has fired. Only present if a trigger is the cause of the Location-info Report. |  |  |
| CurrentLocation |  | A mandatory element that contains the location information |  |  |
| CurrentServingEcgi | Encrypted (NOTE 2) <CurrentServingEcgi> with any content if present | This is optional depending on the configuration sent by the SS |  |  |
| NeighbouringEcgi | Encrypted (NOTE 2) <NeighbouringEcgi> with any content if present | This is optional depending on the configuration sent by the SS |  |  |
| MbmsSaId | Encrypted (NOTE 2) <MbmsSaId> with any content if present | This is optional depending on the configuration sent by the SS |  |  |
| MbsfnArea | Encrypted (NOTE 2) <MbsfnArea> with any content if present | This is optional depending on the configuration sent by the SS |  |  |
| CurrentCoordinate | if present | This is optional depending on the configuration sent by the SS |  |  |
| longitude | Encrypted (NOTE 1) <longitude> with any content |  |  |  |
| latitude | Encrypted (NOTE 1) <latitude> with any content |  |  |  |
| NOTE 1: Encrypted sub-element of <CurrentCoordinate> as described in Table 5.5.3.4.1-1A  NOTE 2: Encrypted sub-element of <CurrentLocation> 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 |  |  |  |  |
| 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. |  |  |
| TriggerID | not present | An element which can occur multiple times. Contains the value of the <TriggerId> attribute associated with a trigger that has fired. Only present if a trigger is the cause of the Location-info Report. |  |  |
| CurrentLocation |  | A mandatory element that contains the location information |  |  |
| CurrentServingEcgi | Encrypted (NOTE 2) <CurrentServingEcgi> with any content if present | This is optional depending on the configuration sent by the SS |  |  |
| NeighbouringEcgi | Encrypted (NOTE 2) <NeighbouringEcgi> with any content if present | This is optional depending on the configuration sent by the SS |  |  |
| MbmsSaId | Encrypted (NOTE 2) <MbmsSaId> with any content if present | This is optional depending on the configuration sent by the SS |  |  |
| MbsfnArea | Encrypted (NOTE 2) <MbsfnArea> with any content if present | This is optional depending on the configuration sent by the SS |  |  |
| CurrentCoordinate | if present | This is optional depending on the configuration sent by the SS |  |  |
| longitude | Encrypted (NOTE 1) <longitude> with any content |  |  |  |
| latitude | Encrypted (NOTE 1) <latitude> with any content |  |  |  |
| NOTE 1: Encrypted sub-element of <CurrentCoordinate> as described in Table 5.5.3.4.1-2A  NOTE 2: Encrypted sub-element of <CurrentLocation> element as described in Table 5.5.3.4.1-2B | | | | |

Table 5.5.3.4.1-2A: Encrypted sub-element of <CurrentCoordinate> sent by the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] clause F.3.2 (tCoordinateType) | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| type attribute | "Encrypted" |  |  |  |
| EncryptedData | EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the sub-element of <CurrentCoordinate> |  |  |  |

Table 5.5.3.4.1-2B: Encrypted sub-element of <CurrentLocation> sent by the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] clause F.3.2 (tCurrentLocationType) | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| type attribute | "Encrypted" |  |  |  |
| EncryptedData | EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the sub-element of <CurrentLocation> |  |  |  |

##### - MCData

Table 5.5.3.4.1-3: Location-info (Report from the UE) for MCData

| Derivation Path: TS 24.282 [87] clause D.4 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| location-info |  |  |  |  |
| Report |  |  |  |  |
| ReportID | 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. |  |  |
| TriggerID | not present | An element which can occur multiple times. Contains the value of the <TriggerId> attribute associated with a trigger that has fired. Only present if a trigger is the cause of the Location-info Report. |  |  |
| CurrentLocation |  | A mandatory element that contains the location information |  |  |
| CurrentServingEcgi | Encrypted (NOTE 2) <CurrentServingEcgi> with any content if present | This is optional depending on the configuration sent by the SS |  |  |
| NeighbouringEcgi | Encrypted (NOTE 2) <NeighbouringEcgi> with any content if present | This is optional depending on the configuration sent by the SS |  |  |
| MbmsSaId | Encrypted (NOTE 2) <MbmsSaId> with any content if present | This is optional depending on the configuration sent by the SS |  |  |
| MbsfnArea | Encrypted (NOTE 2) <MbsfnArea> with any content if present | This is optional depending on the configuration sent by the SS |  |  |
| CurrentCoordinate | if present | This is optional depending on the configuration sent by the SS |  |  |
| longitude | Encrypted (NOTE 1) <longitude> with any content |  |  |  |
| latitude | Encrypted (NOTE 1) <latitude> with any content |  |  |  |
| NOTE 1: Encrypted sub-element of <CurrentCoordinate> as described in Table 5.5.3.4.1-2A  NOTE 2: Encrypted sub-element of <CurrentLocation> element as described in Table 5.5.3.4.1-2B | | | | |

Table 5.5.3.4.1-3A: Encrypted sub-element of <CurrentCoordinate> sent by the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause d.4.2 (tCoordinateType) | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| type attribute | "Encrypted" |  |  |  |
| EncryptedData | EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the sub-element of <CurrentCoordinate> |  |  |  |

Table 5.5.3.4.1-3B: Encrypted sub-element of <CurrentLocation> sent by the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause D.4.2 (tCurrentLocationType) | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| type attribute | "Encrypted" |  |  |  |
| EncryptedData | EncryptedData as described in Table 5.5.13.2-1 containing encrypted element content of the sub-element of <CurrentLocation> |  |  |  |

##### 5.5.3.4.2 Location-info (Configuration sent by the SS)

##### - MCPTT

Table 5.5.3.4.2-1: Location-info (Configuration sent by the SS) for MCPTT

| Derivation Path: TS 24.379 [9] clause F.3 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| location-info |  |  |  |  |
| Configuration |  |  |  |  |
| ConfigScope | "Full" | The MCPTT Client shall replace any previous configuration. |  |  |
| NonEmergencyLocationInformation |  |  |  |  |
| ServingEcgi | present | An optional element specifying that the serving E-UTRAN Cell Global Identity (ECGI) needs to be reported |  |  |
| NeighbouringEcgi | present | An optional element that can occur multiple times, specifying that neighbouring ECGIs need to be reported |  |  |
| MbmsSaId | present | An optional element specifying that the serving MBMS Service Area Id needs to be reported; |  |  |
| MbsfnArea | present | An optional element specifying that the MBSFN area Id needs to be reported; |  |  |
| GeographicalCoordinate | present | An optional element specifying that the geographical coordinate specified in clause 6.1 in 3GPP TS 23.032 [65] needs to be reported |  |  |
| minimumIntervalLength | "10" | A mandatory element specifying the minimum time the MCPTT client needs to wait between sending location reports. The value is given in seconds |  |  |
| EmergencyLocationInformation" |  |  |  |  |
| ServingEcgi | present | An optional element specifying that the serving E-UTRAN Cell Global Identity (ECGI) needs to be reported |  |  |
| NeighbouringEcgi | present | An optional element that can occur multiple times, specifying that neighbouring ECGIs need to be reported |  |  |
| MbmsSaId | present | An optional element specifying that the serving MBMS Service Area Id needs to be reported; |  |  |
| MbsfnArea | present | An optional element specifying that the MBSFN area Id needs to be reported; |  |  |
| 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; |  |  |
| GeographicalCoordinate | present | An optional element specifying that the geographical coordinate specified in clause 6.1 in 3GPP TS 23.032 [65] needs to be reported |  |  |
| minimumIntervalLength | "5" | A mandatory element specifying the minimum time the MCVideo client needs to wait between sending location reports. The value is given in seconds |  |  |
| TriggeringCriteria |  |  |  |  |
| CellChange | not present |  |  |  |
| TrackingAreaChange | not present |  |  |  |
| PlmnChange | not present |  |  |  |
| MbmsSaChange | not present |  |  |  |
| MbsfnAreaChange | not present |  |  |  |
| PeriodicReport | not present |  |  |  |
| TravelledDistance | not present |  |  |  |
| McvideoSignallingEvent | not present |  |  |  |
| GeographicalAreaChange |  |  |  |  |
| AnyAreaChange | not present |  |  |  |
| EnterSpecificAreaType | not present |  |  |  |
| ExitSpecificAreaType | not present |  |  |  |

##### - MCData

Table 5.5.3.4.2-2: Location-info (Configuration sent by the SS) for MCData

| Derivation Path: TS 24.281 [86] clause F.3 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| location-info |  |  |  |  |
| Configuration |  |  |  |  |
| ConfigScope | "Full" | The MCData Client shall replace any previous configuration. |  |  |
| NonEmergencyLocationInformation |  |  |  |  |
| ServingEcgi | present | An optional element specifying that the serving E-UTRAN Cell Global Identity (ECGI) needs to be reported |  |  |
| NeighbouringEcgi | present | An optional element that can occur multiple times, specifying that neighbouring ECGIs need to be reported |  |  |
| MbmsSaId | present | An optional element specifying that the serving MBMS Service Area Id needs to be reported; |  |  |
| MbsfnArea | present | An optional element specifying that the MBSFN area Id needs to be reported; |  |  |
| GeographicalCoordinate | present | An optional element specifying that the geographical coordinate specified in clause 6.1 in 3GPP TS 23.032 [65] needs to be reported |  |  |
| minimumIntervalLength | "10" | A mandatory element specifying the minimum time the MCData client needs to wait between sending location reports. The value is given in seconds |  |  |
| EmergencyLocationInformation" |  |  |  |  |
| ServingEcgi | present | An optional element specifying that the serving E-UTRAN Cell Global Identity (ECGI) needs to be reported |  |  |
| NeighbouringEcgi | present | An optional element that can occur multiple times, specifying that neighbouring ECGIs need to be reported |  |  |
| MbmsSaId | present | An optional element specifying that the serving MBMS Service Area Id needs to be reported; |  |  |
| MbsfnArea | present | An optional element specifying that the MBSFN area Id needs to be reported; |  |  |
| GeographicalCoordinate | present | An optional element specifying that the geographical coordinate specified in clause 6.1 in 3GPP TS 23.032 [65] needs to be reported |  |  |
| minimumIntervalLength | "5" | A mandatory element specifying the minimum time the MCData client needs to wait between sending location reports. The value is given in seconds |  |  |
| TriggeringCriteria |  |  |  |  |
| CellChange | not present |  |  |  |
| TrackingAreaChange | not present |  |  |  |
| PlmnChange | not present |  |  |  |
| MbmsSaChange | not present |  |  |  |
| MbsfnAreaChange | not present |  |  |  |
| PeriodicReport | not present |  |  |  |
| TravelledDistance | not present |  |  |  |
| McdataSignallingEvent | not present |  |  |  |
| GeographicalAreaChange |  |  |  |  |
| AnyAreaChange | not present |  |  |  |
| EnterSpecificAreaType | not present |  |  |  |
| ExitSpecificAreaType | not present |  |  |  |

##### 5.5.3.4.3 Location-info (Request sent by the SS)

##### - MCPTT

Table 5.5.3.4.3-1: Location-info (Request sent by the SS) for MCPTT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.379 [9] clause F.3 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| location-info |  |  |  |  |
| Request |  |  |  |  |
| RequestID | "1" | The RequestID that the MCPTT Client will reference in the Report |  |  |

##### - MCVideo

Table 5.5.3.4.3-2: Location-info (Request sent by the SS) for MCVideo

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.281 [96] clause F.3 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| location-info |  |  |  |  |
| Request |  |  |  |  |
| RequestID | "1" | The RequestID that the MCVideo Client will reference in the Report |  |  |

5.5.3.4.4 Location-info (Report from the SS)

- MCPTT

Table 5.5.3.4.4-1: Location-info (Report from the SS) for MCPTT

| Derivation Path: TS 24.379 [9] clause F.3 | | | | |
| --- | --- | --- | --- | --- |
| **Information Element** | **Value/remark** | **Comment** | **Reference** | **Condition** |
| location-info |  |  |  |  |
| Report |  |  |  |  |
| ReportID attribute | not present |  |  |  |
| ReportType attribute | "Emergency" |  |  |  |
| TriggerID | not present |  |  |  |
| CurrentLocation |  |  |  |  |
| CurrentServingEcgi | not present |  |  |  |
| NeighbouringEcgi | not present |  |  |  |
| MbmsSaId | not present |  |  |  |
| MbsfnArea | not present |  |  |  |
| CurrentCoordinate |  |  |  |  |
| longitude | Encrypted (NOTE 1) <longitude> with content as specified by the test case |  |  |  |
| latitude | Encrypted (NOTE 1) <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

Table 5.5.3.6-1: SIMPLE-FILTER

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 4661 [48] clause 7 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| filter-set |  |  |  |  |
| ns-bindings |  | TS 24.379 [9] clause 9.3.2.2 requires two separate ns-binding elements |  |  |
| ns-binding urn [1] |  |  |  |  |
| prefix | "pidf" |  |  |  |
| urn | "urn:ietf:params:xml:ns:pidf" |  |  |  |
| ns-binding urn [2] |  |  |  | MCPTT |
| prefix | "mcpttPI10" |  |  |  |
| urn | "urn:3gpp:ns:mcpttPresInfo:1.0" |  |  |  |
| ns-binding urn [2] |  |  |  | MCVIDEO |
| prefix | "mcvideoPI10" |  |  |  |
| urn | "urn:3gpp:ns:mcvideoPresInfo:1.0" |  |  |  |
| ns-binding urn [2] |  |  |  | MCDATA |
| prefix | "mcdataPI10" |  |  |  |
| urn | "urn:3gpp:ns:mcdataPresInfo:1.0" |  |  |  |
| filter[1] |  |  |  |  |
| id attribute | Any value | The value of the 'id' attribute has to be unique within the <filter-set> element |  |  |
| uri attribute | Not present | According to TS 24.379 [9] clause 9.3.2.2 |  |  |
| domain attribute | Not present | According to TS 24.379 [9] clause 9.3.2.2 |  |  |
| remove attribute | false if present | 'false' per default |  |  |
| enabled attribute | true if present | 'true' per default |  |  |
| what |  |  | RFC 4661 [48] | PER-CLIENT |
| include[1] |  |  |  |  |
| type | xpath if present | "xpath" per default |  |  |
| base | "//presence/tuple[@id=" & client id (NOTE 1) & "]" Editor's Note:  FFS whether and how this element should be encrypted | contains the value, according to IETF RFC 4661 [48], set to concatenation of the '//presence/tuple[@id="' string, the MCX client ID, and the '"]' string |  |  |
| what |  |  | RFC 4661 [48] | PER-GROUP |
| include[1] |  |  |  |  |
| type | xpath if present | "xpath" per default |  |  |
| base | "//pidf:presence/pidf:additionalData/@pidf:groupCallOngoing" |  | TS 24.379 [9] clause 9.3.2.2 |  |
| trigger | Not present |  |  |  |
| NOTE 1: UUID URN as provided by the client at initial registration | | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| PER-CLIENT | Per-client restrictions of presence event package notification information according to TS 24.379 [9] clause 9.3.2.2 |
| PER-GROUP | Per-group restrictions of presence event package notification information according to TS 24.379 [9] clause 9.3.2.2 |

Table 5.5.3.6-2: Void

Table 5.5.3.6-3: Void

#### 5.5.3.7 AFFILIATION-COMMAND

##### - MCPTT

Table 5.5.3.7-1: MCPTT-AFFILIATION-COMMAND for MCPTT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.379 [9] clause F.4 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| command-list |  |  |  |  |
| affiliate |  |  |  |  |
| group[1] | px\_MCPTT\_Group\_A\_ID | MCPTT group name |  |  |
| de-affiliate | not present |  |  |  |

##### - MCVideo

Table 5.5.3.7-2: MCVideo-AFFILIATION-COMMAND for MCVideo

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] clause F.4 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| command-list |  |  |  |  |
| affiliate |  |  |  |  |
| group[1] | px\_MCVideo\_Group\_A\_ID | MCVideo group name |  |  |
| de-affiliate | not present |  |  |  |

##### - MCData

Table 5.5.3.7-3: MCData-AFFILIATION-COMMAND for MCData

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause D.3 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| command-list |  |  |  |  |
| affiliate |  |  |  |  |
| group[1] | px\_MCData\_Group\_A\_ID | MCData group name |  |  |
| de-affiliate | not present |  |  |  |

#### 5.5.3.8 MCData Data signalling messages

The MCData Data signalling messages specified in this clause are protected according to TS 33.180 clause 8.5.4, i.e. a MCData Data signalling message is contained in the protected payload of a MCData Protected Payload Message according to clause 5.5.3.10 with condition PROTECTED\_MESSAGE and CSK.

The following conditions apply throughout clause 5.5.3.8:

Table 5.5.3.8-1: Conditions

|  |  |
| --- | --- |
| Condition | Explanation |
| DELIVERED | Disposition request/notification type DELIVERED |
| READ | Disposition request/notification type READ |
| DELIVERED\_READ | Disposition request/notification type DELIVERED AND READ |
| FD\_ACCEPTED | Disposition notification type FILE DOWNLOAD REQUEST ACCEPTED |
| FD\_REJECTED | Disposition notification type FILE DOWNLOAD REQUEST REJECTED |
| FD\_COMPLETED | Disposition notification type FILE DOWNLOAD COMPLETED |
| FD\_DEFERRED | Disposition notification type FILE DOWNLOAD DEFERRED |
| FD\_HTTP | FD Message for FD using using HTTP |
| FD\_MSRP | FD Message for FD using media plane |

##### 5.5.3.8.1 SDS SIGNALLING PAYLOAD message from the UE

Table 5.5.3.8.1-1: SDS SIGNALLING PAYLOAD message from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.1.2 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| SDS signalling payload message identity | '00000001'B | SDS SIGNALLING PAYLOAD | TS 24.282 [87] clause 15.2.2 |  |
| Date and time | Any allowed value | The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). | TS 24.282 [87] clause 15.2.8 |  |
| Conversation ID | Any allowed value | The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier. | TS 24.282 [87] clause 15.2.9 |  |
| Message ID | Any allowed value | The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier | TS 24.282 [87] clause 15.2.10 |  |
| InReplyTo message ID | Not present |  | TS 24.282 [87] clause 15.2.11 |  |
| Application ID | Not present |  | TS 24.282 [87] clause 15.2.7 |  |
| SDS disposition request type | '0001'B |  | TS 24.282 [87] clause 15.2.3 | DELIVERED |
|  | '0010'B |  |  | READ |
|  | '0011'B |  |  | DELIVERED\_READ |
| Extended application ID | Not present |  | TS 24.282 [87] clause 15.2.24 |  |
| User location | Any allowed value if present |  | TS 24.282 [87] clause 15.2.25 |  |
| Sender MCData user ID | Not present |  | TS 24.282 [87] clause 15.2.15 |  |

##### 5.5.3.8.2 SDS SIGNALLING PAYLOAD message from the SS

Table 5.5.3.8.2-1: SDS SIGNALLING PAYLOAD message from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.1.2 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| SDS signalling payload message identity | '00000001'B | SDS SIGNALLING PAYLOAD | TS 24.282 [87] clause 15.2.2 |  |
| Date and time | The current date and time | The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). | TS 24.282 [87] clause 15.2.8 |  |
| Conversation ID | '01010101010101010101010101010101'O | The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier. | TS 24.282 [87] clause 15.2.9 |  |
| Message ID | '01010101010101010101010101010101'O | The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier | TS 24.282 [87] clause 15.2.10 |  |
| InReplyTo message ID | Not present |  | TS 24.282 [87] clause 15.2.11 |  |
| Application ID | Not present |  | TS 24.282 [87] clause 15.2.7 |  |
| SDS disposition request type | '0001'B |  | TS 24.282 [87] clause 15.2.3 | DELIVERED |
|  | '0010'B |  |  | READ |
|  | '0011'B |  |  | DELIVERED\_READ |
| Extended application ID | Not present |  | TS 24.282 [87] clause 15.2.24 |  |
| User location | Not present |  | TS 24.282 [87] clause 15.2.25 |  |
| Sender MCData user ID | Not present |  | TS 24.282 [87] clause 15.2.15 |  |

5.5.3.8.3 SDS NOTIFICATION message from the UE

Table 5.5.3.8.3-1: SDS NOTIFICATION message from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.1.5 | | | | |
| **Information Element** | **Value/remark** | **Comment** | **Reference** | **Condition** |
| SDS notification message identity | '00000101'B | SDS NOTIFICATION | TS 24.282 [87] clause 15.2.2 |  |
| SDS disposition notification type | '00000010'B |  | TS 24.282 [87] clause 15.2.5 | DELIVERED |
|  | '00000011'B |  |  | READ |
|  | '00000100'B |  |  | DELIVERED\_READ |
| Date and time | Any allowed value | The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). | TS 24.282 [87] clause 15.2.8 |  |
| Conversation ID | Same value as in the corresponding SDS SIGNALLING PAYLOAD sent to the UE | The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier. | TS 24.282 [87] clause 15.2.9 |  |
| Message ID | Same value as in the corresponding SDS SIGNALLING PAYLOAD sent to the UE | The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier | TS 24.282 [87] clause 15.2.10 |  |
| Application ID | Not present |  | TS 24.282 [87] clause 15.2.7 |  |
| Extended application ID | Not present |  | TS 24.282 [87] clause 15.2.24 |  |
| Sender MCData user ID | Not present |  | TS 24.282 [87] clause 15.2.15 |  |

5.5.3.8.4 SDS NOTIFICATION message from the SS

Table 5.5.3.8.4-1: SDS NOTIFICATION message from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.1.5 | | | | |
| **Information Element** | **Value/remark** | **Comment** | **Reference** | **Condition** |
| SDS notification message identity | '00000101'B | SDS NOTIFICATION | TS 24.282 [87] clause 15.2.2 |  |
| SDS disposition notification type | '00000010'B |  | TS 24.282 [87] clause 15.2.5 | DELIVERED |
|  | '00000011'B |  |  | READ |
|  | '00000100'B |  |  | DELIVERED\_READ |
| Date and time | The current date and time | The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). | TS 24.282 [87] clause 15.2.8 |  |
| Conversation ID | Same value as in the corresponding SDS SIGNALLING PAYLOAD received from the UE | The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier. | TS 24.282 [87] clause 15.2.9 |  |
| Message ID | Same value as in the corresponding SDS SIGNALLING PAYLOAD received from the UE | The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier | TS 24.282 [87] clause 15.2.10 |  |
| Application ID | Not present |  | TS 24.282 [87] clause 15.2.7 |  |
| Extended application ID | Not present |  | TS 24.282 [87] clause 15.2.24 |  |
| Sender MCData user ID | Not present |  | TS 24.282 [87] clause 15.2.15 |  |

##### 5.5.3.8.5 FD SIGNALLING PAYLOAD message from the UE

Table 5.5.3.8.5-1: FD SIGNALLING PAYLOAD message from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.1.2 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| FD signalling payload message identity | '00000010'B | FD SIGNALLING PAYLOAD | TS 24.282 [87] clause 15.2.2 |  |
| Date and time | Any allowed value | The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). | TS 24.282 [87] clause 15.2.8 |  |
| Conversation ID | Any allowed value | The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier. | TS 24.282 [87] clause 15.2.9 |  |
| Message ID | Any allowed value | The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier | TS 24.282 [87] clause 15.2.10 |  |
| InReplyTo message ID | Not present |  | TS 24.282 [87] clause 15.2.11 |  |
| Application ID | Not present |  | TS 24.282 [87] clause 15.2.7 |  |
| FD disposition request type | “0001” | FILE DOWNLOAD COMPLETED UPDATE | TS 24.282 [87] clause 15.2.4 |  |
| Mandatory download | Not present | Not present indicates a Non-Mandatory download | TS 24.282 [87] clause 15.2.16 |  |
|  | '0001'B | MANDATORY DOWNLOAD |  | FD\_MSRP |
| Payload |  |  | TS 24.282 [87] clause 15.2.13 | FD\_HTTP |
| Length of Payload contents | Length of the payload contents |  |  |  |
| Payload content type | “00000100” | FILEURL |  |  |
| Payload contents | same URL as assigned by the SS in the HTTP 201 (Created) response to the HTTP POST request |  |  |  |
| Metadata | if present | Metadata is optional | TS 24.282 [87] clause 15.2.17 | FD\_HTTP |
| file-selector | Any allowed value |  |  |  |
| file-date | Any allowed value |  |  |  |
| file-availability | Any allowed value |  |  |  |
| Extended application ID | Not present |  | TS 24.282 [87] clause 15.2.24 |  |

##### 5.5.3.8.6 FD SIGNALLING PAYLOAD message from the SS

Table 5.5.3.8.6-1: FD SIGNALLING PAYLOAD message from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.1.2 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| FD signalling payload message identity | '00000010'B | FD SIGNALLING PAYLOAD | TS 24.282 [87] clause 15.2.2 |  |
| Date and time | The current date and time | The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). | TS 24.282 [87] clause 15.2.8 |  |
| Conversation ID | '01010101010101010101010101010101'O | The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier. | TS 24.282 [87] clause 15.2.9 |  |
| Message ID | '01010101010101010101010101010101'O | The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier | TS 24.282 [87] clause 15.2.10 |  |
| InReplyTo message ID | Not present |  | TS 24.282 [87] clause 15.2.11 |  |
| Application ID | Not present |  | TS 24.282 [87] clause 15.2.7 |  |
| FD disposition request type | '0001'B | FILE DOWNLOAD COMPLETED UPDATE | TS 24.282 [87] clause 15.2.4 |  |
| Mandatory download | Not present | Not present indicates a Non-Mandatory download | TS 24.282 [87] clause 15.2.16 |  |
|  | '0001'B | MANDATORY DOWNLOAD |  | FD\_MSRP |
| Length of Payload contents | Length of the payload contents |  |  |  |
| Payload content type | “00000100” | FILEURL |  |  |
| Payload contents | tsc\_MCData\_MSF\_URI & "/" & sub-path | URL identifying the location of the stored file;  sub-path is arbitrarily selected by the SS and shall be different for every file upload of a test case |  |  |
| Metadata |  | NOTE 1 | TS 24.282 [87] clause 15.2.17 | FD\_HTTP |
| file-selector |  |  | RFC 5547 [124] |  |
| filename | name of the file | e.g. "TestFile.txt" |  |  |
| filesize | size of the file |  |  |  |
| type | type of the file | e.g. "text/plain" |  |  |
| hash |  |  |  |  |
| algorithm | "sha-1" |  |  |  |
| value | hash value of the file |  |  |  |
| file-date |  |  | RFC 5547 [124] |  |
| date-param[1] |  |  |  |  |
| type | "creation" |  |  |  |
| date-time | date and time when the file has been created | e.g. "Mon, 20 Dec 2021 15:01:31 +0100" | RFC 5322 [109] |  |
| file-availability | Date and time until which the file is available | e.g. "Fri, 30 Dec 2050 23:59:59 +0100" | TS 24.282 [87] table 15.2.17-1 |  |
| file-description | "Test file" |  | TS 24.282 [87] table 15.2.17-1 |  |
| Extended application ID | Not present |  | TS 24.282 [87] clause 15.2.24 |  |
| Sender MCData user ID | Not present |  | TS 24.282 [87] clause 15.2.15 |  |
| NOTE 1: file-selector, file-date, file-availability and file-description are concatenated using CRLF (carriage-return/line-feed) as separator | | | | |

5.5.3.8.7 FD NOTIFICATION message from the UE

Table 5.5.3.8.7-1: FD NOTIFICATION message from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.1.6 | | | | |
| **Information Element** | **Value/remark** | **Comment** | **Reference** | **Condition** |
| FD notification message identity | '00000110'B | FD NOTIFICATION | TS 24.282 [87] clause 15.2.2 |  |
| FD disposition notification type | '00000001'B |  | TS 24.282 [87] clause 15.2.6 | FD\_ACCEPTED |
|  | '00000010'B |  |  | FD\_REJECTED |
|  | '00000011'B |  |  | FD\_COMPLETED |
|  | '00000100'B |  |  | FD\_DEFERRED |
| Date and time | Any allowed value | The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). | TS 24.282 [87] clause 15.2.8 |  |
| Conversation ID | Same value as in the corresponding FD SIGNALLING PAYLOAD sent to the UE | The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier. | TS 24.282 [87] clause 15.2.9 |  |
| Message ID | Same value as in the corresponding FD SIGNALLING PAYLOAD sent to the UE | The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier | TS 24.282 [87] clause 15.2.10 |  |
| Application ID | Not present |  | TS 24.282 [87] clause 15.2.7 |  |
| Extended application ID | Not present |  | TS 24.282 [87] clause 15.2.24 |  |
| Sender MCData user ID | Not present |  | TS 24.282 [87] clause 15.2.15 |  |

5.5.3.8.8 FD NOTIFICATION message from the SS

Table 5.5.3.8.8-1: FD NOTIFICATION message from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.1.6 | | | | |
| **Information Element** | **Value/remark** | **Comment** | **Reference** | **Condition** |
| FD notification message identity | '00000110'B | FD NOTIFICATION | TS 24.282 [87] clause 15.2.2 |  |
| FD disposition notification type | '00000001'B |  | TS 24.282 [87] clause 15.2.6 | FD\_ACCEPTED |
|  | '00000010'B |  |  | FD\_REJECTED |
|  | '00000011'B |  |  | FD\_COMPLETED |
|  | '00000100'B |  |  | FD\_DEFERRED |
| Date and time | The current date and time | The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). | TS 24.282 [87] clause 15.2.8 |  |
| Conversation ID | Same value as in the corresponding FD SIGNALLING PAYLOAD received from the UE | The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier. | TS 24.282 [87] clause 15.2.9 |  |
| Message ID | Same value as in the corresponding FD SIGNALLING PAYLOAD received from the UE | The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier | TS 24.282 [87] clause 15.2.10 |  |
| Application ID | Not present |  | TS 24.282 [87] clause 15.2.7 |  |
| Extended application ID | Not present |  | TS 24.282 [87] clause 15.2.24 |  |
| Sender MCData user ID | Not present |  | TS 24.282 [87] clause 15.2.15 |  |

##### 5.5.3.8.9 SDS OFF-NETWORK MESSAGE message from the UE

Table 5.5.3.8.9-1: SDS OFF-NETWORK MESSAGE message from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] table 15.1.7.1-1 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| Date and time | Any allowed value | The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). | TS 24.282 [87] clause 15.2.8 |  |
| Number of payloads | 1 | 1 payload | TS 24.282 [87] clause 15.2.12 |  |
| Conversation ID | Any allowed value | The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier. | TS 24.282 [87] clause 15.2.9 |  |
| Message ID | Any allowed value | The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier | TS 24.282 [87] clause 15.2.10 |  |
| Sender MCData user ID | px\_MCData\_ID\_User\_A |  |  |  |
| InReplyTo message ID | Not present |  | TS 24.282 [87] clause 15.2.11 |  |
| Application ID | Not present |  | TS 24.282 [87] clause 15.2.7 |  |
| SDS disposition request type | '0001'B |  | TS 24.282 [87] clause 15.2.3 | DELIVERED |
|  | '0010'B |  |  | READ |
|  | '0011'B |  |  | DELIVERED\_READ |
| Security parameters | MCData Protected Payload Message as described in Table 5.5.3.10-1 with condition PROTECTED\_PAYLOAD containing the Payload as described in Table 5.5.3.8.9-2 | MCData Protected Payload Message | TS 33.180 [94] | MCD\_1to1 |
| MCData group ID | px\_MCData\_Group\_A\_ID |  | TS 24.282 [87] clause 15.2.14 | MCD\_grp |
| Recipient MCData user ID | px\_MCData\_ID\_User\_B |  |  | MCD\_1to1 |
| Payload | Payload as described in Table 5.5.3.8.9-3 |  | TS 24.282 [87] clause 15.2.13 | MCD\_grp |
| Extended application ID | Not present |  | TS 24.282 [87] clause 15.2.24 |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| MCD\_1to1 | A one-to-one MCData call |
| MCD\_grp | A group MCData call |
| For further conditions see table 5.5.3.8-1 | |

Table 5.5.3.8.9-2: Payload contained in the Security parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.2.13 | | | | |
| Field | Value/remark | Comment | Reference | Condition |
| Payload IEI | '78'O |  | TS 24.282 [87] clause 15.1.4 |  |
| Length of Payload | length of the content |  |  |  |
| Payload content type | '00000001'B | TEXT |  |  |
| Payload data | any allowed value | The data payload  Example: “abcdEFGH” |  |  |

Table 5.5.3.8.9-3: DATA PAYLOAD message for group communication from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.1.4 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| Data payload message identity | '00000011'B | Data payload | TS 24.282 [87] clause 15.2.2 |  |
| Number of payloads | 1 | 1 payload | TS 24.282 [87] clause 15.2.12 |  |
| Payload |  |  | TS 24.282 [87] clause 15.2.13 |  |
| Payload IEI | '78'O |  |  |  |
| Length of Payload | length of the content |  |  |  |
| Payload content type | '00000001'B | TEXT |  |  |
| Payload data | any allowed value | The data payload  Example: “abcdEFGH” |  |  |

##### 5.5.3.8.10 SDS OFF-NETWORK MESSAGE message from the SS

Table 5.5.3.8.10-1: SDS OFF-NETWORK MESSAGE message from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] table 15.1.7.1-1 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| Date and time | The current date and time | The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). | TS 24.282 [87] clause 15.2.8 |  |
| Number of payloads | 1 | 1 payload | TS 24.282 [87] clause 15.2.12 |  |
| Conversation ID | '01010101010101010101010101010101'O | The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier. | TS 24.282 [87] clause 15.2.9 |  |
| Message ID | '01010101010101010101010101010101'O | The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier | TS 24.282 [87] clause 15.2.10 |  |
| Sender MCData user ID | px\_MCData\_ID\_User\_B |  |  |  |
| InReplyTo message ID | Not present |  | TS 24.282 [87] clause 15.2.11 |  |
| Application ID | Not present |  | TS 24.282 [87] clause 15.2.7 |  |
| SDS disposition request type | '0001'B |  | TS 24.282 [87] clause 15.2.3 | DELIVERED |
|  | '0010'B |  |  | READ |
|  | '0011'B |  |  | DELIVERED\_READ |
| Security parameters | MCData Protected Payload Message as described in Table 5.5.3.10-2 with condition PROTECTED\_PAYLOAD containing the Payload as described in Table 5.5.3.8.10-2 | MCData Protected Payload Message | TS 33.180 [94] | MCD\_1to1 |
| MCData group ID | px\_MCData\_Group\_A\_ID |  | TS 24.282 [87] clause 15.2.14 | MCD\_grp |
| Recipient MCData user ID | px\_MCData\_ID\_User\_A |  |  | MCD\_1to1 |
| Payload | Payload as described in Table 5.5.3.8.10-3 |  | TS 24.282 [87] clause 15.2.13 | MCD\_grp |
| Extended application ID | Not present |  | TS 24.282 [87] clause 15.2.24 |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| MCD\_1to1 | A one-to-one MCData call |
| MCD\_grp | A group MCData call |
| For further conditions see table 5.5.3.8-1 | |

Table 5.5.3.8.10-2: Payload contained in the Security parameters and Payload

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.2.13 | | | | |
| Field | Value/remark | Comment | Reference | Condition |
| Payload IEI | '78'O |  | TS 24.282 [87] clause 15.1.4 |  |
| Length of Payload | length of the content |  |  |  |
| Payload content type | '00000001'B | TEXT |  |  |
| Payload data | "Test" | The data payload |  |  |

Table 5.5.3.8.10-3: DATA PAYLOAD message for group communication from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.1.4 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| Data payload message identity | '00000011'B | Data payload | TS 24.282 [87] clause 15.2.2 |  |
| Number of payloads | 1 | 1 payload | TS 24.282 [87] clause 15.2.12 |  |
| Payload |  |  | TS 24.282 [87] clause 15.2.13 |  |
| Payload IEI | '78'O |  |  |  |
| Length of Payload | length of the content |  |  |  |
| Payload content type | '00000001'B | TEXT |  |  |
| Payload data | "Test" | The data payload |  |  |

##### 5.5.3.8.11 SDS OFF-NETWORK NOTIFICATION message from the UE

Table 5.5.3.8.11-1: SDS OFF-NETWORK message from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] table 15.1.8.4-1 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| SDS disposition notification type | '00000010'B |  | TS 24.282 [87] clause 15.2.5 | DELIVERED |
|  | '00000011'B |  |  | READ |
|  | '00000100'B |  |  | DELIVERED\_READ |
| Date and time | Any allowed value | The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). | TS 24.282 [87] clause 15.2.8 |  |
| Conversation ID | Same value as in the corresponding SDS OFF-NETWORK MESSAGE sent to the UE | The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier. | TS 24.282 [87] clause 15.2.9 |  |
| Message ID | Same value as in the corresponding SDS OFF-NETWORK MESSAGE sent to the UE | The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier | TS 24.282 [87] clause 15.2.10 |  |
| Sender MCData user ID | px\_MCData\_ID\_User\_A |  |  |  |
| Application ID | Not present |  |  |  |
| Extended application ID | Not present |  |  |  |

##### 5.5.3.8.12 SDS OFF-NETWORK NOTIFICATION message from the SS

Table 5.5.3.8.12-1: SDS OFF-NETWORK message from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] table 15.1.8.4-1 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| SDS disposition notification type | '00000010'B |  | TS 24.282 [87] clause 15.2.5 | DELIVERED |
|  | '00000011'B |  |  | READ |
|  | '00000100'B |  |  | DELIVERED\_READ |
| Date and time | The current date and time | The Date and time value is an unsigned integer containing UTC time of the time when a message was sent, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). | TS 24.282 [87] clause 15.2.8 |  |
| Conversation ID | Same value as in the corresponding SDS OFF-NETWORK MESSAGE received from the UE | The Conversation ID contains a number uniquely identifying the conversation. The value is a universally unique identifier. | TS 24.282 [87] clause 15.2.9 |  |
| Message ID | Same value as in the corresponding SDS OFF-NETWORK MESSAGE received from the UE | The Message ID contains a number uniquely identifying a message. The value is a universally unique identifier | TS 24.282 [87] clause 15.2.10 |  |
| Sender MCData user ID | px\_MCData\_ID\_User\_B |  |  |  |
| Application ID | Not present |  |  |  |
| Extended application ID | Not present |  |  |  |

#### 5.5.3.9 MCData Data Payload

##### 5.5.3.9.1 MCData Data Payload for group communication

The MCData Data Payload messages for group communication specified in this clause are protected according to TS 33.180 clause 8.5.4, i.e. a MCData Data Payload message is contained in the protected payload of a MCData Protected Payload Message according to clause 5.5.3.10 with condition PROTECTED\_MESSAGE and GMK.

Table 5.5.3.9.1-1: DATA PAYLOAD message for group communication from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.1.4 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| Data payload message identity | '00000011'B | Data payload | TS 24.282 [87] clause 15.2.2 |  |
| Number of payloads | 1 | 1 payload | TS 24.282 [87] clause 15.2.12 |  |
| Payload |  |  | TS 24.282 [87] clause 15.2.13 |  |
| Payload IEI | '78'O |  |  |  |
| Length of Payload | length of the content |  |  |  |
| Payload content type | '00000001'B | TEXT |  |  |
| Payload data | any allowed value | The data payload  Example: “abcdEFGH” |  |  |

Table 5.5.3.9.1-2: DATA PAYLOAD message for group communication from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.1.4 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| Data payload message identity | '00000011'B | Data payload | TS 24.282 [87] clause 15.2.2 |  |
| Number of payloads | 1 | 1 payload | TS 24.282 [87] clause 15.2.12 |  |
| Payload |  |  | TS 24.282 [87] clause 15.2.13 | MCD\_grp |
| Payload IEI | '78'O |  |  |  |
| Length of Payload | length of the content |  |  |  |
| Payload content type | '00000001'B | TEXT |  |  |
| Payload data | "Test" | The data payload |  |  |

##### 5.5.3.9.2 MCData Data Payload for one-to-one communication

Table 5.5.3.9.2-1: DATA PAYLOAD message for one-to-one communication from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.1.4 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| Data payload message identity | '00000011'B | Data payload | TS 24.282 [87] clause 15.2.2 |  |
| Number of payloads | 1 | 1 payload | TS 24.282 [87] clause 15.2.12 |  |
| Security parameters and Payload | MCData Protected Payload Message as described in Table 5.5.3.10-1 with condition PROTECTED\_PAYLOAD containing the Payload as described in Table 5.5.3.9.2-1A | MCData Protected Payload Message | TS 33.180 [94] |  |

Table 5.5.3.9.2-1A: Payload contained in the Security parameters and Payload

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.2.13 | | | | |
| Field | Value/remark | Comment | Reference | Condition |
| Payload IEI | '78'O |  | TS 24.282 [87] clause 15.1.4 |  |
| Length of Payload | length of the content |  |  |  |
| Payload content type | '00000001'B | TEXT |  |  |
| Payload data | any allowed value | The data payload  Example: “abcdEFGH” |  |  |

Table 5.5.3.9.2-2: DATA PAYLOAD message for one-to-one communication from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.1.4 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| Data payload message identity | '00000011'B | Data payload | TS 24.282 [87] clause 15.2.2 |  |
| Number of payloads | 1 | 1 payload | TS 24.282 [87] clause 15.2.12 |  |
| Security parameters and Payload | MCData Protected Payload Message as described in Table 5.5.3.10-2 with condition PROTECTED\_PAYLOAD containing the Payload as described in Table 5.5.3.9.2-2A | MCData Protected Payload Message | TS 33.180 [94] |  |

Table 5.5.3.9.2-2A: Payload contained in the Security parameters and Payload

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.282 [87] clause 15.2.13 | | | | |
| Field | Value/remark | Comment | Reference | Condition |
| Payload IEI | '78'O |  | TS 24.282 [87] clause 15.1.4 |  |
| Length of Payload | length of the content |  |  |  |
| Payload content type | '00000001'B | TEXT |  |  |
| Payload data | "Test" | The data payload |  |  |

#### 5.5.3.10 MCData Protected Payload Message

Table 5.5.3.10-1: MCData Protected Payload Message from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 33.180 [94] clause 8.5.4 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| Message Type | Same message type as in the MCData message contained as Payload but with bit 7 set to '1'B |  |  | PROTECTED\_MESSAGE |
|  | '01??????'B | NOTE: TS 33.180 [94] does not specify any message type |  | PROTECTED\_FILE |
|  | '01111010B | '7A'O; IEI | TS 24.282 [87] clause 15.1.4 | PROTECTED\_PAYLOAD |
| Date and Time | Any allowed value | Date and Time of creation of protected payload message |  |  |
| Payload ID | Any allowed value | The identifier for the payload. |  |  |
| Payload sequence number | Any allowed value | The sequence number of the protected payload. |  |  |
| Payload Algorithm | '01'O | DP\_AES\_128\_GCM |  |  |
| Signalling algorithm | not present |  |  |  |
| IV | Any allowed value | Initialisation vector (or nonce) for message.  Length depends on the algorithm and key used.  128 bits or 256 bits depending on the algorithm. |  |  |
| DPPK-ID | PCK-ID |  |  | PROTECTED\_PAYLOAD, PCK |
|  | GMK-ID |  |  | GMK |
|  | CSK-ID |  |  | CSK |
| Payload |  | Protected Payload (Ciphertext) | TS 24.282 [87] clause 15.2.13 |  |
| Payload IEI | '78'O | Value as used in MCData messages in TS 24.282 [87] |  |  |
| Length of Payload contents | length of the content |  |  |  |
| Payload content type | '02'O | BINARY |  |  |
| Payload contents | Encrypted MCData message (NOTE 1) |  |  | PROTECTED\_MESSAGE |
|  | Encrypted file or portion of file |  |  | PROTECTED\_FILE |
|  | Encrypted Payload(s) of the unprotected DATA PAYLOAD message (NOTE 2) |  |  | PROTECTED\_PAYLOAD |
| NOTE 1: The whole message is encrypted (including its message type)  NOTE 2: The whole payload(s) are encrypted (including their IEI and length); in general there is only one payload | | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| PROTECTED\_MESSAGE | The MCData Protected Payload message contains a whole encrypted MCData message |
| PROTECTED\_FILE | The MCData Protected Payload message contains encrypted binary data representing a file or portion of a file |
| PROTECTED\_PAYLOAD | The MCData Protected Payload message contains the Payload IE(S) of the MCData DATA PAYLOAD message |
| PCK | Encryption uses PCK |
| GMK | Encryption uses GMK |
| CSK | Encryption uses CSK |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 33.180 [94] clause 8.5.4 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| Message Type | Same message type as in the MCData message contained as Payload but with bit 7 set to '1'B |  |  | PROTECTED\_MESSAGE |
|  | '01000011'B | '43'O; same as for protected DATA PAYLOAD |  | PROTECTED\_FILE |
|  | '01111010B | '7A'O; IEI | TS 24.282 [87] clause 15.1.4 | PROTECTED\_PAYLOAD |
| Date and Time | The current date and time | Date and Time of creation of protected payload message |  |  |
| Payload ID | “1” | The identifier for the payload. |  |  |
| Payload sequence number | “1” | The sequence number of the protected payload. |  |  |
| Payload Algorithm | '01'O | DP\_AES\_128\_GCM |  |  |
| Signalling algorithm | not present |  |  |  |
| IV | 'DCB9085150B3CF21E2F7DF5B542C25C2'O | Initialisation vector (or nonce) for message.  Length depends on the algorithm and key used.  128 bits or 256 bits depending on the algorithm. |  |  |
| DPPK-ID | PCK-ID |  |  | PROTECTED\_PAYLOAD, PCK |
|  | GMK-ID |  |  | GMK |
|  | CSK-ID |  |  | CSK |
| Payload |  | Protected Payload (Ciphertext) | TS 24.282 [87] clause 15.2.13 |  |
| Payload IEI | '78'O | Value as used in MCData messages in TS 24.282 [87] |  |  |
| Length of Payload contents | length of the content |  |  |  |
| Payload content type | '02'O | BINARY |  |  |
| Payload contents | Encrypted MCData message (NOTE 1) |  |  | PROTECTED\_MESSAGE |
|  | Encrypted field or portion of file |  |  | PROTECTED\_FILE |
|  | Encrypted Payload(s) of the unprotected DATA PAYLOAD message (NOTE 2) |  |  | PROTECTED\_PAYLOAD |
| NOTE 1: The whole message is encrypted (including its message type)  NOTE 2: The whole payload(s) are encrypted (including their IEI and length); in general there is only one payload | | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| PROTECTED\_MESSAGE | The MCData Protected Payload message contains a whole encrypted MCData message |
| PROTECTED\_FILE | The MCData Protected Payload message contains encrypted binary data representing a file or portion of a file |
| PROTECTED\_PAYLOAD | The MCData Protected Payload message contains the Payload IE(S) of the MCData DATA PAYLOAD message |
| PCK | Encryption uses PCK |
| GMK | Encryption uses GMK |
| CSK | Encryption uses CSK |

#### 5.5.3.11 PoC Settings

##### 5.5.3.11.1 PoC Settings from the UE

Table 5.5.3.11.1-1: PoC Settings from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 4354 [103] | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **poc-settings** |  |  |  |  |
| entity [1] |  |  |  |  |
| id attribute | any value | unique identifier of the EPA (Event Publication Agent)  Editor's note: to be clarified whether there are requirements for the id | RFC 4354 [103] |  |
| am-settings |  |  | RFC 4354 [103] |  |
| answer-mode | "automatic" or "manual" |  |  |  |
|  | "manual" |  |  | MANUAL |
|  | "automatic" |  |  | AUTOMATIC |
| selected-user-profile-index |  |  | TS 24.379 [9] clause 7.4.1 |  |
| user-profile-index | same value the user-profile-index in the user profile in Table 5.5.8.3-1 |  |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| MANUAL | Manual answer mode |
| AUTOMATIC | Automatic answer mode |

##### 5.5.3.11.2 PoC Settings from the SS

Table 5.5.3.11.2-1: PoC Settings from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 4354 [103] | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **poc-settings** |  |  |  |  |
| entity [1] |  |  |  |  |
| id-attribute | "PoC-Settings-1" | unique identifier of the EPA (Event Publication Agent)  Editor's note: to be clarified whether there are requirements for the id | RFC 4354 [103] |  |
| isb-settings |  |  |  |  |
| incoming-session-barring | "false" |  |  |  |
| am-settings |  |  | RFC 4354 [103] |  |
| answer-mode |  |  |  |  |
|  | "manual" |  |  | MANUAL |
|  | "automatic" |  |  | 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 5874 [107] clause 4 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **xcap-diff** | encrypted (NOTE 5) |  |  |  |
| xcap-root attribute | tsc\_MCX\_CMSXCAPRootURI | same URI as <CMS-XCAP-root-URI> element of the initial UE configuration |  |  |
| document[1] |  |  |  |  |
| sel attribute | AUID1 & "/users/" & XUID & "/" & MCSUEID & "/" & UE-Config " | NOTE 1a, 2, 2A, 3 |  |  |
| new-etag | arbitrary value |  |  |  |
| previous-etag | same as new-etag |  |  |  |
| document[2] |  |  |  |  |
| sel attribute | AUID2 & "/users/" & XUID & "/" & User-Profile | NOTE 1b, 2, 2B |  |  |
| new-etag | arbitrary value (different than for document[1]) |  |  |  |
| previous-etag | same as new-etag |  |  |  |
| document[3] |  |  |  |  |
| sel attribute | AUID3 & "/global/service-config.xml" | NOTE 1c |  |  |
| new-etag | arbitrary value (different than for document[1] and [2]) |  |  |  |
| previous-etag | same as new-etag |  |  |  |
| NOTE 1a: AUID1 = "org.3gpp.mcptt.ue-config" for Condition MCPTT AUID1 = "org.3gpp.mcvideo.ue-config" for Condition MCVideo AUID1 = "org.3gpp.mcdata.ue-config" for Condition MCData  NOTE 1b: AUID2 = "org.3gpp.mcptt.user-profile" for Condition MCPTT AUID2 = "org.3gpp.mcvideo.user-profile" for Condition MCVideo AUID2 = "org.3gpp.mcdata.user-profile" for Condition MCData  NOTE 1c: AUID3 = "org.3gpp.mcptt.service-config" for Condition MCPTT AUID3 = "org.3gpp.mcvideo.service-config" for Condition MCVideo AUID3 = "org.3gpp.mcdata.service-config" for Condition MCData  NOTE 2: XUID = "sip:" & px\_MCPTT\_ID\_User\_A for Condition MCPTT XUID = "sip:" & px\_MCVideo\_ID\_User\_A for Condition MCVideo XUID = "sip:" & px\_MCData\_ID\_User\_A for Condition MCData  NOTE 2A: UE-Config = "mcptt-ue-configuration.xml" for Condition MCPTT UE-Config = "mcvideo-ue-configuration.xml" for Condition MCVideo UE-Config = "mcdata-ue-configuration.xml" for Condition MCData  NOTE 2B: User-Profile = "mcptt-user-profile-" & profile-index & ".xml" for Condition MCPTT (NOTE 4) User-Profile = "mcvideo-user-profile-" & profile-index & ".xml" for Condition MCVideo (NOTE 4) User-Profile = "mcdata-user-profile-" & profile-index & ".xml" for Condition MCData (NOTE 4)  NOTE 3: MCSUEID = Instance id of the UE (derived from the IMEI according to 23.003 [69] clause 13.8)  NOTE 4: profile-index is the same as in the user-profile-index attribute of the corresponding document  NOTE 5: The content of the root element <xcap-diff> (not including the xcap-root attribute) is encrypted as described in Table 5.5.13.2-2 | | | | |

Table 5.5.3.12-2: xcap-diff document for MCX group configuration

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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/" & Group-ID | NOTE 2 |  |  |
| new-etag | arbitrary value for first notification, 'incremented' value otherwise (NOTE 4) | NOTE 5 |  |  |
| previous-etag | same as new-etag for first notification, same as <new-etag> of previous notification otherwise | NOTE 5 |  |  |
| element[1] |  |  |  | GROUPKEY |
| sel attribute | “org.3gpp.MCPTT-GKTP/global/byGroupID/” & Group-ID & "/~~" & Node-Sel | NOTE 2, 3 |  |  |
| GKTPs | group key transport payloads (GKTP) document as described in Table 5.5.3.14-1 |  |  |  |
| NOTE 1: The content of the root element <xcap-diff> (not including the xcap-root attribute) is encrypted as described in Table 5.5.13.2-2  NOTE 2: Group-ID = px\_MCPTT\_Group\_A\_ID for Condition MCPTT Group-ID = px\_MCVideo\_Group\_A\_ID for Condition MCVideo Group-ID = px\_MCData\_Group\_A\_ID for Condition MCData  NOTE 3: Node-Sel = “/group/list-service/mgktp:GKTPs?xmlns(mgktp=urn:3gpp:ns:mcpttGKTP:1.0)”  NOTE 4: It is TTCN implementation dependent how the etag is incremented  NOTE 5: Values for <new-etag> and <previous-etag> shall be different for different groups | | | | |

#### 5.5.3.13 Void

#### 5.5.3.14 MCS group key transport payloads (GKTP) document

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.481 [11] clause 7.7 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **GKTP**s |  |  |  |  |
| GMK-GKTPs |  |  |  |  |
| GKTP[1] | MIKEY message as described in Table 5.5.9.1-3 | MIKEY message, containing the GMK | TS 33.180 [94] |  |
| id attribute | arbitrary value | unique charstring assigned by the SS |  |  |

#### 5.5.3.15 Conference-info

Table 5.5.3.15-1: Conference-info from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 4575 [127] clause 6 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **conference-info** |  |  |  |  |
| entity attribute | Encrypted URI (NOTE 1) with value set to px\_MCPTT\_Group\_A\_ID | The URI of the group |  | MCPTT |
|  | Encrypted URI (NOTE 1) with value set to px\_MCVideo\_Group\_A\_ID |  |  | MCVIDEO |
| state attribute | not present |  |  |  |
| version attribute | not present |  |  |  |
| conference-description | not present |  |  |  |
| host-info | not present |  |  |  |
| conference-state | not present |  |  |  |
| users |  |  |  |  |
| **user [1]** |  |  |  |  |
| entity attribute | Encrypted URI (NOTE 1) with value set to px\_MCPTT\_ID\_User\_A |  |  | MCPTT |
|  | Encrypted URI (NOTE 1) with value set to px\_MCVideo\_ID\_User\_A |  |  | MCVIDEO |
| state attribute | not present |  |  |  |
| display-text | not present |  |  |  |
| associated-aors | not present |  |  |  |
| roles | not present |  |  |  |
| languages | not present |  |  |  |
| cascaded-focus | not present |  |  |  |
| endpoint |  |  |  |  |
| entity attribute | px\_MCX\_SIP\_PublicUserId\_A\_1 | Contact URI of the participant | RFC 4575 [127] clause 5.7 |  |
| status attribute | not present |  |  |  |
| display-text | not present |  |  |  |
| referred | not present |  |  |  |
| status | connected |  |  |  |
| joining-method | not present |  |  |  |
| joining-info | not present |  |  |  |
| disconnection-method | not present |  |  |  |
| disconnection-info | not present |  |  |  |
| media | not present |  |  |  |
| call-info | not present |  |  |  |
| **user [2]** |  |  |  |  |
| entity attribute | Encrypted URI (NOTE 1) with value set to px\_MCPTT\_ID\_User\_B |  |  | MCPTT |
|  | Encrypted URI (NOTE 1) with value set to px\_MCVideo\_ID\_User\_B |  |  | MCVIDEO |
| state attribute | not present |  |  |  |
| display-text | not present |  |  |  |
| associated-aors | not present |  |  |  |
| roles | not present |  |  |  |
| languages | not present |  |  |  |
| cascaded-focus | not present |  |  |  |
| endpoint |  |  |  |  |
| entity attribute | px\_MCX\_SIP\_PublicUserId\_B | Contact URI of the participant | RFC 4575 [127] clause 5.7 |  |
| status attribute | not present |  |  |  |
| display-text | not present |  |  |  |
| referred | not present |  |  |  |
| status | connected |  |  |  |
| joining-method | not present |  |  |  |
| joining-info | not present |  |  |  |
| disconnection-method | not present |  |  |  |
| disconnection-info | not present |  |  |  |
| media | not present |  |  |  |
| call-info | not present |  |  |  |
| **user [3]** |  |  |  |  |
| entity attribute | Encrypted URI (NOTE 1) with value set to px\_MCPTT\_ID\_User\_C |  |  | MCPTT |
|  | Encrypted URI (NOTE 1) with value set to px\_MCVideo\_ID\_User\_C |  |  | MCVIDEO |
| state attribute | not present |  |  |  |
| display-text | not present |  |  |  |
| associated-aors | not present |  |  |  |
| roles | not present |  |  |  |
| languages | not present |  |  |  |
| cascaded-focus | not present |  |  |  |
| endpoint |  |  |  |  |
| entity attribute | px\_MCX\_SIP\_PublicUserId\_C | Contact URI of the participant | RFC 4575 [127] clause 5.7 |  |
| status attribute | not present |  |  |  |
| display-text | not present |  |  |  |
| referred | not present |  |  |  |
| status | connected |  |  |  |
| joining-method | not present |  |  |  |
| joining-info | not present |  |  |  |
| disconnection-method | not present |  |  |  |
| disconnection-info | not present |  |  |  |
| media | not present |  |  |  |
| call-info | not present |  |  |  |
| sidebars-by-ref | not present |  |  |  |
| sidebars-by-val | not present |  |  |  |
| NOTE 1: Encrypted attribute as described in Table 5.5.13.3-1 | | | | |

### 5.5.4 Default HTTP message and other information elements

#### 5.5.4.1 General

The HTTP Messages are specified in RFC 2616 [26]. Wherever another reference applies to their content it is explicitly indicated.

The following conditions apply throughout clause 5.5:

Table 5.5.4.1-1: Conditions

|  |  |
| --- | --- |
| Condition | Explanation |
| AUTH | Message/IE sent only as part of an MCX UE authentication |
| UEINITIALCONFIG | Message/IE sent only as part of an MCX UE initial configuration |
| USERAUTH | Message/IE sent only as part of an MCX UE user authentication |
| UECONFIG | Message/IE sent only as part of an MCX UE configuration |
| UEUSERPROF | Message/IE sent only as part of an MCX UE User profile configuration |
| UESERVCONFIG | Message/IE sent only as part of an MCX UE service configuration |
| GROUPCONFIG | Message/IE sent only as part of an MCX group configuration |
| TEMPGROUP | Message/IE sent only in temporary group creation scenario |
| TOKEN | Message/IE sent only as part of an MCX token exchange |
| KMSINIT | Message/IE sent only as part of an MCX KMS initialisation |
| KMSKEY | Message/IE sent only as part of an MCX KMS key exchange |
| FD\_HTTP | Message/IE sent only as part of MCData signalling for FD using HTTP |

#### 5.5.4.2 GET

Table 5.5.4.2-1: HTTP GET

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 2616 [26] | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Request-Line** |  |  |  |  |
| Method | "GET" |  |  |  |
| Request-URI |  |  |  |  |
| uri | tsc\_MCX\_IdMS\_auth\_UriPath | points to the Authorisation endpoint of the IdM Server | TS 33.180 [94] | AUTH |
|  | px\_MCX\_InitialConfigServer\_UriPath | points to initial UE Configuration document | TS 24.484 [14] | UEINITIALCONFIG |
|  | tsc\_MCX\_CMSXCAPRootURI & "/" & AUID1 & "/users/" & XUI & ue-config-docname | points to UE Configuration document  (NOTE 1a, 2, 3, 5) | TS 24.484 [14] | UECONFIG |
|  | tsc\_MCX\_CMSXCAPRootURI & "/" & AUID2 & "/users/" & XUID & ""/" & user-profile-docname | points to UE User Profile document  (NOTE 1b, 2, 4) | TS 24.484 [14] | UEUSERPROF |
|  | tsc\_MCX\_CMSXCAPRootURI & "/" & AUID3 & "/global/service-config.xml" | points to UE Service Configuration document  (NOTE 1c, 2) | TS 24.484 [14] | UESERVCONFIG |
|  | tsc\_MCX\_GMSXCAPRootURI & "/" & "org.openmobilealliance.groups/global/byGroupID/" & group-id | points to group configuration document  (NOTE 6) | TS 24.481 [11] | GROUPCONFIG |
|  | URI as contained in the payload of the FD SIGNALLING PAYLOAD indication the file upload |  |  | FD\_HTTP |
| query | As described in Table 5.5.4.10.1-1 |  | TS 33.180 [94] | AUTH |
| HTTP-Version | "HTTP/1.1" |  |  |  |
| **Cache-Control** |  |  | RFC 2616 [26] |  |
| cache-directive | "no-cache" |  |  |  |
| **Authorization** |  |  | RFC 2617 [72] | UECONFIG  UEUSERPROF  UESERVCONFIG  GROUPCONFIG  FD\_HTTP |
| authentication-scheme | “Bearer” |  | RFC 6750 [104] |  |
| b64token | Access token as assigned to the UE by Token Response |  | RFC 6750 [104] |  |
| **Authorization** | not present |  |  |  |
| **Content-Type** |  |  |  | AUTH |
| media-type | "application/x-www-form-urlencoded" |  |  |  |
| **Content-Type** | Not present |  |  |  |
| **Message-body** | Not present |  |  |  |
| NOTE 1a: AUID1 = "org.3gpp.mcptt.ue-config" for Condition MCPTT AUID1 = "org.3gpp.mcvideo.ue-config" for Condition MCVIDEO AUID1 = "org.3gpp.mcdata.ue-config" for Condition MCDATA  NOTE 1b: AUID2 = "org.3gpp.mcptt.user-profile" for Condition MCPTT AUID2 = "org.3gpp.mcvideo.user-profile" for Condition MCVIDEO AUID2 = "org.3gpp.mcdata.user-profile" for Condition MCDATA  NOTE 1c: AUID3 = "org.3gpp.mcptt.service-config" for Condition MCPTT AUID3 = "org.3gpp.mcvideo.service-config" for Condition MCVIDEO AUID3 = "org.3gpp.mcdata.service-config" for Condition MCDATA  NOTE 2: XUID = "sip:" & px\_MCPTT\_ID\_User\_A for Condition MCPTT XUID = "sip:" & px\_MCVideo\_ID\_User\_A for Condition MCVIDEO XUID = "sip:" & px\_MCData\_ID\_User\_A for Condition MCDATA  NOTE 3: MCSUEID = Instance id of the UE (derived from the IMEI according to 23.003 [69] clause 13.8)  NOTE 4: user-profile-docname = "mcptt-user-profile-" & profile-index & ".xml" for Condition MCPTT user-profile-docname = "mcvideo-user-profile-" & profile-index & ".xml" for Condition MCVIDEO user-profile-docname = "mcdata-user-profile-" & profile-index & ".xml" for Condition MCDATA with profile-index being the same as in the <user-profile-index> attribute of the corresponding document  NOTE 5: ue-config-docname = "mcptt-ue-configuration.xml" for Condition MCPTT ue-config-docname = "mcvideo-ue-configuration.xml" for Condition MCVIDEO ue-config-docname = "mcdata-ue-configuration.xml" for Condition MCDATA  NOTE 6: group-id = px\_MCPTT\_Group\_A\_ID for Condition MCPTT group-id = px\_MCVideo\_Group\_A\_ID for Condition MCVIDEO group-id = px\_MCData\_Group\_A\_ID for Condition MCDATA | | | | |

#### 5.5.4.3 POST

Table 5.5.4.3-1: HTTP POST

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 2616 [26] | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Status-Line** |  |  |  |  |
| Method | "POST" |  |  |  |
| Request-URI |  |  |  |  |
| uri | tsc\_MCX\_IdMS\_auth\_UriPath | points to the Authorisation endpoint of the IdM Server | TS 33.180 [94] | AUTH, 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\_ClientReqUrl\_init | "KMS Initialize" request according to TS 33.180 [94] D.2.3 | TS 33.180 [94] | KMSINIT |
|  | tsc\_MCX\_KMS\_ClientReqUrl | "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\_MCX\_GroupCreationXUI & "/" & temporary-group-id | Points to the temporary group configuration document to be created  (NOTE 1) | TS 24.481[11] clause 6.3.14.2 | TEMPGROUP |
|  | tsc\_MCData\_MSF\_URI | The absolute URI identifying the resource on a media storage function | TS 24.282 [87], clause 10.2.2.1 | FD\_HTTP |
| HTTP-Version | "HTTP/1.1" |  |  |  |
| **Cache-Control** |  |  | RFC 2616 [26] |  |
| cache-directive | "no-cache" |  |  |  |
| **Authorization** |  |  | RFC 2617 [72] | KMSINIT, KMSKEY, TEMPGROUP, FD\_HTTP |
| authentication-scheme | “Bearer” |  | RFC 6750 [104] |  |
| b64token | Access token as assigned to the UE by Token Response |  | RFC 6750 [104] |  |
| **Host** |  |  |  | FD\_HTTP |
| host | tsc\_MCData\_MSF\_Hostname | hostname identifying the media storage function | TS 24.282 [87], clause 10.2.2.1 |  |
| port | not present |  |  |  |
| **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" |  |  |  |
| **Content-Type** |  |  |  | FD\_HTTP |
| media-type | "multipart/mixed" |  | TS 24.282 [87], clause 10.2.2.1 |  |
| **Message-body** |  |  |  | AUTH |
| Authentication Request | As described in Table 5.5.4.10.1-1 |  |  |  |
| **Message-body** |  |  | HTML 4.01 Specification [105] | 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 |  | (KMSINIT OR 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 5.5.7.4-2 |  |  |  |
| **Message-body** |  |  |  | FD\_HTTP |
| MIME body part |  | **MCData-Info** |  |  |
| MIME-part-headers |  |  |  |  |
| MIME-Content-Type | "application/vnd.3gpp.mcdata-info+xml" |  |  |  |
| MIME-part-body | MCData-Info described in Table 5.5.3.2.1-3 |  |  |  |
| MIME body part |  | **File content** | TS 24.282 [87] clause 10.2.2.1 |  |
| MIME-part-headers |  |  |  |  |
| MIME-Content-Type | "application/octet-stream" |  |  |  |
| MIME-part-body | binary data representing the file |  |  |  |
| NOTE 1: temporary-group-id = px\_MCPTT\_Group\_T\_ID for Condition MCPTT temporary-group-id = px\_MCVideo\_Group\_T\_ID for Condition MCVIDEO temporary-group-id = px\_MCData\_Group\_T\_ID for Condition MCDATA | | | | |

#### 5.5.4.4 PUT

Table 5.5.4.4-1: HTTP PUT

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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\_MCX\_GroupCreationXUI & "/" & document name (NOTE 1) | XCAP URI in users tree where the XUI is set to a group creation XUI configuration parameter | TS 24.481 [11]  clause 6.3.2.2.1 | GROUPCREATE |
| **Cache-Control** |  |  | RFC 2616 [26] |  |
| cache-directive | "no-cache" |  |  |  |
| Authorization |  | TS 24.482 [12] A.2.3: Expected by the server to validate and identify the client | RFC 2617 [72] |  |
| authentication-scheme | “Bearer” |  | RFC 6750 [104] |  |
| b64token | Access token as assigned to the UE by Token Response |  | RFC 6750 [104] |  |
| **Content-Type** |  |  |  | GROUPCREATE |
| media-type | application/vnd.oma.poc.groups+xml |  |  |  |
| **Message-body** |  |  |  | GROUPCREATE |
| **Group Creation Document** | As described in Table 5.5.7.4-1 |  |  |  |
| NOTE 1: document name is the name of the group document contained in the message body | | | | |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| GROUPCREATE | Message/IE sent only in group creation scenario |
| NOTE: For further conditions see table 5.5.1-1 | |

#### 5.5.4.5 DELETE

Table 5.5.4.5-1: HTTP DELETE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 2616 [26] | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Request-line** |  |  |  |  |
| Method | "DELETE" |  |  |  |
| Request-URI | tsc\_MCX\_GMSXCAPRootURI & "/" & "org.openmobilealliance.groups/users/" & px\_MCX\_GroupCreationXUI & "/" & temporary-group-id | Points to the group configuration document  (NOTE 1) | TS 24.481 [11] | TEMPGROUP |
| **Cache-Control** |  |  | RFC 2616 [26] |  |
| cache-directive | "no-cache" |  |  |  |
| Authorization |  | TS 24.482 [12] A.2.3: Expected by the server to validate and identify the client | RFC 2617 [72] |  |
| authentication-scheme | “Bearer” |  | RFC 6750 [104] |  |
| b64token | Access token as assigned to the UE by Token Response |  | RFC 6750 [104] |  |
| NOTE 1: temporary-group-id = px\_MCPTT\_Group\_T\_ID for Condition MCPTT temporary-group-id = px\_MCVideo\_Group\_T\_ID for Condition MCVIDEO temporary-group-id = px\_MCData\_Group\_T\_ID for Condition MCDATA | | | | |

#### 5.5.4.6 HTTP 200 (OK)

Table 5.5.4.6-1: HTTP 200 (OK)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 2616 [26] | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Status-Line** |  |  |  |  |
| HTTP-Version | "HTTP/1.1" |  |  |  |
| Status-Code | "200" |  |  |  |
| Reason-Phrase | "OK" |  |  |  |
| **Cache-Control** |  |  | RFC 2616 [26] |  |
| cache-directive | "no-store" |  |  |  |
| **Pragma** |  |  | RFC 2616 [26] |  |
| pragma-directive | "no-cache" |  |  |  |
| **Content-Length** |  |  |  |  |
| value | length of message-body |  |  |  |
| **Content-Type** |  |  |  | TOKEN |
| media-type | "application/json;charset=UTF-8" |  | TS 33.180 [94] |  |
| **Content-Type** |  |  |  | KMSINIT |
| media-type | "application/xml" |  | TS 33.180 [94] |  |
| **Content-Type** |  |  |  | KMSKEY |
| media-type | "application/xml" |  | TS 33.180 [94] |  |
| **Content-Type** |  |  |  | UEINITIALCONFIG |
| media-type | "application/vnd.3gpp.mcptt-ue-init-config+xml" |  | TS 24.484 [14] |  |
| **Content-Type** |  |  |  | UECONFIG |
| media-type | "application/vnd.3gpp.mcptt-ue-config+xml" |  | TS 24.484 [14] | MCPTT |
|  | "application/vnd.3gpp.mcvideo-ue-config+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-ue-config+xml" |  |  | MCDATA |
| **Content-Type** |  |  |  | UEUSERPROF |
| media-type | "application/vnd.3gpp.mcptt-user-profile+xml" |  | TS 24.484 [14] | MCPTT |
|  | "application/vnd.3gpp.mcvideo-user-profile+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-user-profile+xml" |  |  | MCDATA |
| **Content-Type** |  |  |  | UESERVCONFIG |
| media-type | "application/vnd.3gpp.mcptt-service-config+xml" |  | TS 24.484 [14] | MCPTT |
|  | "application/vnd.3gpp.mcvideo-service-config+xml" |  |  | MCVIDEO |
|  | "application/vnd.3gpp.mcdata-service-config+xml" |  |  | MCDATA |
| **Content-Type** |  |  |  | GROUPCONFIG |
| media-type | "application/vnd.oma.poc.groups+xml" |  | TS 24.481 [11] |  |
| **Content-Type** |  |  |  | TEMPGROUP |
| media-type | "application/vnd.3gpp.GMOP+xml" |  | TS 24.481 [11] |  |
| **Content-Type** |  |  |  | FD\_HTTP |
| media-type | "application/octet-stream" |  |  |  |
| **Message-body** |  |  |  | TOKEN |
| Token response | As described in Table 5.5.4.10.4-1 |  |  |  |
| **Message-body** |  |  |  | KMSINIT |
| KMS Certificate | As described in Table 5.5.4.10.6-1 |  |  |  |
| **Message-body** |  |  |  | KMSKEY |
| KMS Key Set | As described in Table 5.5.4.10.8-1 |  |  |  |
| **Message-body** |  |  |  | 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 |  | MCPTT |
| mcvideo-UE-configuration | As described in Table 5.5.8.5-1 | UE Configuration document returned |  | MCVIDEO |
| mcdata-UE-configuration | As described in Table 5.5.8.10-1 | UE Configuration document returned |  | MCDATA |
| **Message-body** |  |  |  | UEUSERPROF |
| mcptt-user-profile | As described in Table 5.5.8.3-1 | UE User Profile document returned |  | MCPTT |
| mcvideo-user-profile | As described in Table 5.5.8.7-1 | UE User Profile document returned |  | MCVIDEO |
| mcdata-user-profile | As described in Table 5.5.8.11-1 | UE User Profile document returned |  | MCDATA |
| **Message-body** |  |  |  | UESERVCONFIG |
| service-configuration-info | As described in Table 5.5.8.4-1 | UE Service Configuration document returned |  | MCPTT |
| service-configuration-info | As described in Table 5.5.8.8-1 | UE Service Configuration document returned |  | MCVIDEO |
| service-configuration-info | As described in Table 5.5.8.12-1 | UE Service Configuration document returned |  | MCDATA |
| **Message-body** |  |  |  | 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 |  |  |  |
| **Message-body** |  |  |  | FD\_HTTP |
| file content | binary data representing the file |  |  |  |

#### 5.5.4.7 HTTP 201 (Created)

Table 5.5.4.7-1: HTTP 201 (Created)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 2616 [26] | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Status-Line** |  |  |  |  |
| HTTP-Version | "HTTP/1.1" |  |  |  |
| Status-Code | "201" |  |  |  |
| Reason-Phrase | "Created" |  |  |  |
| **Cache-Control** |  |  | RFC 2616 [26] |  |
| cache-directive | "no-store" |  |  |  |
| **Pragma** |  |  | RFC 2616 [26] |  |
| pragma-directive | "no-cache" |  |  |  |
| **ETag** |  |  | RFC 2616 [26] |  |
| entity-tag | unique value arbitrarily selected by the SS |  |  |  |
| Location |  |  | RFC 7231 [118] clauses 4.3.3, 6.3.2, 7.1.2 |  |
| uri | tsc\_MCX\_GMSXCAPRootURI & "/" & "org.openmobilealliance.groups/global/byGroupID/" & group-id | URI referring to the created group document |  |  |
|  | tsc\_MCData\_MSF\_URI & "/file-location-1" | URL identifying the location of the stored file |  | FD\_HTTP |
| NOTE 1: group-id = px\_MCPTT\_Group\_B\_ID for Condition MCPTT group-id = px\_MCVideo\_Group\_B\_ID for Condition MCVIDEO group-id = px\_MCData\_Group\_B\_ID for Condition MCDATA | | | | |

#### 5.5.4.8 HTTP 302 (Found)

Table 5.5.4.8-1: HTTP 302 (Found)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 2616 [26] | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Status-Line** |  |  |  |  |
| HTTP-Version | "HTTP/1.1" |  |  |  |
| Status-Code | "302" |  |  |  |
| Reason-Phrase | "Found" |  |  |  |
| **Location** |  |  |  | AUTH |
| Location-URI |  |  |  |  |
| uri | px\_MCX\_OAuth\_RedirectURI\_A | Identifier of the MCPTT client making the API request | TS 33.180 [94] |  |
| query | As described in Table 5.5.4.10.2-1 |  |  |  |

#### 5.5.4.9 HTTP 409 (Conflict)

Table 5.5.4.9-1: HTTP 409 (Conflict)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 2616 [26] | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Status-Line** |  |  |  |  |
| HTTP-Version | "HTTP/1.1" |  |  |  |
| Status-Code | "409" |  |  |  |
| Reason-Phrase | "URI constraint violated" | Conflict reason | TS 24.484 [14] |  |

#### 5.5.4.10 HTTP Message Bodies

##### 5.5.4.10.1 Authentication Request

Table 5.5.4.10.1-1: Authentication Request

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 33.180 [94], clause B.4.2.2 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| response-type | "code" | For native MCX clients the value shall be set to "code" | OpenID Connect 1.0 [95] |  |
| client\_id | px\_MCX\_OAuth\_ClientId\_A | Identifier of the MCX client making the API request | OpenID Connect 1.0 [95] |  |
| Scope | "openid" | Scope values are expressed as a list of space-delimited, case-sensitive strings which indicate which MCS resource servers the client is requesting access to.  "openid" is defined by the OpenID Connect standard and is mandatory | TS 33.180 [94]  OpenID Connect 1.0 [95] |  |
|  | "3gpp:mc:ptt\_service" "3gpp:mc:ptt\_key\_management\_service" "3gpp:mc:ptt\_config\_management\_service" "3gpp:mc:ptt\_group\_management\_service"  NOTE: The list may contain further scope values which are not checked | Additional authorization scopes when the UE supports MCPTT |  | MCPTT |
|  | "3gpp:mc:video\_service" "3gpp:mc:video\_key\_management\_service" "3gpp:mc:video\_config\_management\_service" "3gpp:mc:video\_group\_management\_service"  NOTE: The list may contain further scope values which are not checked | Additional authorization scopes when the UE supports MCVideo |  | MCVIDEO |
|  | "3gpp:mc:data\_service" "3gpp:mc:data\_key\_management\_service" "3gpp:mc:data\_config\_management\_service" "3gpp:mc:data\_group\_management\_service"  NOTE: The list may contain further scope values which are not checked | Additional authorization scopes when the UE supports MCData |  | MCDATA |
| redirect\_uri | px\_MCX\_OAuth\_RedirectURI\_A | The URI of the MCX client to which the IdM server will redirect the MCX client's user agent in order to return the authorization code | OpenID Connect 1.0 [95] |  |
| state | any value as selected by the UE | An opaque value used by the MCX client to maintain state between the authentication request and authentication response | OpenID Connect 1.0 [95] |  |
| acr-values | "3gpp:acr:password" | Space-separated string that specifies the acr values that the IdM server is being requested to use for processing this authentication request | TS 33.180 [94] |  |
| code-challenge | any value | base64url-encoded SHA-256 challenge: hash of the code\_verifier selected by the UE | TS 33.180 [94]  RFC 7636 [100] |  |
| codechallenge-method | "S256" | The hash method used to transform the code verifier to produce the code challenge | TS 33.180 [94]  RFC 7636 [100] |  |

##### 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 | "SplxlOBeZQQYbYS6WxSbIA" | The authorization code generated by the authorization endpoint and returned to the MCX client via the authentication response | TS 33.180 [94] |  |
| state | same value as in the Authentication Request | The value shall match the exact value used in the authorization request | TS 33.180 [94] |  |

##### 5.5.4.10.3 Token Request

Table 5.5.4.10.3-1: Token Request

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 33.180 [94], clause B.4.2.4 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| grant-type | "authorization\_code" |  | RFC 2616 [26] |  |
| code | same value as assigned by the SS in the Authentication Response | The authorization code generated by the authorization endpoint and returned to the MCX client via the authentication response | TS 33.180 [94] |  |
| client\_id | px\_MCX\_OAuth\_ClientId\_A | Identifier of the MCX client making the API request | TS 33.180 [94] |  |
| redirect\_uri | px\_MCX\_OAuth\_RedirectURI\_A | The URI of the MCX client to which the IdM server will redirect the MCX client's user agent | TS 33.180 [94] |  |
| code\_verifier | Value selected by the UE: The SS shall check that the code-challenge in the Authentication Request is the base64url-encoded SHA-256 hash of the code-verifier | A cryptographically random string that is used to correlate the authorization request to the token request; the minimum length is 43 characters, the maximum length of 128 characters | TS 33.180 [94]  RFC 7636 [100] |  |

##### 5.5.4.10.4 Token Response

Table 5.5.4.10.4-1: Token Response

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 33.180 [94], clause B.4.2.5 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **access\_token** |  | The access token. The access token is opaque to the MCX client | RFC 6749 [77]  TS 33.180 [94] |  |
| { |  |  |  |  |
| { |  | Header Algorithm |  |  |
| "kid" | "jws-rsa" | hint indicating which key was used to secure the JWS: name of the RSA public key in case of RS256  Editor’s note:  value to be confirmed | RFC 7515 [102] |  |
| "alg" | "RS256" | identifies the cryptographic algorithm used to secure the JWS: RSASSA-PKCS1-v1\_5 SHA-256 digital signature  Editor’s note:  value to be confirmed | RFC 7515 [102] |  |
| } |  |  |  |  |
| { |  | Payload Data | RFC 7519 [101] |  |
| "mcptt\_id" | px\_MCPTT\_ID\_User\_A |  | TS 24.380  TS 24.483  TS 24.380 B.2.2.3 | MCPTT |
| "mcvideo\_id" | px\_MCVideo\_ID\_User\_A |  | TS 33.180 B.2.2.3 | MCVIDEO |
| "mcdata\_id" | px\_MCData\_ID\_User\_A |  | TS 24.380 B.2.2.3 | MCDATA |
| "scope" | "openid" | list of space-delimited, case-sensitive strings to inform the client of the scope of the access token issued and is OPTIONAL, if identical to the scope requested by the client otherwise REQUIRED  "openid" is defined by the OpenID Connect standard and is mandatory regardless from the MCS context in which the message is used | RFC 6749 [77]  TS 33.180 [94] B.2.2.2  OpenID Connect 1.0 [95] |  |
|  | "3gpp:mc:ptt\_service" "3gpp:mc:ptt\_key\_management\_service" "3gpp:mc:ptt\_config\_management\_service" "3gpp:mc:ptt\_group\_management\_service" |  |  | MCPTT |
|  | "3gpp:mc:video\_service" "3gpp:mc:video\_key\_management\_service" "3gpp:mc:video\_config\_management\_service" "3gpp:mc:video\_group\_management\_service" |  |  | MCVIDEO |
|  | "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 MCX 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 MCX client may validate the user with the ID token and configure itself for the user | RFC 6749 [77]  TS 33.180 [94] |  |
| { |  |  |  |  |
| { |  | Header Algorithm | RFC 7515 [102] |  |
| "kid" | "jws-rsa" | hint indicating which key was used to secure the JWS  Editor’s note: value to be confirmed |  |  |
| "alg" | "RS256" | identifies the cryptographic algorithm used to secure the JWS  Editor’s note: value to be confirmed |  |  |
| } |  |  |  |  |
| { |  | Payload Data | RFC 7519 [101] |  |
| “mcptt\_id” | px\_MCPTT\_ID\_User\_A |  | TS 24.380  TS 24.483  TS 33.180 B.2.1.3 | MCPTT |
| "mcvideo\_id" | px\_MCVideo\_ID\_User\_A |  | TS 33.180 B.2.1.3 | MCVIDEO |
| "mcdata\_id" | px\_MCData\_ID\_User\_A |  | TS 24.380 B.2.1.3 | MCDATA |
| "sub" | "1234567890" | Arbitrarily selected string: case-sensitive string containing a StringOrURI value which identifies the principal that is the subject of the JWT and is optional | RFC 7519 [101] |  |
| "aud" | client\_id as received in token request | Audience: identifies the recipients that the JWT is intended for and is optional | RFC 7519 [101] |  |
| "iss" | tsc\_MCX\_IdMS\_token\_UriPath | Issuer: case-sensitive string containing a StringOrURI value which identifies the principal that issued the JWT and is optional | RFC 7519 [101] |  |
| "exp" | Current system time + 7199 seconds;  the system time is the number of seconds since 00:00:00 UTC on 1 January 1970 | Number containing a NumericData value identifies the expiration time on or after which the JWT MUST NOT be accepted for processing | RFC 7519 [101]  TS 33.180 [94] |  |
| "iat" | Current system time  Epoch time: number of seconds since 00:00:00 UTC on 1 January 1970 | Numeric value which identifies the time at which the JWT was issued  and is optional | RFC 7519 [101]  TS 33.180 [94] |  |
| } |  |  |  |  |
| Signature | HASH (base64UrlEncode(header) + “.” + base64UrlEncode(payload)) | Created by the hash algorithm corresponding to the algorithm provided in the header | RFC 7515 [102] |  |
| } |  |  |  |  |
| token-type | "Bearer" | The token type for access | RFC 6749 [77] |  |
| expires-in | "7199" | Token expiry time | RFC 6749 [77] |  |

##### 5.5.4.10.5 Void

##### 5.5.4.10.6 KMS Certificate

Table 5.5.4.10.6-1: KMS Certificate

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 33.180 [94], clause D.3.2 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **SignedKmsResponse** |  |  |  |  |
| Id | “kmsResponse” | arbitrarily selected id which the Signature’s Reference URI refers to |  |  |
| KmsUri | tsc\_MCX\_KMS\_Hostname | The URI of the KMS which issued the key set |  |  |
| UserUri | tsc\_MCX\_MC\_ID\_User\_A  Editor's note: to be clarified whether the MC ID can be used in this context or whether there are restrictions how to set the UserUri | The MC ID with which the user has used for authentication |  |  |
| Time | Current system time of the SS | Time stamp of KMS message |  |  |
| ClientReqUrl | tsc\_MCX\_KMS\_ClientReqUrl\_init | URL of the client making the key request |  |  |
| **KmsMessage** |  |  |  |  |
| KmsInit |  |  |  |  |
| Version | "1.0.0" |  |  |  |
| KmsCertificate |  |  |  |  |
| Version | "1.1.0" | The version number of the certificate type |  |  |
| Role | "Root" | This shall indicate whether the certificate is a "Root" or "External" certificate |  |  |
| CertUri | tsc\_MCX\_KMS\_CertUri | The URI of the Certificate (this object) |  |  |
| KmsUri | tsc\_MCX\_KMS\_Hostname | The URI of the KMS which issued the Certificate |  |  |
| Issuer | Not present | (Optional) String describing the issuing entity |  |  |
| ValidFrom | Not present | (Optional) Date from which the Certificate may be used |  |  |
| ValidTo | Not present | (Optional) Date at which the Certificate expires |  |  |
| Revoked | false | (Optional) A Boolean value defining whether a Certificate has been revoked |  |  |
| UserIDFormat | "2" | Shall contain the value '2' |  |  |
| UserKeyPeriod | "2592000" | The number of seconds that each user key issued by this KMS should be used  (2592000 seconds are 30 days) |  |  |
| UserKeyOffset | CurrentTimestamp MODULO UserKeyPeriod | UserKeyOffset so that KeyPeriod starts at current system time; CurrentTimestamp is the current system time in seconds since 0h on 1st Jan 1900 |  |  |
| PubEncKey | SAKKE Public Key Z\_T derived from master secret z\_T according to RFC 6508 | The SAKKE Public Key, "Z\_T". This is an OCTET STRING encoding of an elliptic curve point | RFC 6508 [99] |  |
| PubAuthKey | ECCSI Public Key KPAK derived from private key KSAK according to RFC 6507 | The ECCSI Public Key, "KPAK". This is an OCTET STRING encoding of an elliptic curve point | RFC 6507 [98] |  |
| ParameterSet | Not present | (Optional) The choice of parameter set used for SAKKE and ECCSI |  |  |
| KmsDomainList | Not present | (Optional) List of domains associated with the certificate |  |  |
| **SignedInfo** |  |  |  |  |
| CanonicalizationAlgorithm | "xml-c14n" | XML Signature processing |  |  |
| SignatureAlgorithm | "HMAC-SHA-256" | Hashing algorithm to be applied to sign the SignedInfo with the key given in the KeyInfo |  |  |
| Reference |  |  |  |  |
| URI | “#kmsResponse” | referring to the data object for which the hash is generatet (KMS response element in this case) |  |  |
| DigestAlgorithm | "SHA-256" | Hashing algorithm to be applied to sign the data object |  |  |
| DigestValue | Hash signing the data object (referred to by the URI) |  |  |  |
| SignatureValue | Hash signing the SignedInfo | The signing key is derived from the InK (px\_MCX\_InK) according to TS 33.180 [94] Annex F.1.4 with  FC = 0x52  XPK-ID = InK-ID (px\_MCX\_InK\_ID) |  |  |
| KeyInfo |  |  |  |  |
| KeyName | base64 encoded InK-ID (px\_MCX\_InK\_ID) |  |  |  |

##### 5.5.4.10.7 Void

##### 5.5.4.10.8 KMS Key Set

Table 5.5.4.10.8-1: KMS Key Set

| Derivation Path: TS 33.180 [94], clause D.3.2.2 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Signed KmsResponse** |  |  |  |  |
| Id | “kmsResponse” | arbitrarily selected id which the Signature’s Reference URI refers to |  |  |
| KmsUri | tsc\_MCX\_KMS\_Hostname | The URI of the KMS which issued the key set |  |  |
| UserUri | tsc\_MCX\_MC\_ID\_User\_A  Editor's note: to be clarified whether the MC ID can be used in this context or whether there are restrictions how to set the UserUri | The MC ID with which the user has used for authentication |  |  |
| Time | Current system time of the SS | Time stamp of KMS message |  |  |
| ClientReqUrl | tsc\_MCX\_KMS\_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 |  | MCPTT |
|  | px\_MCVideo\_ID\_User\_A | The user's MCVideo ID |  | MCVIDEO |
|  | px\_MCData\_ID\_User\_A | The user's MCData ID |  | MCDATA |
| UserID | UID generated according to annex F.2.1 of TS 33.180 [94] with MCX-Id as identifier  Editor’s note: to be clarified how to convert the UID into charstring (e.g. hexstring representation or base64 encoding) | UID corresponding to the key set | TS 33.180 [94] |  |
| ValidFrom | Not present | (Optional) Date and time from which the key set may be used |  |  |
| ValidTo | Not present | (Optional) Date and time at which the key set expires |  |  |
| 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) |  |  |
| **UserPubTokenPVT** |  | The ECCSI public validation token, "PVT". This is an OCTET STRING encoding of an elliptic curve point;  the PVT is generated using the UID as contained in the UserID of the KSM message | RFC 6507 [98] |  |
| EncryptionAlgorithm | "AES256" | Encryption algorithm to use |  |  |
| KeyInfo |  |  |  |  |
| KeyName | base64 encoded TrK-ID (px\_MCX\_TrK\_ID) |  |  |  |
| CipherData |  |  |  |  |
| CipherValue | Encrypted PVT | The encryption key is derived from the TrK (px\_MCX\_TrK) according to TS 33.180 [94] Annex F.1.4 with  FC = 0x51  XPK-ID = TrK-ID (px\_MCX\_TrK\_ID) |  |  |
| **Signature** |  |  |  |  |
| **SignedInfo** |  |  |  |  |
| CanonicalizationAlgorithm | "xml-c14n" | XML Signature processing |  |  |
| SignatureAlgorithm | "HMAC-SHA-256" | Hashing algorithm to be applied to sign the SignedInfo with the key given in the KeyInfo |  |  |
| Reference |  |  |  |  |
| URI | “#kmsResponse” | referring to the data object for which the hash is generatet (KMS response element in this case) |  |  |
| DigestAlgorithm | "SHA-256" | Hashing algorithm to be applied to sign the data object |  |  |
| DigestValue | Hash signing the data object (referred to by the URI) |  |  |  |
| SignatureValue | Hash signing the SignedInfo | The signing key is derived from the InK (px\_MCX\_InK) according to TS 33.180 [94] Annex F.1.4 with  FC = 0x52  XPK-ID = InK-ID (px\_MCX\_InK\_ID) |  |  |
| KeyInfo |  |  |  |  |
| KeyName | base64 encoded InK-ID (px\_MCX\_InK\_ID) |  |  |  |

##### 5.5.4.10.9 Signed KMS Request

Table 5.5.4.10.9-1: Signed KMS Request

| Derivation Path: TS 33.180 [94], clause D.2.2 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **SignedKmsRequest** |  |  |  |  |
| **KmsRequest** |  |  |  |  |
| Id attribute | any value | value as used as reference in the signature |  |  |
| Version attribute | "1.1.0" |  |  |  |
| UserUri | px\_MCPTT\_ID\_User\_A | The user's MCPTT ID |  | MCPTT |
|  | px\_MCVideo\_ID\_User\_A | The user's MCVideo ID |  | MCVIDEO |
|  | px\_MCData\_ID\_User\_A | The user's MCData ID |  | MCDATA |
| KmsUri | tsc\_MCX\_KMS\_Hostname | The URI of the KMS to which the request is sent |  |  |
| Time | any value | Date/time that the request is made by the client |  |  |
| ClientId | any value if present | A string representing the client |  |  |
| DeviceId | any value if present | A string representing the device |  |  |
| ClientReqUrl | URI with same path as in the request URI of the HTTP request | The resource URI to which the HTTP POST request is sent |  |  |
| KrrList | not present |  |  |  |
| ClientError | not present |  |  |  |
| **Signature** |  |  |  |  |
| **SignedInfo** |  |  |  |  |
| CanonicalizationAlgorithm | "http://www.w3.org/TR/2001/REC-xml-c14n-20010315" | XML Signature processing |  |  |
| SignatureAlgorithm | "http://www.w3.org/2001/04/xmldsig-more#hmac-sha256" | Hashing algorithm to be applied to sign the SignedInfo with the key given in the KeyInfo |  |  |
| Reference |  |  |  |  |
| URI | URI referring to the Id of the request | same value as the Id attribute of the request with leading "#" |  |  |
| DigestAlgorithm | "http://www.w3.org/2001/04/xmlenc#sha256" | Hashing algorithm applied to sign the data object |  |  |
| DigestValue | Hash signing the data object (referred to by the URI) |  |  |  |
| SignatureValue | Hash signing the SignedInfo;  shall be validated by the SS | The signing key is derived from the InK (px\_MCX\_InK) according to TS 33.180 [94] Annex F.1.4 with  FC = 0x52  XPK-ID = InK-ID (px\_MCX\_InK\_ID) |  |  |
| KeyInfo |  |  |  |  |
| KeyName | base64 encoded InK-ID (px\_MCX\_InK\_ID) |  |  |  |

### 5.5.5 Default MCPTT call control Off-network messages and other information elements

#### 5.5.5.1 GROUP CALL PROBE

Table 5.5.5.1-1: GROUP CALL PROBE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.379 [9] Table 15.1.2.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| MCPTT group ID | px\_MCPTT\_Group\_A\_ID |  |  |

#### 5.5.5.2 GROUP CALL ANNOUNCEMENT

##### 5.5.5.2.1 GROUP CALL ANNOUNCEMENT from the UE

Table 5.5.5.2.1-1: GROUP CALL ANNOUNCEMENT from the UE

|  |  |  |  |
| --- | --- | --- | --- |
| 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 |
| FA | IE for when an active Functional Alias is used |
| Multi-Talker | IE for when a Multi Talker call is active |
| ACK | Message requests a Floor Ack |
| NOTE: For further conditions see table 5.5.1-1 | |

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.

#### 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 UE | The SSRC of the floor participant sending the message. |  |
|  | The SSRC of the message sender |  | OFF-NETWORK |
| name | MCPT |  |  |
| Floor priority | Not present or Any allowed value | If present, a value between ‘0’ and ‘255’ where '0' is the lowest priority  If the Floor Priority field is not included in the message the default priority (='0') is used as the Floor Priority value  The max floor priority that can be requested in a Floor Request message is negotiated between the MCPTT client and the controlling MCPTT function using the "mc\_priority" fmtp parameter e.g. at call setup |  |
| User ID | Not present |  |  |
| User ID |  |  | OFF-NETWORK |
| User ID | px\_MCPTT\_ID\_User\_A | The MCPTT User ID of the floor participant requesting the floor. |  |
| Track Info | Not present | The MCPTT call does not involve a non-controlling MCPTT function |  |
| Floor Indicator |  |  |  |
| Floor Indicator | 10000x0000000000 | Normal call: x:=1 if pc\_MCPTT\_FloorRequestQueueing = “true”,  x:=0 otherwise |  |
|  | 00010x0000000000 | Emergency call: x:=1 if pc\_MCPTT\_FloorRequestQueueing = “true”,  x:=0 otherwise | EMERGENCY-CALL |
|  | 00001x0000000000 | Imminent Peril call: x:=1 if pc\_MCPTT\_FloorRequestQueueing = “true”,  x:=0 otherwise | IMMPERIL-CALL |
| Functional Alias | Not present |  |  |
|  | px\_MCPTT\_ID\_FA\_A | Functional Alias = URI | FA |
| Location | optional |  |  |
| Location Type | Any allowed value | See TS 24.380 [10] Table 8.2.3.21-3 |  |
| Location Value | Not present or Any allowed value | See TS 24.380 [10] Table 8.2.3.21-3.  Not present if Location Type is set to "Not provided" |  |
| Location |  |  | REL-15 |
| Location Type | Any allowed value | See TS 24.380 [10] Table 8.2.3.21-3 |  |
| Location Value | Not present or Any allowed value | See TS 24.380 [10] Table 8.2.3.21-3.  Not present if Location Type is set to "Not provided" |  |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| REL-15 | In effect when PICS "PICS FFS" is in effect |

#### 5.5.6.3 Floor Granted

Table 5.5.6.3-1: Floor Granted

| Derivation Path: 24.380 [10], Table 8.2.5-1. | | | |
| --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Condition |
| RTCP header |  |  |  |
| Subtype | 00001 | Floor Granted with acknowledgment not required |  |
|  | 10001 | Floor Granted with acknowledgment required | ACK |
| SSRC | The SSRC of the SS | The SSRC of the floor control server |  |
|  | The SSRC of the message sender | The SSRC of the floor arbitrator | OFF-NETWORK |
| name | MCPT |  |  |
| Duration |  |  |  |
| Duration | "00000000 10000000" | 128 sec (an arbitrary value) |  |
| SSRC of granted floor participant | The SSRC of the intended recipient of the message |  |  |
| Floor priority | Not present | If the Floor Priority field is not included in the message the default priority (='0') is used as the Floor Priority value |  |
| User ID | Not present |  |  |
| User ID |  |  | OFF-NETWORK |
| User ID | px\_MCPTT\_ID\_User\_A | The MCPTT User ID of the floor participant granted the floor. |  |
| Queue Size | Not present |  |  |
| Queue Size | "0" | the number of queued MCPTT clients in the MCPTT call | OFF-NETWORK |
| SSRC of queued floor participant | Not present |  |  |
| Queued User ID | Not present |  |  |
| Queue Info | Not present |  |  |
| Track Info | Not present | The MCPTT call does not involve a non-controlling MCPTT function |  |
| Floor Indicator |  |  |  |
| Floor Indicator | 1000010000000000 | Normal call, queueing supported |  |
|  | 0001010000000000 | Emergency call, queueing supported | EMERGENCY-CALL |
|  | 0000110000000000 | Imminent peril call, queueing supported | IMMPERIL-CALL |

#### 5.5.6.4 Floor Deny

Table 5.5.6.4-1: Floor Deny

|  |  |  |  |
| --- | --- | --- | --- |
| 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 |  |
|  | 10011 | Floor Deny with acknowledgment required | ACK |
| SSRC | The SSRC of the SS | The SSRC of the floor control server |  |
|  | The SSRC of the message sender | The SSRC of the floor arbitrator | OFF-NETWORK |
| name | MCPT |  |  |
| Reject Cause |  |  |  |
| Reject Cause | "1" | Cause #1 - Another MCPTT client has permission |  |
| Reject Phrase | "Another MCPTT client has permission" | An additional text string explaining the reason for rejecting the floor request. |  |
| User ID | Not present |  |  |
| User ID |  |  | OFF-NETWORK |
| User ID | px\_MCPTT\_ID\_User\_A | The MCPTT User ID of the floor participant being denied floor request. |  |
| Track Info | Not present | The MCPTT call does not involve a non-controlling MCPTT function |  |
| Floor Indicator |  |  |  |
| Floor Indicator | 1000010000000000 | Normal call, queueing supported |  |
|  | 0001010000000000 | Emergency call, queueing supported | EMERGENCY-CALL |
|  | 000110000000000 | Imminent peril call, queueing supported | IMMPERIL-CALL |

#### 5.5.6.5 Floor Release

Table 5.5.6.5-1: Floor Release

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.380 [10], Table 8.2.7-1. | | | |
| Information Element | Value/remark | Comment | Condition |
| RTCP header |  |  |  |
| Subtype | x0100 | Floor Release with x=0,1 depending on the UE implementation;  x=0: Acknowledgment is not required  x=1: Acknowledgment is required |  |
| SSRC | The SSRC of the UE | The SSRC of the floor participant sending the message |  |
|  | The SSRC of the message sender |  | OFF-NETWORK |
| name | MCPT |  |  |
| User ID | Not present |  |  |
| User ID |  |  | OFF-NETWORK |
| User ID | px\_MCPTT\_ID\_User\_A | The MCPTT User ID of the floor participant releasing the floor. |  |
| Track Info | Not present | The MCPTT call does not involve a non-controlling MCPTT function |  |
| Floor Indicator |  |  |  |
| Floor Indicator | 10000x0000000000 | Normal call x:=1 if pc\_MCPTT\_FloorRequestQueueing = “true”,  x:=0 otherwise |  |
|  | 00010x0000000000 | Emergency call: x:=1 if pc\_MCPTT\_FloorRequestQueueing = “true”,  x:=0 otherwise | EMERGENCY-CALL |
|  | 00001x0000000000 | Imminent Peril call: x:=1 if pc\_MCPTT\_FloorRequestQueueing = “true”,  x:=0 otherwise | IMMPERIL-CALL |

#### 5.5.6.6 Floor Idle

Table 5.5.6.6-1: Floor Idle

|  |  |  |  |
| --- | --- | --- | --- |
| 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 |  |
|  | 10101 | Floor Idle with acknowledgment required | ACK |
| SSRC | The SSRC of the SS | The SSRC of the floor control server |  |
|  | The SSRC of the message sender | The SSRC of the floor arbitrator | OFF-NETWORK |
| name | MCPT |  |  |
| Message Sequence Number |  |  |  |
| Message Sequence Number | The value sent in the previous Floor Idle message, if any, increased with 1 | Any value between '0' and '65535'  When the '65535' value is reached, the <Message Sequence Number> value starts from '0' again |  |
| Track Info | Not present | The MCPTT call does not involve a non-controlling MCPTT function |  |
| Floor Indicator |  |  |  |
| Floor Indicator | 1000010000000000 | Normal call, queueing supported |  |
|  | 0001010000000000 | Emergency call, queueing supported | EMERGENCY-CALL |
|  | 000110000000000 | Imminent peril call, queueing supported | IMMPERIL-CALL |

#### 5.5.6.7 Floor Taken

Table 5.5.6.7-1: Floor Taken

| 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 |  |
|  | 10010 | Floor Taken with acknowledgment required | ACK |
| SSRC | The SSRC of the SS | The SSRC of the floor control server |  |
|  | The SSRC of the message sender | The SSRC of the floor arbitrator | OFF-NETWORK |
| name | MCPT |  |  |
| User ID | Not present |  |  |
| User ID |  |  | OFF-NETWORK |
| User ID | px\_MCPTT\_ID\_User\_A | The MCPTT user ID of the floor participant sending the Floor Taken message |  |
| Granted Party's Identity |  |  |  |
| Granted Party's Identity | px\_MCPTT\_ID\_User\_B | The MCPTT User ID of the floor participant being granted the floor. |  |
| Granted Party's Identity | Not Present |  | Multi-Talker |
| Permission to Request the Floor |  |  |  |
| Permission to Request the Floor | "1" | The receiver is permitted to request floor |  |
| Message Sequence Number |  |  |  |
| Message Sequence Number | The value sent in the previous Floor Taken message, if any, increased with 1 | Any value between '0' and '65535'  When the '65535' value is reached, the <Message Sequence Number> value starts from '0' again |  |
| Track Info | Not present | The MCPTT call does not involve a non-controlling MCPTT function |  |
| Floor Indicator |  |  |  |
| Floor Indicator | 1000010000000000 | Normal call, queueing supported |  |
|  | 0001010000000000 | Emergency call, queueing supported | EMERGENCY-CALL |
|  | 000110000000000 | Imminent peril call, queueing supported | IMMPERIL-CALL |
| Floor Indicator |  |  | Multi-Talker |
| Floor Indicator | 1000010010000000 | Normal call, queueing supported, multi-talker |  |
|  | 0001010010000000 | Emergency call, queueing supported, multi-talker | EMERGENCY-CALL |
|  | 0001100010000000 | Imminent peril call, queueing supported, multi-talker | IMMPERIL-CALL |
| 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 |  |  |
|  | 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 |  |
| 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 SS | The SSRC of the floor control server |  |
|  | The SSRC of the message sender | The SSRC of the floor arbitrator | OFF-NETWORK |
| name | MCPT |  |  |
| Reject Cause |  |  |  |
| Reject Cause | "4" | Cause#4 - Media Burst pre-empted |  |
| Reject Phrase | "Media Burst pre-empted" | a text string encoded the text string in the SDES item CNAME as specified in IETF RFC 3550 [76], clause 6.5.1. |  |
| Track Info | Not present | The MCPTT call does not involve a non-controlling MCPTT function |  |
| Floor Indicator |  |  |  |
| Floor Indicator | 1000010000000000 | Normal call, queueing supported |  |
|  | 0001010000000000 | Emergency call, queueing supported | EMERGENCY-CALL |
|  | 000110000000000 | Imminent peril call, queueing supported | IMMPERIL-CALL |

#### 5.5.6.9 Floor Queue Position Request

Table 5.5.6.9-1: Floor Queue Position Request

|  |  |  |  |
| --- | --- | --- | --- |
| 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 UE | The SSRC of the floor participant sending the message. |  |
|  | The SSRC of the message sender |  | OFF-NETWORK |
| name | MCPT |  |  |
| User ID | Not present |  |  |
| User ID |  |  | OFF-NETWORK |
| User ID | px\_MCPTT\_ID\_User\_A | The MCPTT ID of the floor participant requesting the information. |  |
| Track Info | Not present | The MCPTT call does not involve a non-controlling MCPTT function |  |

#### 5.5.6.10 Floor Queue Position Info

Table 5.5.6.10-1: Floor Queue Position Info

|  |  |  |  |
| --- | --- | --- | --- |
| 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 |  |
|  | 11001 | Floor Queue Position Info with acknowledgment required | ACK |
| SSRC | The SSRC of the SS | The SSRC of the floor control server |  |
|  | The SSRC of the message sender | The SSRC of the floor arbitrator | OFF-NETWORK |
| name | MCPT |  |  |
| User ID | Not present |  |  |
| User ID |  |  | OFF-NETWORK |
| User ID | px\_MCPTT\_ID\_User\_B | the MCPTT ID of the floor participant sending the Floor Queue Position Info message |  |
| SSRC of queued floor participant | Not present |  |  |
|  | The SSRC of the message recepient | The SSRC field carries the SSRC of the queued floor participant | OFF-NETWORK |
| Queued User ID | Not present |  |  |
| Queued User ID |  |  | OFF-NETWORK |
| Queued User ID | px\_MCPTT\_ID\_User\_A | the MCPTT ID of the queued floor participant |  |
| Queue Info |  |  |  |
| Queue Position Info | "1" |  |  |
| Queue Priority Level | "0" |  |  |
| Track Info | Not present | The MCPTT call does not involve a non-controlling MCPTT function |  |
| Floor Indicator |  |  |  |
| Floor Indicator | 1000010000000000 | Normal call, queueing supported |  |
|  | 0001010000000000 | Emergency call, queueing supported | EMERGENCY-CALL |
|  | 000110000000000 | Imminent peril call, queueing supported | IMMPERIL-CALL |

#### 5.5.6.11 Floor Ack

Table 5.5.6.11-1: Floor Ack

|  |  |  |  |
| --- | --- | --- | --- |
| 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. | DOWNLINK |
|  | The SSRC of the UE | The SSRC of the floor participant sending the message | 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’ with ‘xxxx’ being the lower four bits of the subtype of the message to be acknowledged | Message Type of the Floor Control message which requested the acknowledgment |  |
| Track Info | Not present | The MCPTT call does not involve a non-controlling MCPTT function |  |

|  |  |
| --- | --- |
| 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 SS | The SSRC of the floor participant sending the message. |  |
|  | The SSRC of the message sender |  | OFF-NETWORK |
| name | MCPT |  |  |
| User ID |  |  |  |
| User ID | px\_MCPTT\_ID\_User\_B | The MCPTT User ID of the floor participant releasing the floor. |  |
| Floor Indicator |  |  |  |
| Floor Indicator | 1000010010000000 | Normal call, queueing, multi-talker |  |
|  | 0001010010000000 | Emergency call, queueing supported, multi-talker | EMERGENCY-CALL |
|  | 0001100010000000 | Imminent peril call, queueing supported, multi-talker | IMMPERIL-CALL |

#### 5.5.6.12 Connect

Table 5.5.6.12-1: Connect

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.380 [10], Table 8.3.4-1. | | | |
| Information Element | Value/remark | Comment | Condition |
| RTCP header |  |  |  |
| Subtype | 00000 | Connect with acknowledgment required |  |
|  | 10000 | Connect with acknowledgment required | ACK |
| SSRC | The SSRC of the SS |  |  |
| name | MCPC |  |  |
| MCPTT Session Identity field |  |  |  |
| Session Type | “00000000” | No session type |  |
|  | “00000001” | private | PRIVATE-CALL |
|  | "00000011" | prearranged | GROUP-CALL |
|  | “00000100” | chat | CHAT-GROUP-CALL |
| MCPTT Session Identity | tsc\_MCX\_SessionID\_B | SIP URI, which identifies the MCPTT session between the MCPTT client and the controlling MCPTT function |  |
| MCPTT Group Identity field | Not Present |  | PRIVATE-CALL |
| MCPTT Group Identity field |  |  | GROUP-CALL |
| MCPTT Group Identity | px\_MCPTT\_Group\_A\_ID | a URI, which identifies the MCPTT group |  |
| Media Streams |  |  |  |
| Media Stream field | "1" | 8 bit parameter giving the number of the" m=audio" m-line negotiated in the pre-established session |  |
| Control Channel | "2" | 8 bit parameter giving the number of the "m=application" m-line negotiated in the pre-established session |  |
|  | "0" | no floor control | WITHOUT\_FLOORCONTROL |
| Warning Text field | Not Present |  |  |
| Answer State field |  |  |  |
| Answer State | "1" | confirmed |  |
| Inviting MCPTT User Identity field |  |  |  |
| Inviting MCPTT User Identity | px\_MCPTT\_ID\_User\_B | URI, which identifies the inviting MCPTT user |  |
| PCK I\_MESSAGE field | Not Present |  |  |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| WITHOUT\_FLOORCONTROL | There shall be no floor control during the call  (e.g. in case of private or first-to-answer call) |
| For further conditions see table 5.5.1-1 | |

#### 5.5.6.13 Disconnect

Table 5.5.6.13-1: Disconnect

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.380 [10], Table 8.3.5-1. | | | |
| Information Element | Value/remark | Comment | Condition |
| RTCP header |  |  |  |
| Subtype | 00001 | Disconnect with acknowledgment not required |  |
|  | 10001 | Disconnect with acknowledgment required | ACK |
| SSRC | The SSRC of the SS |  |  |
| name | MCPC |  |  |
| MCPTT Session Identity field | Same MCPTT Session Identity as used in the connect message at call establishment | TS 24.380 [10] clause 9.3.2.4.5 |  |

#### 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 |  |  |
| 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 SS | The SSRC of the floor control server |  |
| name | MCMC |  |  |
| MCPTT Group ID | px\_MCPTT\_Group\_A\_ID | The group ID of the call |  |
| TMGI |  |  |  |
| MBMS Service ID | "0F0F0F" | The selected value is randomly chosen - a 6 digit hexadecimal number between 000000 and  FFFFFF (see TS 23.003 [69] clause 15.2.  The coding of the MBMS Service ID is the responsibility of each administration |  |
| MCC | The same value as for PLMN1 specified in Table 5.5.8.1-x | Mobile Country Code |  |
| MNC | The same value as for PLMN1 specified in Table 5.5.8.1-x | Mobile Network Code |  |
| MBMS Subchannel |  |  |  |
| Audio m-line Number | "1" | The number of the "m=audio" m-line in the SIP MESSAGE request announcing the MBMS bearer |  |
| Floor m-line Number | "2" | The number of the "m=application" m-line in the SIP MESSAGE request announcing the MBMS bearer.  The <Floor m-line Number> value is set to "0" when the same subchannel is used for media and for floor control. |  |
| IP version | "0" | '0' = IP version 4  '1' = IP version 6  All other values are reserved for future use |  |
| 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 SS | The SSRC of the floor control server |  |
| name | MCMC |  |  |
| MCPTT Group ID | px\_MCPTT\_Group\_A\_ID | The group ID of the call |  |

#### 5.5.6.17 Application Paging

Table 5.5.6.17-1: Application Paging

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: 24.380 [10], Table 8.4.6-1. | | | |
| Information Element | Value/remark | Comment | Condition |
| RTCP header |  |  |  |
| Subtype | 00010 | Application Paging |  |
| SSRC | The SSRC of the SS | The SSRC of the participating MCPTT function. |  |
| name | MCMC |  |  |
| MCPTT Group ID | px\_MCPTT\_Group\_A\_ID | The group ID of the call |  |

#### 5.5.6.18 Bearer Announcement

Table 5.5.6.18-1: Bearer Announcement

|  |  |  |  |
| --- | --- | --- | --- |
| 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 MCX group management messages and other information elements

#### 5.5.7.1 MCPTT Group Configuration

The structure of a group configuration document is specified in TS 24.481 [11] clause 7, single MCPTT group configuration parameters are defined in TS 24.483 [13] clause 6.3.

The structure of the configuration document is based on several XML schemas. To distinguish the schemas the prefixes of their corresponding name spaces are used in the 'Information Element' column as according to table 7.2.2-2 of TS 24.481 [11].

Table 5.5.7.1-1: MCPTT Group Configuration Defaults

| Derivation Path: TS 24.481 [11] clause 7.2.2 | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Information Element | | Value/remark | | Comment | | Reference | | Condition | |
| **list-service[1]** | |  | | **Group 1** | |  | |  | |
| **uri attribute** | | px\_MCPTT\_Group\_A\_ID | | Value is a "uri" attribute specified in OMA OMA-TS-XDM\_Group-V1\_1 | | TS 24.483 [13] clause 6.2.7 | |  | |
| **display-name** | | px\_MCPTT\_Group\_A\_Name | | Value is a <display-name> element specified in OMA OMA-TS-XDM\_Group-V1\_1 | | TS 24.483 [13] clause 6.2.8 | |  | |
| **list** | |  | |  | |  | |  | |
| entry[1] | |  | | group member 1 | |  | |  | |
| uri attribute | | px\_MCPTT\_ID\_User\_A | | Indicates an MCPTT user identity (MCPTT ID) which is a globally unique identifier within the MCPTT service that represents the MCPTT user | | TS 24.483 [13] clause 6.2.11 | |  | |
| display-name | | Not present | |  | |  | |  | |
| mcpttgi:user-priority | | "3" | | Indicates the user priority of the MCPTT group member | | TS 24.483 [13] clause 6.2.12 | |  | |
| mcpttgi:participant-type | | px\_MCX\_User\_A\_ParticipantType | | Participant type of the MCPTT group | | TS 24.483 [13] clause 6.2.13 | |  | |
| mcpttgi:multi-talker-allowed | | Present | | Presence of the <multi-talker-allowed> element indicates that the MCPTT group member is authorized for multi-talker floor control in a MCPTT group call of the MCPTT group in on-network MCPTT procedures when the MCPTT group supports multi-talker-control. Absence of the <multi-talker-allowed> element indicates that the MCPTT group member identified by the <entry> element is not authorized for multi-talker floor control | |  | |  | |
| entry[2] | |  | | group member 2 | |  | |  | |
| uri attribute | | px\_MCPTT\_ID\_User\_B | | Indicates an MCPTT user identity (MCPTT ID) which is a globally unique identifier within the MCPTT service that represents the MCPTT user | | TS 24.483 [13] clause 6.2.11 | |  | |
| display-name | | Not present | |  | |  | |  | |
| mcpttgi:user-priority | | "2" | | Indicates the user priority of the MCPTT group member | | TS 24.483 [13] clause 6.2.12 | |  | |
| mcpttgi:participant-type | | px\_MCX\_User\_B\_ParticipantType | | Participant type of the MCPTT group | | TS 24.483 [13] clause 6.2.13 | |  | |
| mcpttgi:multi-talker-allowed | | Present | | Presence of the <multi-talker-allowed> element indicates that the MCPTT group member is authorized for multi-talker floor control in a MCPTT group call of the MCPTT group in on-network MCPTT procedures when the MCPTT group supports multi-talker-control. Absence of the <multi-talker-allowed> element indicates that the MCPTT group member identified by the <entry> element is not authorized for multi-talker floor control | |  | |  | |
| entry[3] | |  | | group member 3 | |  | |  | |
| uri attribute | | px\_MCPTT\_ID\_User\_C | | Indicates an MCPTT user identity (MCPTT ID) which is a globally unique identifier within the MCPTT service that represents the MCPTT user | | TS 24.483 [13] clause 6.2.11 | |  | |
| display-name | | Not present | |  | |  | |  | |
| mcpttgi:user-priority | | "1" | | Indicates the user priority of the MCPTT group member | | TS 24.483 [13] clause 6.2.12 | |  | |
| mcpttgi:participant-type | | px\_MCX\_User\_C\_ParticipantType | | Participant type of the MCPTT group | | TS 24.483 [13] clause 6.2.13 | |  | |
| mcpttgi:multi-talker-allowed | | Present | | Presence of the <multi-talker-allowed> element indicates that the MCPTT group member is authorized for multi-talker floor control in a MCPTT group call of the MCPTT group in on-network MCPTT procedures when the MCPTT group supports multi-talker-control. Absence of the <multi-talker-allowed> element indicates that the MCPTT group member identified by the <entry> element is not authorized for multi-talker floor control | |  | |  | |
| **cp:ruleset** | |  | |  | |  | |  | |
| cp:rule | |  | |  | |  | |  | |
| cp:id attribute | | "rule1" | |  | |  | |  | |
| cp:actions | |  | |  | |  | |  | |
| cp:on-network-allow-getting-member-list | | "true" | | Indicates that the identity is allowed to get the MCS group member list of the MCS group in on-network procedures | |  | |  | |
| cp:allow-initiate-conference | | "true" | |  | |  | |  | |
| cp:join-handling | | "true" | |  | |  | |  | |
| cp:allow-MCPTT-emergency-call | | "true" | | Indicates whether an MCPTT emergency group call is permitted on the MCPTT group | | TS 24.483 [13] clause 6.2.19 | |  | |
| cp:allow-imminent-peril-call | | "true" | | Indicates whether an MCPTT imminent peril group call is permitted on the MCPTT group | | TS 24.483 [13] clause 6.2.20 | |  | |
| cp:allow-MCPTT-emergency-alert | | "true" | | Indicates whether an MCPTT emergency alert is possible on the MCPTT group | | TS 24.483 [13] clause 6.2.21 | |  | |
| cp:on-network-allow-getting-affiliation-list | | "true" | | Indicates that the identity is allowed to get the list of MCPTT users affiliated to the MCPTT group in on-network MCPTT procedures | |  | |  | |
| cp:on-network-allow-conference-state | | "true" | | indicates that the identity is allowed to subscribe to the conference event package of an MCPTT group session of the MCPTT group in on-network MCPTT procedures | |  | |  | |
| **oxe:supported-services** | |  | |  | |  | |  | |
| oxe:service | |  | |  | | TS 24.481 [11] | |  | |
| oxe:enabler | | "urn:urn-7:3gpp-service.ims.icsi.mcptt" | |  | |  | |  | |
| oxe:group-media | |  | |  | |  | |  | |
| mcpttgi:mcptt-speech | | Present | |  | |  | |  | |
| **mcpttgi:owner** | | px\_MCX\_Group\_A\_Owner\_Organization | | Group’s owner (Mission Critical Organisation). | | TS 24.483 [13] clause 6.2.15 | |  | |
| **mcpttgi:preferred-voice-encodings** | |  | |  | |  | |  | |
| mcpttgi:encoding- | |  | |  | |  | |  | |
| mcpttgi:name[1] | | px\_MCPTT\_Group\_A\_preferred\_VCodec | | Preferred voice codec is a RTP payload. MCPTT clients shall support the AMR-WB codec. | | RFC 4566 [27]  TS 26.171 [66]  TS 24.483 [13] clause 6.2.16 | |  | |
| **mcpttgi:level-within-group-hierarchy** | | "0" | | Indicates the level within a group hierarchy (only applicable for group-broadcast group). | | TS 24.483 [13] clause 6.2.17 | |  | |
| **mcpttgi:level-within-user-hierarchy** | | "0" | | Indicates the level within user hierarchy (only applicable for user-broadcast group). | | TS 24.483 [13] clause 6.2.18 | |  | |
| **mcpttgi:protect-media** | | "true" | | Indicates whether confidentiality and integrity of media is required on the MCPTT group | | TS 24.483 [13] clause 6.2.22 | |  | |
| **mcpttgi:protect-floor-control-signalling** | | "true" | | Indicates whether confidentiality and integrity of floor control signalling is required on the MCPTT group | | TS 24.483 [13] clause 6.2.23 | |  | |
| **mcpttgi:off-network-ProSe-layer-2-group-id** | | tsc\_MCX\_Group\_A\_ProSeLayer2GroupID | | Indicates the Prose layer-2 group ID | | TS 23.303 [68]  TS 24.483 [13] clause 6.2.27 | |  | |
| **mcpttgi:off-network-IP-multicast-address** | | "0.0.0.0" | | Indicates the ProSe group IP multicast address;the IP version is implicitly given by the notation of the IP address | | TS 23.303 [68]  TS 24.483 [13] clause 6.2.28 | |  | |
| **mcpttgi:off-network-ProSe-relay-service-code** | | "123456" | | Indicates the connectivity service that the ProSe UE-to-network relay provides to public safety applications | | TS 23.303 [68]  TS 24.483 [13] clause 6.2.29 | |  | |
| **mcpttgi:off-network-in-progress-emergency-state-cancellation-timeout** | | "PT18H12M15S" | | Indicates the timeout value for the cancellation of an in progress emergency for an MCPTT group call. "PT18H12M15S" corresponds to 65535 seconds what is maximum allowed value according to TS 24.483 [13] | | TS 24.483 [13] clause 6.2.31 | |  | |
| **mcpttgi:off-network-in-progress-imminent-peril-state-cancellation-timeout** | | "PT18H12M15S" | | Indicates the timeout value for the cancellation of an in progress imminent peril for an MCPTT group call. "PT18H12M15S" corresponds to 65535 seconds what is maximum allowed value according to TS 24.483 [13] | | TS 24.483 [13] clause 6.2.32 | |  | |
| **mcpttgi:off-network-hang-timer** | | "PT5S" | | Indicates the group call hang timer. "PT5S" corresponds to 5 seconds | | TS 24.483 [13] clause 6.2.33 | |  | |
| **mcpttgi:off-network-maximum-duration** | | "PT1M" | | Indicates the max duration of group calls. "PT1M" corresponds to 1 minute | | TS 24.483 [13] clause 6.2.34 | |  | |
| **mcpttgi:off-network-queue-usage** | | "true" | | Indicates if queuing is enabled or not | | TS 24.483 [13] clause 6.2.34A | |  | |
| **mcpttgi:off-network-ProSe-signalling-PPPP** | | "1" | | Indicates the default ProSe Per-Packet Priority (PPPP) value | | TS 24.483 [13] clause 6.2.36 | |  | |
| **mcpttgi:off-network-ProSe-media-PPPP** | | "1" | | Indicates the default ProSe Per-Packet Priority (PPPP) value | | TS 24.483 [13] clause 6.2.37 | |  | |
| **mcpttgi:off-network-ProSe-emergency-call-signalling-PPPP** | | "8" | | Indicates the default ProSe Per-Packet Priority (PPPP) value | | TS 24.483 [13] clause 6.2.38 | |  | |
| **mcpttgi:off-network-ProSe-emergency-call-media-PPPP** | | "8" | | Indicates the default ProSe Per-Packet Priority (PPPP) value | | TS 24.483 [13] clause 6.2.39 | |  | |
| **mcpttgi:off-network-ProSe-imminent-peril-call-signalling-PPPP** | | "7" | | Indicates the default ProSe Per-Packet Priority (PPPP) value | | TS 24.483 [13] clause 6.2.40 | |  | |
| **mcpttgi:off-network-ProSe-imminent-peril-call-media-PPPP** | | "7" | | Indicates the default ProSe Per-Packet Priority (PPPP) value | | TS 24.483 [13] clause 6.2.41 | |  | |
| **mcpttgi:multi-talker-control** | | "false" | | "true" indicates that multi-talker control is enabled for the group  "false" indicates that multi-talker control is disabled for the group | |  | |  | |
| **mcpttgi:max-number-simultaneous-talkers** | | "1" | | Indicates the maximum number of parallel talkers in a MCPTT group session in on-network MCPTT procedures | |  | |  | |
| **mcpttgi:audio-mixing-entity** | | Not present | | Absence of the <audio-mixing-entity> element indicates that audio mixing is performed in the network | |  | |  | |

#### 5.5.7.2 MCVideo Group Configuration

The structure of a group configuration document is specified in TS 24.481 [11] clause 7, single MCVideo group configuration parameters are defined in TS 24.483 [13] clause 6.

Table 5.5.7.2-1: MCVideo Group Configuration Defaults

| Derivation Path: TS 24.481 [11] clause 7.2.2 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **list-service[1]** |  | Group 1 |  |  |
| **uri attribute** | px\_MCVideo\_Group\_A\_ID | Value is a "uri" attribute specified in OMA OMA-TS-XDM\_Group-V1\_1 | TS 24.483 [13] clause 6.2.7 |  |
| **display-name** | px\_MCVideo\_Group\_A\_Name | Value is a <display-name> element specified in OMA OMA-TS-XDM\_Group-V1\_1 | TS 24.483 [13] clause 6.2.8 |  |
| **list** |  |  |  |  |
| entry[1] |  | group member 1 |  |  |
| uri attribute | px\_MCVideo\_ID\_User\_A | Indicates an MCVideo user identity (MCVideo ID) which is a globally unique identifier within the MCVideo service that represents the MCVideo user | TS 24.483 [13] clause 6.2.11 |  |
| display-name | Not present |  |  |  |
| mcpttgi:user-priority | "3" | Indicates the user priority of the MCVideo group member | TS 24.483 [13] clause 6.2.12 |  |
| mcpttgi:participant-type | px\_MCX\_User\_A\_ParticipantType | Participant type of the MCVideo group | TS 24.483 [13] clause 6.2.13 |  |
| rl:mcvideo-mcvideo-id |  |  |  |  |
| uri attribute | px\_MCVideo\_ID\_User\_A |  |  |  |
| entry[2] |  | Group member 2 |  |  |
| uri attribute | px\_MCVideo\_ID\_User\_B | Indicates an MCVideo user identity (MCVideo ID) which is a globally unique identifier within the MCVideo service that represents the MCVideo user | TS 24.483 [13] clause 6.2.11 |  |
| display-name | Not present |  |  |  |
| mcpttgi:user-priority | "2" | Indicates the user priority of the MCVideo group member | TS 24.483 [13] clause 6.2.12 |  |
| mcpttgi:participant-type | px\_MCX\_User\_B\_ParticipantType | Participant type of the MCVideo group | TS 24.483 [13] clause 6.2.13 |  |
| rl:mcvideo-mcvideo-id |  |  |  |  |
| uri attribute | px\_MCVideo\_ID\_User\_B |  |  |  |
| entry[3] |  | Group member 3 |  |  |
| uri attribute | px\_MCVideo\_ID\_User\_C | Indicates an MCVideo user identity (MCVideo ID) which is a globally unique identifier within the MCVideo service that represents the MCVideo user | TS 24.483 [13] clause 6.2.11 |  |
| display-name | Not present |  |  |  |
| mcpttgi:user-priority | "1" | Indicates the user priority of the MCVideo group member | TS 24.483 [13] clause 6.2.12 |  |
| mcpttgi:participant-type | px\_MCX\_User\_C\_ParticipantType | Participant type of the MCVideo group | TS 24.483 [13] clause 6.2.13 |  |
| rl:mcvideo-mcvideo-id |  |  |  |  |
| uri attribute | px\_MCVideo\_ID\_User\_C |  |  |  |
| **cp:ruleset** |  |  |  |  |
| cp:rule |  |  |  |  |
| cp:id attribute | "rule1" |  |  |  |
| cp:actions |  |  |  |  |
| mcpttgi:on-network-allow-getting-member-list | "true" | Indicates that the identity is allowed to get the MCS group member list of the MCS group in on-network procedures. |  |  |
| mcpttgi:mcvideo-allow-emergency-call | "true" | Indicates that the identity is allowed to request an MCVideo-emergency call on the MCVideo group. |  |  |
| mcpttgi:mcvideo-allow-emergency-alert | "true" | Indicates that the identity is allowed to request an MCVideo-emergency alert on the MCVideo group. |  |  |
| mcpttgi:mcvideo-allow-imminent-peril-call | "true" | Indicates that the identity is allowed to request an MCVideo imminent peril call on the MCVideo group. |  |  |
| mcpttgi:mcvideo-on-network-allow-conference-state | "true" | Indicates that the identity is allowed to subscribe to the conference event package of an MCVideo group session of the MCVideo group in on-network MCVideo procedures. |  |  |
| mcpttgi:mcvideo-on-network-allow-getting-affiliation-list | "true" | Indicates that the identity is allowed to get the list of MCVideo users affiliated to the MCVideo group in on-network MCVideo procedures. |  |  |
| **oxe:supported-services** |  |  |  |  |
| oxe:service |  |  |  |  |
| oxe:enabler | "urn:urn-7:3gpp-service.ims.icsi.mcvideo" | String defining an enabler |  |  |
| oxe:group-media |  |  |  |  |
| oxe:mcvideo-video-media |  |  |  |  |
| **mcpttgi:off-network-ProSe-layer-2-group-id** | tsc\_MCX\_Group\_A\_ProSeLayer2GroupID | Indicates the Prose layer-2 group ID | TS 23.303 [68]  TS 24.483 [13] clause 6.2.27 |  |
| **mcpttgi:off-network-IP-multicast-address** | "0.0.0.0" | Indicates the ProSe group IP multicast address;the IP version is implicitly given by the notation of the IP address | TS 23.303 [68]  TS 24.483 [13] clause 6.2.28 |  |
| **mcpttgi:off-network-ProSe-relay-service-code** | "123456" | Indicates the connectivity service that the ProSe UE-to-network relay provides to public safety applications | TS 23.303 [68]  TS 24.483 [13] clause 6.2.29 |  |
| **mcpttgi:owner** | px\_MCX\_Group\_A\_Owner\_Organization | Group’s owner (Mission Critical Organisation). | TS 24.483 [13] clause 6.2.15 |  |
| **mcpttgi:level-within-group-hierarchy** | "0" | Indicates the level within a group hierarchy (only applicable for group-broadcast group). | TS 24.483 [13] clause 6.2.17 |  |
| **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 |  |
| **mcpttgi:mcvideo-off-network-ProSe-emergency-call-signalling-PPPP** | "8" | Indicates the default ProSe Per-Packet Priority (PPPP) value (as specified in 3GPP TS 23.303 [6]) for the MCVideo emerency group call signalling. | TS 24.483 [13] clause 6.2.52 |  |
| **mcpttgi:mcvideo-off-network-ProSe-imminent-peril-call-signalling-PPPP** | "7" | Indicates the default ProSe Per-Packet Priority (PPPP) value (as specified in 3GPP TS 23.303 [6]) for the MCVideo imminent peril group call signalling. | TS 24.483 [13] clause 6.2.54 |  |
| **mcpttgi:mcvideo-off-network-ProSe-media-PPPP** | "1" | Indicates the default ProSe Per-Packet Priority (PPPP) value | TS 24.483 [13] clause 6.2.51 |  |
| **mcpttgi:mcvideo-off-network-ProSe-emergency-call-media-PPPP** | "8" |  | TS 24.483 [13] clause 6.2.53 |  |
| **mcpttgi:mcvideo-off-network-ProSe-imminent-peril-call-media-PPPP** | "7" | Indicates the default ProSe Per-Packet Priority (PPPP) value (as specified in 3GPP TS 23.303 [6]) for the MCVideo imminent peril group call media. | TS 24.483 [13] clause 6.2.55 |  |
| **mcpttgi:mcvideo-off-network-maximum-duration** | "60 | Indicates the maximum duration of group calls |  |  |
| **mcpttgi:mcvideo-off-network-in-progress-emergency-state-cancellation-timeout** | "65535" | Indicates the timeout value for the cancellation of an in progress emergency in off-network MCVideo procedures |  |  |
| **mcpttgi:mcvideo-off-network-in-progress-imminent-peril-state-cancellation-timeout** | "65535" | Indicates the timeout value for the cancellation of an in progress imminent-peril group call in off-network MCVideo procedures |  |  |

#### 5.5.7.3 MCDATA Group Configuration

The structure of a group configuration document is specified in TS 24.481 [11] clause 7.

Single MCDATA group configuration parameters are defined in TS 24.483 [13] clause 6.3.

Table 5.5.7.3-1: MCDATA Group Configuration Defaults

| Derivation Path: TS 24.481 [11] clause 7.2.2 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **list-service[1]** |  | Group 1 |  |  |
| **uri attribute** | px\_MCDATA\_Group\_A\_ID | Value is a "uri" attribute specified in OMA OMA-TS-XDM\_Group-V1\_1 | TS 24.483 [13] clause 6.2.7 |  |
| **display-name** | px\_MCData \_Group\_A\_Name | Value is a <display-name> element specified in OMA OMA-TS-XDM\_Group-V1\_1 | TS 24.483 [13] clause 6.2.8 |  |
| **list** |  |  |  |  |
| entry[1] |  | group member 1 |  |  |
| uri attribute | px\_MCData\_ID\_User\_A | Indicates an MCData user identity (MCData ID) which is a globally unique identifier within the MCData service that represents the MCData user | TS 24.483 [13] clause 6.2.11 |  |
| display-name | Not present |  |  |  |
| mcpttgi:user-priority | "3" | Indicates the user priority of the MCData group member | TS 24.483 [13] clause 6.2.12 |  |
| mcpttgi:participant-type | px\_MCX \_User\_A\_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\_MCX \_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\_MCX \_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 |  |  |  |  |
| cp:id attribute | "rule1" |  |  |  |
| cp:actions |  |  |  |  |
| mcpttgi:on-network-allow-getting-member-list | "true" | Indicates that the identity is allowed to get the MCS group member list of the MCS group in on-network procedures. |  |  |
| mcpttgi:mcdata-on-network-allow-getting-affiliation-list | "true" | Indicates that the identity is allowed to get the list of MCData users affiliated to the MCData group in on-network MCData procedures |  |  |
| mcpttgi:mcdata-allow-transmit-data-in-this-group | "true" | Indicates that the identity is allowed to transmit data in this group |  |  |
| **oxe:supported-services** |  |  |  |  |
| oxe:service |  |  |  |  |
| oxe:enabler | "urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" | String defining an enabler |  |  |
| **mcpttgi:off-network-ProSe-layer-2-group-id** | tsc\_MCX\_Group\_A\_ProSeLayer2GroupID | Indicates the Prose layer-2 group ID | TS 23.303 [68]  TS 24.483 [13] clause 6.2.27 |  |
| **mcpttgi:off-network-IP-multicast-address** | "0.0.0.0" | Indicates the ProSe group IP multicast address;the IP version is implicitly given by the notation of the IP address | TS 23.303 [68]  TS 24.483 [13] clause 6.2.28 |  |
| **mcpttgi:off-network-ProSe-relay-service-code** | "123456" | Indicates the connectivity service that the ProSe UE-to-network relay provides to public safety applications | TS 23.303 [68]  TS 24.483 [13] clause 6.2.29 |  |
| **mcpttgi:owner** | px\_MCX\_Group\_A\_Owner\_Organization | Group’s owner (Mission Critical Organisation). | TS 24.483 [13] clause 6.2.15 |  |
| **mcpttgi:level-within-group-hierarchy** | "0" | Indicates the level within a group hierarchy (only applicable for group-broadcast group). | TS 24.483 [13] clause 6.2.17 |  |
| **mcpttgi:mcdata-enhanced-status-operational-values** |  | A list of operational values used for the enhanced status service and two text strings used to display a meaningful message to the user. |  |  |
| mcpttgi:status |  |  |  |  |
| id | "0" |  |  |  |
| mcpttgi:shortText |  |  |  |  |
| langType | "English" |  |  |  |
| langText | "going" |  |  |  |
| mcpttgi:description |  |  |  |  |
| langType | "English" |  |  |  |
| langText | "going to the operation site" |  |  |  |
| mcpttgi:status |  |  |  |  |
| id | "1" |  |  |  |
| mcpttgi:shortText |  |  |  |  |
| langType | "English" |  |  |  |
| langText | "arrived" |  |  |  |
| mcpttgi:description |  |  |  |  |
| langType | "English" |  |  |  |
| langText | "just arrived at the operation site" |  |  |  |
| **mcpttgi:level-within-user-hierarchy** | "0" | Indicates the level within user hierarchy (only applicable for user-broadcast group). | TS 24.483 [13] clause 6.2.18 |  |
| **mcpttgi:mcdata-on-network-group-priority** | "1" | Indicates the priority level of the group in on-network MCData procedures. Higher value indicates higher priority |  |  |
| **mcpttgi:mcdata-on-network-max-data-size-for-SDS** | "10000" | Indicates the maximum size of data (in bytes) that the originating MCData client is allowed to send to the MCData server for on-network SDS communications |  |  |
| **mcpttgi:mcdata-on-network-max-data-size-for-FD** | "10000" | Indicates the maximum size of data (in bytes) that the originating MCData client is allowed to send to the MCData server for on-network FD communications |  |  |
| **mcpttgi:mcdata-on-network-max-data-size-auto-recv** | "2000" | Indicates the maximum size of data (in bytes) which the MCData server always requests the terminating MCData client to automatically download for on-network FD communications using HTTP |  |  |
| **mcpttgi:mcdata-off-network-ProSe-signalling-PPPP** | "1" | Indicates the ProSe Per-Packet Priority value to be used when transmitting IP packets carrying signalling for a call on the MCData group in off-network MCData procedures |  |  |
| **mcpttgi:mcdata-off-network-ProSe-media-PPPP** | "1" | Indicates the ProSe Per-Packet Priority value to be used when transmitting IP packets carrying media for a call on the MCData group in off-network MCData procedures |  |  |

5.5.7.4 MCX Group Creation Documents

**Table 5.5.7.4-1: MCX Group Creation Document**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: TS 24.481 [11] clause 7.2.2 | | | | |
| **Information Element** | **Value/remark** | **Comment** | **Reference** | **Condition** |
| **list-service [1]** |  |  |  |  |
| uri-attribute | px\_MCPTT\_Group\_B\_ID | uri of the MCPTT group | TS 24.481 [11] | MCPTT |
|  | px\_MCVideo\_Group\_B\_ID |  |  | MCVIDEO |
|  | px\_MCData\_Group\_B\_ID |  |  | MCDATA |
| display-name | any value | group display name | TS 24.481 [11] |  |
| **list** |  |  |  |  |
| **entry[1]** |  | **User-C** |  |  |
| uri-attribute | px\_MCPTT\_ID\_User\_C | User ID allowed to participate in this group | TS 24.481 [11] | MCPTT |
|  | px\_MCVideo\_ID\_User\_C |  |  | MCVIDEO |
|  | px\_MCData\_ID\_User\_C |  |  | MCDATA |
| display-name | Not present | User display name | TS 24.481 [11] |  |
| **entry[2]** |  | **User-D** |  |  |
| uri-attribute | px\_MCPTT\_ID\_User\_D | User ID allowed to participate in this group | TS 24.481 [11] | MCPTT |
|  | px\_MCVideo\_ID\_User\_D |  |  | MCVIDEO |
|  | px\_MCData\_ID\_User\_D |  |  | MCDATA |
| display-name | Not present | User display name | TS 24.481 [11] |  |
| **oxe:supported-services** |  |  |  |  |
| oxe:service |  |  | TS 24.481 [11] |  |
| oxe:enabler | “urn:urn-7:3gpp-service.ims.icsi.mcptt” |  |  | MCPTT |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" |  |  | MCDATA |
| oxe:group-media |  |  |  |  |
| mcpttgi:mcptt-speech | Present |  |  | MCPTT |
| mcpttgi:mcvideo-video-media | Present |  |  | MCVIDEO |

**Table 5.5.7.4-2: MCX Temporary Group Creation Document**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 |  | MCPTT |
|  | px\_MCVideo\_Group\_T\_ID |  |  | MCVIDEO |
|  | px\_MCData\_Group\_T\_ID |  |  | MCDATA |
| display-name | Not present |  |  |  |
| list | Not present | Temporary group contains constituent groups but no group members |  |  |
| mcpttgi:on-network-temporary |  |  | TS 24.481 [11] |  |
| constituent-MCPTT-group-IDs |  |  |  |  |
| constituent-MCPTT-group-ID[1] | px\_MCPTT\_Group\_A\_ID | MCS group ID of a constituent MCS group of the temporary MCS group |  | MCPTT |
|  | px\_MCVideo\_Group\_A\_ID |  |  | MCVIDEO |
|  | px\_MCData\_Group\_A\_ID |  |  | MCDATA |
| constituent-MCPTT-group-ID[2] | px\_MCPTT\_Group\_B\_ID | MCS group ID of a constituent MCS group of the temporary MCS group |  | MCPTT |
|  | px\_MCVideo\_Group\_B\_ID |  |  | MCVIDEO |
|  | px\_MCData\_Group\_B\_ID |  |  | MCDATA |
| **oxe:supported-services** |  |  |  |  |
| oxe:service |  |  | TS 24.481 [11] |  |
| oxe:enabler | "urn:urn-7:3gpp-service.ims.icsi.mcptt" |  |  | MCPTT |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcvideo" |  |  | MCVIDEO |
|  | "urn:urn-7:3gpp-service.ims.icsi.mcdata.sds" |  |  | MCDATA |
| oxe:group-media |  |  |  |  |
| mcpttgi:mcptt-speech | Present |  |  | MCPTT |
| mcpttgi:mcvideo-video-media | Present |  |  | MCVIDEO |

### 5.5.8 Default MCS configuration management messages and other information elements

#### 5.5.8.1 MCX Initial UE Configuration

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

Table 5.5.8.1-1: MCX Initial UE Configuration Defaults

| Derivation Path: TS 24.484 [14], clause 7.2 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| mcptt-UE-initial-configuration |  |  |  |  |
| domain attribute | px\_MCX\_DomainName\_Organization\_A | Mandatory attribute: domain name of the mission critical organization |  |  |
| **Default-user-profile** | not present |  |  |  |
| **on-network** |  |  |  |  |
| **Timers** |  |  |  |  |
| T100 | "2" | Values 0-255 sec | TS 24.483 [13] clause 8.2.11 |  |
| T101 | "2" | Values 0-255 sec | TS 24.483 [13] clause 8.2.12 |  |
| T103 | "5" | Values 0-255 sec | TS 24.483 [13] clause 8.2.13 |  |
| T104 | "2" | Values 0-255 sec | TS 24.483 [13] clause 8.2.14 |  |
| T132 | "3" | Values 0-255 sec | TS 24.483 [13] clause 8.2.15 |  |
| **HPLMN** |  |  |  |  |
| PLMN attribute | PLMN-Id = MCC || MNC with MCC and MNC being the same as stored in EFIMSI on the test SIM card according to clause 4.9.2 in TS 36.508 [6] | PLMN on which the UE is allowed for MCX services.  NOTE: Same PLMN as of the Cell on which the UE is camped during testing. | TS 23.003 [69]  clause 12.1  TS 24.483 [13] clause 8.2.16 |  |
| service |  | MCX related services on a per HPLMN basis |  |  |
| MCPTT-to-con-ref | px\_MCX\_APN | configuration parameter for establishment of the PDN connection for the **MCX service** | TS 24.483 [13] clause 8.2.21 |  |
| MC-common-core-to-con-ref | px\_MCX\_APN | configuration parameter for establishment of the PDN connection for the **MC common core service** | TS 24.483 [13] clause 8.2.24 |  |
| MC-ID-to-con-ref | px\_MCX\_APN | configuration parameter for establishment of the PDN connection for the **MC identity management service** | TS 24.483 [13] clause 8.2.27 |  |
| VPLM[1] | empty list |  |  |  |
| **App-Server-Info** |  |  |  |  |
| idms-auth-endpoint | "https://" & px\_MCX\_IdMS\_auth\_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 |
| gms | tsc\_MCX\_GMS\_Hostname | Indicates the group management server identity information | TS 23.003 [69]  TS 24.483 [13] clause 8.2.42 |  |
| cms | tsc\_MCX\_CMS\_Hostname | Indicates the configuration management server identity information | TS 23.003 [69]  TS 24.483 [13] clause 8.2.43 |  |
| kms | tsc\_MCX\_KMS\_Hostname | Indicates the key management server identity information | TS 23.003 [69]  TS 24.483 [13] clause 8.2.44 |  |
| tls-tunnel-auth-method |  |  |  |  |
| mutual-authentication | "false" | Indicates whether mutual authentication is used for the TLS tunnel authentication  false=one-way authentication based on the server certificate is used | TS 24.483 [13] clause 8.2.44B |  |
| x509 | Not present | the X.509 certificate for mutual authentication for the TLS tunnel authentication | TS 24.483 [13] clause 8.2.44C |  |
| key | Not present | pre-shared key for mutual authentication for the TLS tunnel authentication | TS 24.483 [13] clause 8.2.44D |  |
| GMS-URI | tsc\_MCX\_GMSURI | The group management service URI information which contains the public service identity for performing subscription proxy function of the GMS | TS 23.003 [69]  TS 24.483 [13] clause 8.2.9 |  |
| group-creation-XUI | px\_MCX\_GroupCreationXUI | Indicates the group creation XUI information for creation of groups | TS 23.003 [69]  TS 24.483 [13] clause 8.2.9A |  |
| GMS-XCAP-root-URI | tsc\_MCX\_GMSXCAPRootURI | Indicates the group management server XCAP Root URI information | TS 23.003 [69]  TS 24.483 [13] clause 8.2.9B |  |
| CMS-XCAP-root-URI | tsc\_MCX\_CMSXCAPRootURI | Indicates the configuration management server XCAP Root URI information | TS 23.003 [69]  TS 24.483 [13] clause 8.2.9C |  |
| integrity-protection-enabled | "true" | Indicates whether integrity protection is enabled | TS 24.483 [13] clause 8.2.44E |  |
| confidentiality-protection-enabled | "true" | Indicates whether integrity protection is enabled | TS 24.483 [13] clause 8.2.44F |  |
| anyExt |  |  |  |  |
| MCPTT-Service-Details |  |  |  |  |
| IPv6-Required | false | indicates whether IPv6 shall be used to access the MCPTT service |  |  |
| Server-URI | tsc\_MCPTT\_PublicServiceId\_A | URI used to contact the MCPTT service server |  |  |
| MCVideo-Service-Details |  |  |  |  |
| IPv6-Required | false | indicates whether IPv6 shall be used to access the MCVideo service |  |  |
| Server-URI | tsc\_MCVideo\_PublicServiceId\_A | URI used to contact the MCVideo service server |  |  |
| MCData-Service-Details |  |  |  |  |
| IPv6-Required | false | indicates whether IPv6 shall be used to access the MCData service |  |  |
| Server-URI | tsc\_MCData\_PublicServiceId\_A | URI used to contact the MCPTT service server |  |  |
| **off-network** |  |  |  |  |
| **Timers** |  |  |  |  |
| TFG1 | "150" | Indicates the timer for wait for call announcement; Values: 0-65535 ms | TS 24.483 [13] clause 8.2.47 |  |
| TFG2 | "2000" | Indicates the timer for call announcement; Values: 0-65535 ms | TS 24.483 [13] clause 8.2.48 |  |
| TFG3 | "40" | Indicates the timer for call probe retransmission; Values: 0-65535 ms | TS 24.483 [13] clause 8.2.49 |  |
| TFG4 | "20" | Indicates the timer for waiting for the MCX user; Values: 0-60 s | TS 24.483 [13] clause 8.2.50 |  |
| TFG5 | "2" | Indicates the timer for not present incoming call announcements; Values: 0-255 s | TS 24.483 [13] clause 8.2.51 |  |
| TFG11 | "3000" | Indicates the timer for MCX emergency end retransmission; Values: 0-65535 ms | TS 24.483 [13] clause 8.2.52 |  |
| TFG12 | "3000" | Indicates the timer for MCX imminent peril end retransmission; Values: 0-65535 ms | TS 24.483 [13] clause 8.2.53 |  |
| TFG13 | "1" | Indicates the timer for implicit priority downgrade; Values: 0-255 s | TS 24.483 [13] clause 8.2.54 |  |
| TFG14 | "1" | Indicates the MCX timer for implicit priority downgrade (imminent peril); Values: 0-255 s | TS 24.483 [13] clause 8.2.54A |  |
| TFP1 | "2000" | Indicates the timer for private call request retransmission; Values: 0-65535 ms | TS 24.483 [13] clause 8.2.55 |  |
| TFP2 | "50" | Indicates the timer for waiting for call response message; Values: 0-60 s | TS 24.483 [13] clause 8.2.56 |  |
| TFP3 | "2000" | Indicates the timer for private call release retransmission; Values: 0-65535 ms | TS 24.483 [13] clause 8.2.57 |  |
| TFP4 | "5000" | Indicates the timer for private call release retransmission; Values: 0-65535 ms | TS 24.483 [13] clause 8.2.58 |  |
| TFP5 | "30" | Indicates the timer for call release; Values: 0-600 s | TS 24.483 [13] clause 8.2.59 |  |
| TFP6 | "3000" | Indicates the timer for MCX emergency private call cancel retransmission; Values: 0-65535 ms | TS 24.483 [13] clause 8.2.60 |  |
| TFP7 | "6" | Indicates the timer for waiting for any message with same call identifier; Values: 0-255 s | TS 24.483 [13] clause 8.2.61 |  |
| TFB1 | "300" | Indicates the timer for max duration; Values: 0-600 s | TS 24.483 [13] clause 8.2.62 |  |
| TFB2 | "10" | Indicates the timer for max duration; Values: 0-10 s | TS 24.483 [13] clause 8.2.63 |  |
| TFB3 | "20" | Indicates the timer for waiting for the MCX user; Values: 0-60 s | TS 24.483 [13] clause 8.2.64 |  |
| T201 | "1000" | Indicates the timer for floor request; Values: 0-65535 ms | TS 24.483 [13] clause 8.2.65 |  |
| T203 | "5" | Indicates the timer for end of RTP media; Values: 0-255 s | TS 24.483 [13] clause 8.2.66 |  |
| T204 | "5" | Indicates the timer for floor queue position request; Values: 0-255 s | TS 24.483 [13] clause 8.2.67 |  |
| T205 | "1" | Indicates the timer for floor granted request; Values: 0-255 s | TS 24.483 [13] clause 8.2.68 |  |
| T230 | "10" | Indicates the timer for inactivity; Values: 0-255 s | TS 24.380 [10]  TS 24.581 [88] |  |
| T233 | "10" | Indicates the timer for pending user action; Values: 0-255 s | TS 24.483 [13] clause 8.2.70 |  |
| TFE1 | "30" | Indicates the timer for MCX emergency alert; Values: 0-65535 s | TS 24.483 [13] clause 8.2.71 |  |
| TFE2 | "10" | Indicates the timer for MCX emergency alert re-transmission; Values: 0-10 s | TS 24.483 [13] clause 8.2.72 |  |
| **Counters** |  |  |  |  |
| CFP1 | "3" | Indicates the counter for private call request retransmission | TS 24.483 [13] clause 8.2.74 |  |
| CFP3 | "5" | Indicates the counter for private call release retransmission | TS 24.483 [13] clause 8.2.75 |  |
| CFP4 | "2" | Indicates the counter for private call accept retransmission | TS 24.483 [13] clause 8.2.76 |  |
| CFP6 | "2" | Indicates the counter for private call accept retransmission | TS 24.483 [13] clause 8.2.77 |  |
| CFP11 | "2" | Indicates the counter for MCX group call emergency end retransmission | TS 24.483 [13] clause 8.2.78 |  |
| CFP12 | "2" | Indicates the counter for MCX imminent peril call emergency end retransmission | TS 24.483 [13] clause 8.2.79 |  |
| C201 | "3" | Indicates the counter for floor request | TS 24.483 [13] clause 8.2.80 |  |
| C204 | "2" | Indicates the counter for floor queue position request | TS 24.483 [13] clause 8.2.81 |  |
| C205 | "4" | Indicates the counter for floor granted request | TS 24.483 [13] clause 8.2.82 |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| IPv4 | IP address is IPv4 address |
| IPv6 | IP address is IPv6 address |

#### 5.5.8.2 MCPTT UE Configuration

The structure of a group configuration document is specified in TS 24.484 [14] clause 8.2, single MCPTT group configuration parameters are defined in TS 24.483 [13] clause 4.2.

Table 5.5.8.2-1: MCPTT UE Configuration Defaults

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | | "sip:" & px\_MCPTT\_ID\_User\_A | | same as the XUI value of the Document URI | |  | |  | |
| user-profile-index attribute | | "49" | | value arbitrarily selected | |  | |  | |
| Status | | true | | MCPTT user profile is enabled | |  | |  | |
| ProfileName | | "mcptt-user-profile-" & user-profile-index & ".xml" | | name of the user profile document; user-profile-index is the value of the user-profile-index attribute | | TS 24.483 [13] clause 5.2.7B | |  | |
| **Common** | |  | |  | |  | |  | |
| index attribute | | "0" | | Index for the particular MCPTT user profile | |  | |  | |
| MCPTTUserID | |  | |  | |  | |  | |
| index attribute | | "0" | |  | |  | |  | |
| uri-entry | | px\_MCPTT\_ID\_User\_A | | MCPTT user identity (MCPTT ID) which is a globally unique identifier within the MCPTT service that represents the MCPTT user | | TS 24.483 [13] clause 5.2.7 | |  | |
| UserAlias | |  | | Alphanumeric aliases of MCPTT user | | TS 24.483 [13] clause 5.2.8 | |  | |
| alias-entry | | px\_MCPTT\_User\_A\_Alias | |  | |  | |  | |
| ParticipantType | | px\_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 | | '123456'O | | Discovery group ID in the ProSe discovery procedures | | TS 23.303 [68] TS 24.483 [13] clause 5.2.19 | |  | |
| User-Info-ID | | '555555555555'O | | Prose user Info ID in the ProSe discovery procedures | | TS 23.303 [68]  TS 24.483 [13] clause 5.2.19A | |  | |
| PrivateCallProSeUser[2] | |  | |  | |  | |  | |
| index attribute | | "1" | |  | |  | |  | |
| DiscoveryGroupID | | '123456'O | | Discovery group ID in the ProSe discovery procedures | | TS 23.303 [68] TS 24.483 [13] clause 5.2.19 | |  | |
| User-Info-ID | | '666666666666'O | | Prose user Info ID in the ProSe discovery procedures | | TS 23.303 [68]  TS 24.483 [13] clause 5.2.19A | |  | |
| EmergencyCall | |  | |  | |  | |  | |
| MCPTTPrivateRecipient | |  | |  | |  | |  | |
| entry | |  | |  | |  | |  | |
| entry-info attribute | | "UsePreConfigured" | | Indicates the criteria to determine when initiation of an MCPTT emergency private call uses the MCPTT private recipient ID. | | TS 24.483 [13] clause 5.2.29F | |  | |
| index attribute | | "0" | |  | |  | |  | |
| uri-entry | | px\_MCPTT\_ID\_User\_B | | The MCPTT private recipient for an MCPTT emergency private call | | TS 24.483 [13] clause 5.2.29B | |  | |
| display-name | | "User B Name" | | a human readable name for this User | | TS 24.483 [13] clause 5.2.29E | |  | |
| ProSeUserID-entry | |  | |  | |  | |  | |
| index attribute | | "0" | |  | |  | |  | |
| DiscoveryGroupID | | '123456'O | | Discovery group ID in the ProSe discovery procedures | | TS 24.483 [13] clause 5.2.29C | |  | |
| User-Info-ID | | '555555555555'O | | ProSe user Info ID in the ProSe discovery procedures | | TS 24.483 [13] clause 5.2.29D | |  | |
| **MCPTT-group-call** | |  | |  | |  | |  | |
| MaxSimultaneousCallsN6 | | "3" | | Indicates the maximum number of simultaneously received MCPTT group calls | | TS 24.483 [13] clause 5.2.31 | |  | |
| EmergencyCall | |  | |  | |  | |  | |
| MCPTTGroupInitiation | |  | |  | |  | |  | |
| entry | |  | |  | |  | |  | |
| entry-info attribute | | "UseCurrentlySelectedGroup" | | 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 | | "UseCurrentlySelectedGroup" | | 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 | | "UseCurrentlySelectedGroup" | | Use currently selected MCPTT group for emergency alert | | TS 24.483 [13] clause 5.2.43E | |  | |
| uri-entry | | px\_MCPTT\_Group\_A\_ID | | Indicates the MCPTT group used upon certain criteria on initiation of an MCPTT emergency alert. | | TS 24.483 [13] clause 5.2.43B | |  | |
| display-name | | px\_MCPTT\_Group\_A\_Name | | Optional; name of emergency alert group | | TS 24.483 [13] clause 5.2.43D | |  | |
| Priority | | "10" | | Indicates the priority of the MCPTT group calls, 0-255 | | TS 24.483 [13] clause 5.2.43F | |  | |
| **OffNetwork** | |  | |  | |  | |  | |
| index attribute | | "0" | |  | |  | |  | |
| MCPTTGroupInfo | |  | |  | |  | |  | |
| entry[1] | |  | |  | |  | |  | |
| index attribute | | "0" | |  | |  | |  | |
| uri-entry | | px\_MCPTT\_Group\_A\_ID | | Indicates an off-network MCPTT group for use by an MCPTT user | | TS 24.483 [13] clause 5.2.53 | |  | |
| display-name | | px\_MCPTT\_Group\_A\_Name | | The display name corresponding to off-network group id | | TS 24.483 [13] clause 5.2.53A | |  | |
| User-Info-ID | | '555555555555'O | | ProSe user info ID | | TS 23.303 [68]  TS 24.483 [13] clause 5.2.58 | |  | |
| **OnNetwork** | |  | |  | |  | |  | |
| index attribute | | "0" | |  | |  | |  | |
| MCPTTGroupInfo | |  | |  | |  | |  | |
| entry[1] | |  | | Group 1 the MCPTT user is allowed to affiliate to | |  | |  | |
| index attribute | | "0" | |  | |  | |  | |
| uri-entry | | px\_MCPTT\_Group\_A\_ID | | The MCPTT group ID for the on-network MCPTT group that the MCPTT user is allowed to affiliate to. | | TS 24.483 [13] clause 5.2.48B4 | |  | |
| 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" | |  | |  | |  | |
| uri-entry | | px\_MCPTT\_ID\_User\_B | | Indicates the default MCPTT user ID to be used upon certain criteria on initiation of an MCPTT private emergency alert for on-network | | TS 24.483 [13] clause 5.2.48M | |  | |
| display-name | | px\_MCPTT\_User\_A\_Alias | | The display name corresponding to private emergency call id | | TS 24.483 [13] clause 5.2.48N | |  | |
| anyExt | |  | |  | |  | |  | |
| RemoteGroupSelectionURIList | |  | |  | | TS 24.483 [13] clause 5.2.48U2 | |  | |
| entry[1] | | px\_MCPTT\_ID\_User\_A | |  | | TS 24.483 [13] clause 5.2.48U4 | |  | |
| entry[2] | | px\_MCPTT\_ID\_User\_B | |  | | TS 24.483 [13] clause 5.2.48U4 | |  | |
| entry[3] | | px\_MCPTT\_ID\_User\_C | |  | | TS 24.483 [13] clause 5.2.48U4 | |  | |
| FunctionalAliasList | |  | |  | | TS 24.483 [13] clause 5.2.48W6 | |  | |
| entry[1] | | 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 | |  | |
| 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 | |  | |
| allow-imminent-peril-change | | "true" | | Indicates the authorisation for a participant to change an off-network group call in-progress to an off-network MCPTT imminent peril group call | | TS 24.483 [13] clause 5.2.57 | |  | |
| allow-regroup | | "true" | | Indicates whether the MCPTT user is authorised to perform dynamic regrouping operations | | TS 24.483 [13] clause 5.2.48D | |  | |
| allow-presence-status | | "true" | | Indicates the presence status on the network of this MCPTT user is available | | TS 24.483 [13] clause 5.2.48E | |  | |
| allow-request-presence | | "true" | | Indicates whether the MCPTT user is authorised to obtain whether a particular MCPTT User is present on the network | | TS 24.483 [13] clause 5.2.48F | |  | |
| allow-private-call-participation | | "true" | | Indicates whether the MCPTT user is allowed to participate in MCPTT private calls that they are invited to | | TS 24.483 [13] clause 5.2.48G | |  | |
| allow-override-of-transmission | | "true" | | Indicates whether the MCPTT user is authorised to override transmission in a MCPTT private call | | TS 24.483 [13] clause 5.2.48H | |  | |
| allow-manual-off-network-switch | | "true" | | Indicates whether the MCPTT user is authorised to manually switch to off-network operation while in on-network operation | | TS 24.483 [13] clause 5.2.48I | |  | |
| anyExt | |  | |  | |  | |  | |
| allow-request-private-call-call-back | | "true" | | Indicates whether the MCPTT user is allowed to request a private call call-back | | TS 24.483 [13] clause 5.2.48P | |  | |
| allow-cancel-private-call-call-back | | "true" | | Indicates whether the MCPTT user is allowed to cancel an outstanding private call call-back request | | TS 24.483 [13] clause 5.2.48Q | |  | |
| allow-request-remote-initiated-ambient-listening | | "true" | | Indicates whether the MCPTT user is allowed to request a remote initiated ambient listening call | | TS 24.483 [13] clause 5.2.48R | |  | |
| allow-request-locally-initiated-ambient -listening | | "true" | | Indicates whether the MCPTT user is allowed to request a locally initiated ambient listening call | | TS 24.483 [13] clause 5.2.48S | |  | |
| allow-request-first-to-answer-call | | "true" | | Indicates whether the MCPTT user is authorised to request a first to answer call | | TS 24.483 [13] clause 5.2.48T | |  | |
| 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 5.2.48W1 | |  | |
| allow-request-remote-init-group-call | | "true" | | Indicates whether the MCPTT user is authorised to request a remotely initiated group call | | TS 24.483 [13] clause 5.2.48W2 | |  | |
| allow-query-functional-alias-other-user | | "true" | | Indicates whether the MCPTT user is authorised to query the functional alias(es) activated by another MCPTT user | | TS 24.483 [13] clause 5.2.48W8 | |  | |
| 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 5.2.48W9 | |  | |
| 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 5.2.48W10 | |  | |

#### 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 |  |
| 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-entry[1] |  |  |  |  |
| functional-alias | px\_MCPTT\_ID\_FA\_A |  |  |  |
| max-simultaneous-activations | "1" |  |  |  |
| allow-takeover | "true" |  |  |  |
| mcptt-user-list |  |  |  |  |
| entry[1] |  |  |  |  |
| uri-entry | px\_MCPTT\_ID\_User\_A |  |  |  |
| **off-network** |  |  |  |  |
| emergency-call |  |  |  |  |
| private-cancel-timeout | "PT5S" | 5 seconds;  Indicates timeout value for the cancellation of an in progress emergency for an MCPTT private call. Values: : 0-65535 s | TS 24.483 [13] clause 7.2.14 |  |
| group-time-limit | "PT5S" | 5 seconds;  Indicates time limit for an in progress MCPTT emergency call related to an MCPTT group. Values: 0-65535 s | TS 24.483 [13] clause 7.2.16 |  |
| private-call |  |  |  |  |
| hang-time | "PT5S" | 5 seconds;  Indicates hang timer for private calls (with floor control). Values: 0-65535 s | TS 24.483 [13] clause 7.2.13 |  |
| max-duration-with-floor-control | "PT60S" | 60 seconds;  Indicates max private call (with floor control) duration. Values: 0-65535 s | TS 24.483 [13] clause 7.2.12 |  |
| num-levels-priority-hierarchy | "4" | Indicates the number of levels of hierarchy for floor control override in off-network. Values: 4-256 | TS 24.483 [13] clause 7.2.17 |  |
| transmit-time |  |  |  |  |
| time-limit | "PT60S" | 60 seconds;  Indicates transmit time limit from a single request to transmit in a group or private call. Values: 0-65535 s | TS 24.483 [13] clause 7.2.18 |  |
| time-warning | "PT50S" | 50 seconds;  Indicates configuration of warning time before time limit of transmission is reached (off-network). Values: 0-255 s | TS 24.483 [13] clause 7.2.19 |  |
| hang-time-warning | "PT4S" | 4 seconds;  Indicates configuration of warning time before hang time is reached (off-network). Values: Values: 0-255 s | TS 24.483 [13] clause 7.2.20 |  |
| default-prose-per-packet-priority |  |  |  |  |
| mcptt-private-call-signalling | "1" | Indicates the default ProSe Per-Packet Priority (PPPP) value | TS 23.303 [68]  TS 24.483 [13] clause 7.2.22 |  |
| mcptt-private-call-media | "1" | Indicates the default ProSe Per-Packet Priority (PPPP) value | TS 23.303 [68]  TS 24.483 [13] clause 7.2.23 |  |
| mcptt-emergency-private-call-signalling | "8" | Indicates the default ProSe Per-Packet Priority (PPPP) value | TS 23.303 [68]  TS 24.483 [13] clause 7.2.24 |  |
| mcptt-emergency-private-call-media | "8" | Indicates the default ProSe Per-Packet Priority (PPPP) value | TS 23.303 [68]  TS 24.483 [13] clause 7.2.25 |  |
| allow-log-metadata | "true" | Indicates whether an MCPTT emergency group call is permitted on the MCPTT group | TS 24.483 [13] clause 7.2.26 |  |

#### 5.5.8.5 Void

#### 5.5.8.6 MCVideo UE Configuration

The structure of a UE configuration document is specified in TS 24.484 [14] clause 9.2. Single MCVideo group configuration parameters are defined in TS 24.483 [13] clause 12.2.

Table 5.5.8.6-1: MCVideo UE Configuration Defaults

| 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 24.484 [14], clause 9.3 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **mcptt-user-profile** |  |  |  |  |
| **XUI-URI attribute** | "sip:" & px\_MCVideo\_ID\_User\_A | same as the XUI value of the Document URI |  |  |
| **user-profile-index attribute** | "42" | value arbitrarily selected |  |  |
| **Status** | “true” | MCVideo user profile is enabled |  |  |
| **ProfileName** | "mcvideo-user-profile-" & user-profile-index & ".xml" | name of the user profile document; user-profile-index is the value of the user-profile-index attribute | TS 24.483 [13] clause 13.2.3; |  |
| **Common** |  |  |  |  |
| index attribute | "0" | Index for the particular MCVideo user profile |  |  |
| MCVideoUserID |  | Indicates an MCVideo user identity (MCVideo ID) which is a globally unique identifier within the MCVideo service that represents the MCVideo user | TS 24.483 [13] clause 13.2.7 |  |
| index attribute | "0" |  |  |  |
| uri-entry | px\_MCVideo\_ID\_User\_A | MCVideo user identity (MCVideo ID) which is a globally unique identifier within the MCVideo service that represents the MCVideo user |  |  |
| UserAlias | 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\_MCX\_DomainName\_Organization\_A | Indicates the organization an MCVideo user belongs to | TS 24.483 [13] clause 13.2.16 |  |
| PrivateCall |  |  |  |  |
| PrivateCallList |  |  |  |  |
| PrivateCallOnNetwork[1] |  |  |  |  |
| PrivateCallURI |  |  |  |  |
| index attribute | 0 |  |  |  |
| uri-entry | px\_MCVideo\_ID\_User\_B |  |  |  |
| display-name | "User B Name" |  |  |  |
| PrivateCallKMSURI |  |  |  |  |
| uri-entry | "" | According to TS 24.484 [14] if the entry element is empty, the KMS URI present in the MCS initial configuration document is used |  |  |
| PrivateCallOnNetwork[2] |  |  |  |  |
| PrivateCallURI |  |  |  |  |
| index attribute | 1 |  |  |  |
| uri-entry | px\_MCVideo\_ID\_User\_C |  |  |  |
| display-name | "User C Name" |  |  |  |
| PrivateCallKMSURI |  |  |  |  |
| uri-entry | "" | According to TS 24.484 [14] if the entry element is empty, the KMS URI present in the MCS initial configuration document is used |  |  |
| PrivateCallOffNetwork | not present |  |  |  |
| EmergencyCall |  |  |  |  |
| MCVideoPrivateRecipient |  |  |  |  |
| entry |  |  |  |  |
| entry-info attribute | "UsePreConfigured" |  |  |  |
| index attribute | "0" |  |  |  |
| uri-entry | px\_MCVideo\_ID\_User\_B |  |  |  |
| display-name | "User B Name" |  |  |  |
| ProSeUserID-entry |  |  |  |  |
| index attribute | "0" |  |  |  |
| DiscoveryGroupID | '123456'O |  |  |  |
| User-Info-ID | '555555555555'O |  |  |  |
| MCVideo-group-call |  |  |  |  |
| MaxSimultaneousCallsN6 | 3 |  |  |  |
| EmergencyCall |  |  |  |  |
| MCVideoGroupInitiation |  |  |  |  |
| entry |  |  |  |  |
| entry-info attribute | "UseCurrentlySelectedGroup" |  |  |  |
| index attribute | "0" |  |  |  |
| uri-entry | px\_MCVideo\_Group\_A\_ID |  |  |  |
| display-name | px\_MCVideo\_Group\_A\_Name |  |  |  |
| ImminentPerilCall |  |  |  |  |
| MCVideoGroupInitiation |  |  |  |  |
| entry |  |  |  |  |
| entry-info attribute | "UseCurrentlySelectedGroup" |  |  |  |
| index attribute | "0" |  |  |  |
| uri-entry | px\_MCVideo\_Group\_A\_ID |  |  |  |
| display-name | px\_MCVideo\_Group\_A\_Name |  |  |  |
| EmergencyAlert |  |  |  |  |
| MCVideoGroupInitiation |  |  |  |  |
| entry |  |  |  |  |
| index attribute | "0" |  |  |  |
| entry-info attribute | "UseCurrentlySelectedGroup" |  |  |  |
| uri-entry | px\_MCVideo\_Group\_A\_ID |  |  |  |
| display-name | px\_MCVideo\_Group\_A\_Name |  |  |  |
| Priority | 10 |  |  |  |
| **OnNetwork** |  |  |  |  |
| index | "1" |  |  |  |
| MCVideoGroupInfo |  |  |  |  |
| MCVideo-Group-ID | px\_MCVideo\_Group\_A\_ID |  |  |  |
| GMS-Serv-Id | tsc\_MCX\_GMS\_Hostname |  |  |  |
| IdMS-Token-Endpoint | "https://" & px\_MCX\_IdMS\_token\_IPAddress & ":" & px\_MCX\_IdMS\_token\_Port & tsc\_MCX\_IdMS\_token\_UriPath | Identity management server token endpoint identity information | TS 23.003 [69]  TS 24.483 [13] clause 8.2.41A | IPv4 |
|  | "https://[" & px\_MCX\_IdMS\_token\_IPAddress & "]:" & px\_MCX\_IdMS\_token\_Port & tsc\_MCX\_IdMS\_token\_UriPath | Identity management server token endpoint identity information | TS 23.003 [69]  TS 24.483 [13] clause 8.2.41A | IPv6 |
| RelativePresentationPriority | "7" |  | TS 24.483 [13] clause 13.2.51 |  |
| GroupKMSURI | tsc\_MCX\_KMS\_Hostname |  |  |  |
| MaxAffiliationsN2 | "10" |  | TS 24.483 [13] clause 13.2.67 |  |
| PrivateEmergencyAlert |  |  | TS 24.483 [13] clause 13.2.87 |  |
| entry |  |  |  |  |
| entry-info attribute | "UsePreConfigured" |  |  |  |
| index attribute | "0" |  |  |  |
| uri-entry | px\_MCVideo\_ID\_User\_B |  |  |  |
| display-name | px\_MCVideo\_User\_A\_Name |  |  |  |
| anyExt | not present |  |  |  |
| RemoteGroupSelectionURIList |  |  | TS 24.483 [13] clause 13.2.87 |  |
| entry[1] | px\_MCVideo\_ID\_User\_A |  |  |  |
| entry[2] | px\_MCVideo\_ID\_User\_B |  |  |  |
| entry[3] | px\_MCVideo\_ID\_User\_C |  |  |  |
| **OffNetwork** |  |  |  |  |
| index | "1" |  |  |  |
| MCVideoGroupInfo |  |  |  |  |
| MCVideo-Group-ID | px\_MCVideo\_Group\_A\_ID |  |  |  |
| GMS-App-Serv-Id | tsc\_MCX\_GMS\_Hostname |  |  |  |
| IdMS-Token-Endpoint | "https://" & px\_MCX\_IdMS\_token\_IPAddress & ":" & px\_MCX\_IdMS\_token\_Port & tsc\_MCX\_IdMS\_token\_UriPath | Identity management server token endpoint identity information | TS 23.003 [69]  TS 24.483 [13] clause 8.2.41A | IPv4 |
|  | "https://[" & px\_MCX\_IdMS\_token\_IPAddress & "]:" & px\_MCX\_IdMS\_token\_Port & tsc\_MCX\_IdMS\_token\_UriPath | Identity management server token endpoint identity information | TS 23.003 [69]  TS 24.483 [13] clause 8.2.41A | IPv6 |
| RelativePresentationPriority | "7" |  | TS 24.483 [13] clause 13.2.51 |  |
| User-Info-Id | '555555555555'O |  | TS 24.483 [13] clause 13.2.102 |  |
| **cp:ruleset** |  |  |  |  |
| cp:rule |  |  |  |  |
| cp:id attribute | "rule1" |  |  |  |
| cp:actions |  |  |  |  |
| allow-presence-status | "true" |  |  |  |
| allow-request-presence | "true" |  |  |  |
| allow-query-availability-for-private-calls | "true" |  |  |  |
| allow-enable-disable-user | "true" |  |  |  |
| allow-enable-disable-UE | "true" |  |  |  |
| allow-private-call | "true" |  |  |  |
| allow-manual-commencement | "true" |  |  |  |
| allow-automatic-commencement | "true" |  |  |  |
| allow-force-auto-answer | "true" |  |  |  |
| allow-failure-restriction | "true" |  |  |  |
| allow-emergency-group-call | "true" |  |  |  |
| allow-emergency-private-call | "true" |  |  |  |
| allow-cancel-group-emergency | "true" |  |  |  |
| allow-cancel-private-emergency-call | "true" |  |  |  |
| allow-imminent-peril-call | "true" |  |  |  |
| allow-cancel-imminent-peril | "true" |  |  |  |
| allow-activate-emergency-alert | "true" |  |  |  |
| allow-cancel-emergency-alert | "true" |  |  |  |
| allow-offnetwork | "true" |  |  |  |
| allow-imminent-peril-change | "true" |  |  |  |
| allow-private-call-media-protection | "true" |  |  |  |
| allow-request-affiliated-groups | "true" |  |  |  |
| allow-request-to-affiliate-other-users | "true" |  |  |  |
| allow-recommend-to-affiliate-other-users | "true" |  |  |  |
| allow-private-call-to-any-user | "true" |  |  |  |
| allow-regroup | "true" |  |  |  |
| allow-private-call-participation | "true" |  |  |  |
| allow-manual-off-network-switch | "true" |  |  |  |
| allow-off-network-group-call-change-to-emergency | "true" |  |  |  |
| allow-revoke-transmit | "true" |  |  |  |
| allow-create-group-broadcast-group | "true" |  |  |  |
| allow-create-user-broadcast-group | "true" |  |  |  |
| anyExt |  |  |  |  |
| allow-request-remote-initiated-ambient-viewing | "true" |  |  |  |
| allow-request-locally-initiated-ambient-viewing | "true" |  |  |  |

|  |  |
| --- | --- |
| **Condition** | **Explanation** |
| IPv4 | IP address is IPv4 address |
| IPv6 | IP address is IPv6 address |

#### 5.5.8.8 MCVideo Service Configuration

The structure of a service configuration document is specified in TS 24.484 [14] clause 8.4. Single MCVideo group configuration parameters are defined in TS 24.483 [13] clause 14.2.

Table 5.5.8.8-1: MCVideo Service Configuration Defaults

| 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** |  |  |  |  |
| default-prose-per-packet-priority |  |  |  |  |
| mcvideo-private-call-signalling | "1" | Indicates the default ProSe Per-Packet Priority (PPPP) value |  |  |
| mcvideo-private-call-media | "1" | Indicates the default ProSe Per-Packet Priority (PPPP) value |  |  |
| mcvideo-emergency-private-call-signalling | "8" | Indicates the default ProSe Per-Packet Priority (PPPP) value |  |  |
| mcvideo-emergency-private-call-media | "8" | Indicates the default ProSe Per-Packet Priority (PPPP) value |  |  |
| private-call |  |  |  |  |
| mcvideo-max-duration | "600" | Value in seconds | TS 24.483 [13] clause 14.2.17 |  |
| num-levels-priority-hierarchy | "4" |  | TS 24.483 [13] clause 14.2.18 |  |

#### 5.5.8.9 Void

#### 5.5.8.10 MCDATA UE Configuration

The structure of a UE configuration document is specified in TS 24.484 [14] clause 10.2. Single MCVideo group configuration parameters are defined in TS 24.483 [13] clause 9.2.

Table 5.5.8.10-1: MCDATA UE Configuration Defaults

| Derivation Path: TS 24.484 [14] clause 10.2 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| mcdata-UE-configuration |  |  |  |  |
| **domain attribute** | px\_MCX\_DomainName\_Organization\_A | Mandatory attribute: domain name of the mission critical organization |  |  |
| **common** |  |  |  |  |
| short-data-service |  | Contains an integer indicating the maximum number of simultaneous SDS transactions (Nc4) allowed for an MCData UE for on-network or off-network group SDS | TS 24.483 clause 9.2.8 |  |
| Max-Simul-SDS-Txns-Nc4 | "2" | Indicates the maximum number of SDS Transactions | TS 24.483 [13] clause 10.2 |  |
| SDS-Presentation-Priority |  |  | TS 24.483 clause 9.2.8 |  |
| MCDATA -Group-Priority |  |  |  |  |
| MCDATA-Group-ID | px\_MCData\_Group\_A\_ID | Value is a "uri" attribute specified in OMA OMA-TS-XDM\_Group-V1\_1 that indicates the group id. | TS 24.483 [13] clause 10.2 |  |
| group-priority-hierarchy | "7" | Indicates the requested presentation priority of group call; Values: 0-7  "7"=the top priority among groups | TS 24.483 [13] clause 9.2.11, 10.2 |  |
| File distribution |  |  |  |  |
| Max-Simul-FD-Txns-Nc4 | "4" | Contains an integer indicating the maximum number of simultaneous FD transactions (Nc4) allowed for an MCData UE for on-network or off-network group FD | TS 24.483 clause 9.2.12 |  |
| FD-Presentation-Priority |  | contains a list of <MCData-Group-Priority> elements that contains the following elements shown below. | TS 24.483 clause 9.2.13 |  |
| MCDATA-Group-Priority |  |  |  |  |
| MCDATA-Group-ID | px\_MCData\_Group\_A\_ID | Identifies a MCData group | TS 24.483 clause 9.2.15 |  |
| group-priority-hierarchy | "7" | Contains an integer that identifies the relative priority level of that MCData group with 0 being the lowest priority and 255 being the highest priority | TS 24.483 [13] clause 9.2.16, 10.2 |  |
| conversation-management |  |  |  |  |
| Conversation-Presentation-Priority |  |  |  |  |
| MCData-Group-Priority |  |  |  |  |
| MCData-Group-ID | px\_MCData\_Group\_A\_ID | Identifies a MCData group | TS 24.483 clause 9.2.15 |  |
| group-priority-hierarchy | "7" | Indicates the requested presentation priority of conversation management transactions | TS 24.483 clause 9.2.16 |  |
| 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 [14], clause 10.3.2.1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| mcdata-user-profile |  |  |  |  |
| **XUI-URI attribute** | "sip:" & px\_MCData\_ID\_User\_A | same as the XUI value of the Document URI |  |  |
| **user-profile-index attribute** | "49" | value arbitrarily selected |  |  |
| **Status** | “true” | MCData user profile is enabled |  |  |
| ProfileName | "mcdata-user-profile-" & user-profile-index & ".xml" | name of the user profile document; user-profile-index is the value of the user-profile-index attribute | TS 24.483 [13] clause 5.2.7B |  |
| **Common** |  |  |  |  |
| index attribute | "0" | Index for the particular MCDATA user profile | TS 24.483 [13] clause 10.2.6 |  |
| UserAlias |  |  |  |  |
| alias-entry | px\_MCData\_User\_A\_Alias | Alphanumeric aliases of MCDATA user | TS 24.483 [13] clause 10.2.11 |  |
| MCDATAUserID |  |  |  |  |
| entry | px\_MCData\_ID\_User\_A |  |  |  |
| MissionCriticalOrganization | px\_MCX\_DomainName\_Organization\_A | Indicates the organization an MCData user belongs to | TS 24.483 [13] clause 10.2.16 |  |
| FileDistribution |  |  |  |  |
| FD-cancel-List-Entry |  |  |  |  |
| MCData-ID | px\_MCData\_ID\_User\_A | Contains the MCData user identity (MCData ID) of an MCData user that the configured MCData user is authorised to initiate a one-to-one communication, and corresponds to the "MCDataID" element of clause 10.2.16E in 3GPP TS 24.483 [4]; | TS 24.483 clause 10.2.21A |  |
| MCData\_ID\_KMSURI | tsc\_MCX\_KMS\_Hostname | Contains the KMS URI for the security domain of the MCData user identity (MCData ID) of the MCData user and corresponds to the "MCDataUserIDKMSURI" element of clause 10.2.9A in 3GPP TS 24.483 [4]. If this parameter is absent, the KMS URI is identified by the <kms-sec> element of the <App-Server-Info> of the MCS UE initial configuration document as specified in clause 7.2.2.1 | TS 24.483 [13] clause 10.2.21A |  |
| TxRxControl |  |  |  |  |
| MaxData1To1 | “65535” | Indicates the maximum amount of data (in megabytes) that an MCData user can transmit in a single request during one-to-one communication. | TS 24.483 [13] clause 10.2.25 |  |
| MaxTime1to1 | “65535” | Indicates the maximum amount of time that an MCData user can transmit for in a single request during one-to-one communication. | TS 24.483 [13] clause 10.2.26 |  |
| TxReleaseList | px\_MCData\_ID\_User\_A | Indicates an MCData ID of an MCData user that this MCData user is allowed to request release of an ongoing transmission | TS 24.483 [13] clause 10.2.30 |  |
| GroupEmergencyAlert |  | Indicates the MCData group recipient for an MCData emergency Alert | TS 24.483 [13] clause 10.2.38 |  |
| entry | px\_MCData\_ID\_User\_A |  |  |  |
| **OnNetwork** |  |  |  |  |
| index attribute | "0" | Is of type "token" and is included within some elements for uniqueness purposes, and does not appear in the user profile configuration managed object specified in 3GPP TS 24.483 [4]. |  |  |
| MCDataGroupInfo |  |  |  |  |
| MCData-Group-ID | px\_MCData\_Group\_A\_ID | Indicates the MCData group ID for the on-network MCData group that the MCData user is allowed to use. | TS 24.483 [13] clause 10.2.47 |  |
| GMS-App-Serv-ID | tsc\_MCX\_GMS\_Hostname | URI of the group management server hosting the on-network MCData group identified by the <MCData-Group-ID> element | TS 24.483 [13] clause 10.2.51 |  |
| IdMS-Token-Endpoint | "https://" & px\_MCX\_IdMS\_token\_IPAddress & ":" & px\_MCX\_IdMS\_token\_Port & tsc\_MCX\_IdMS\_token\_UriPath | Identity management server token endpoint identity information | TS 23.003 [69]  TS 24.483 [13] clause 8.2.41A | IPv4 |
|  | "https://[" & px\_MCX\_IdMS\_token\_IPAddress & "]:" & px\_MCX\_IdMS\_token\_Port & tsc\_MCX\_IdMS\_token\_UriPath | Identity management server token endpoint identity information | TS 23.003 [69]  TS 24.483 [13] clause 8.2.41A | IPv6 |
| GroupKMSURI | tsc\_MCX\_KMS\_Hostname |  | TS 24.483 [13] clause 10.2.54A |  |
| Relativepresentation Priority | "7" |  |  |  |
| MaxAffiliations | “10” | contains an integer value between 0 and 255 indicating the presentation priority of the off-network group relative to other off-network groups and off-network users | TS 24.483 clause 10.2.71 |  |
| One-To-One-EmergencyAlert |  | Indicates the MCData user recipient for an on-network MCData emergency one-to-one alert | TS 24.483 clause 10.2.91 |  |
| entry | px\_MCData\_ID\_User\_A | Indicates the name of the MCData user recipient for an on-network MCData emergency one-to-one alert | TS 24.483 clause 10.2.92 |  |
| anyExt |  |  |  |  |
| MCDataContentServerURI | "http://" & tsc\_MCData\_MSF\_Hostname & "/userA/files" | absolute URI associated with media storage function of MCData content server | TS 24.483 clause 10.2.97A |  |
| MessageStoreHostname | tsc\_MCData\_MSF\_Hostname | hostname identifying the message store function | TS 24.483 clause 10.2.97E |  |
| **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 |
| Group-KMSURI | tsc\_MCX\_KMS\_Hostname |  | TS 24.483 [13] clause 10.2.110A |  |
| RelativePresentationPriority | "7" | When it appears in:  the <MCDataGroupInfo> element of the <OnNetwork> element, contains an integer value between 0 and 255 indicating the presentation priority of the on-network group relative to other on-network groups and on-network users, and corresponds to the "PresentationPriority" element of clause 10.2.55 in 3GPP TS 24.483 [4]; and  the <MCDataGroupInfo> element of the <OffNetwork> element, contains an integer value between 0 and 255 indicating the presentation priority of the off-network group relative to other off-network groups and off-network users, and corresponds to the "PresentationPriority" element of clause 10.2.111 in 3GPP TS 24.483 [4]; |  |  |
| User-Info-Id | '555555555555'O |  |  |  |
| **ruleset** |  |  |  |  |
| rule |  |  |  |  |
| actions |  |  |  |  |
| allow-create-delete-user-alias | "true" |  |  |  |
| allow-create-group-broadcast- group | "true" |  |  |  |
| allow-create-user-broadcast-group | "true" |  |  |  |
| allow-transmit-data | "true" |  |  |  |
| allow-request-affiliated-groups | "true" |  |  |  |
| allow-request-to-affiliate-other-users | "true" |  |  |  |
| allow-recommend-to-affiliate-other-users | "true" |  |  |  |
| allow-regroup | "true" |  |  |  |
| allow-presence-status | "true" |  |  |  |
| allow-request-presence | "true" |  |  |  |
| allow-activate-emergency-alert | "true" |  |  |  |
| allow-cancel-emergency-alert | "true" |  |  |  |
| allow-cancel-emergency-alert-any-user | "true" |  |  |  |
| allow-enable-disable-user | "true" |  |  |  |
| allow-enable-disable-UE | "true" |  |  |  |
| allow-off-network-manual-switch | "true" |  |  |  |
| allow-off-network | "true" |  |  |  |

|  |  |
| --- | --- |
| **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 |  |  |
| signalling-protection |  |  |  |  |
| confidentiality-protection | "true" | Indicating whether confidentiality protection of MCData signalling is enabled or disabled between the MCData client and MCData server |  |  |
| integrity-protection | "true" | Indicating whether integrity protection of MCData signalling is enabled or disabled between the MCData client and MCData server |  |  |
| protection-between-mcdata-servers |  |  |  |  |
| allow-signalling-protection | :true" | Indicating whether protection of MCData signalling is enabled between MCData servers |  |  |
| file-availability |  |  |  |  | |
| default-file-availability | "10000000" | The default time for which a file is available on the server for download, if a explicit time period is not requested by the originating client |  |  |
| max-file-availability | "10000000" | The maximum time for which a file can be made available on the server for download |  |  |
| **off-network** |  |  |  |  |
| default-prose-per-packet-priority |  |  |  |  |
| mcdata-one-to-one-call-signalling | "1" |  | TS 24.483 [13] clause 11.2.11 |  |
| mcdata-one-to-one-call-media | "1" |  | TS 24.483 [13] clause 11.2.12 |  |

### 5.5.9 Default miscellaneous messages and other information elements

#### 5.5.9.1 MIKEY-SAKKE I\_MESSAGE

##### - CSK distribution (MIKEY-SAKKE sent by the UE)

Table 5.5.9.1-1: MIKEY-SAKKE I\_MESSAGE (CSK distribution by the UE)

| Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24] | | | |
| --- | --- | --- | --- |
| Field | Value/remark | Comment | Condition |
| MIKEY Common Header { | Any |  |  |
| version | ‘00000001’B |  |  |
| Data Type | ‘00011010’B | SAKKE msg (26) |  |
| Next payload | Identifier for the next payload (NOTE 1) |  |  |
| V | ‘0’B |  |  |
| PRF func | ‘0000001’B | PRF-HMAC-SHA-256 |  |
| CSB ID | Any value but 4 most significant bits set to '0010'B | 32 bit CSK-ID: the 4 most significant bits indicate the purpose of the key, the other 28-bits shall be randomly generated (TS 33.180 [94] clause 5.2.2 and E.6.11) |  |
| #CS | ‘00000001’B or '00000000'B | Number of crypto sessions in the CS ID map info: if #CS is 0 the default security policies shall be applied (TS 33.180 [94] E.1.2) |  |
| CS ID map type | 2 if #CS > 0 | GENERIC-ID |  |
|  | 1 if #CS == 0 | empty map |  |
| CS ID map info { | Present only if #CS > 0 |  |  |
| CS ID | '00000110'B | CS ID of the crypto session: '6' for CSK use within MCPTT (TS 33.180 [94] E.4.2) |  |
| Prot type | 0 | SRTP  the security protocol to be used for the crypto session |  |
| S | Any value | S flag to indicate whether the ROC and SEQ fields are provided ('1') or if they are omitted ('0') |  |
| #P | 1 | the number of security policies provided for the crypto session |  |
| Ps { |  | lists the policies for the crypto session |  |
| Policy\_no\_1 | Any value | a policy\_no that corresponds to the policy\_no of a SP payload |  |
| } |  |  |  |
| 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) |  |
| } |  |  |  |
| RAND Payload { |  | Addressed by '00001011'B in the 'Next payload' field of the previous payload |  |
| Next payload | Identifier for the next payload (NOTE 1) |  |  |
| RAND len | ‘00010000’B | At least 16 Bytes |  |
| RAND | 128-bit random number | 128-bit random number |  |
| } |  |  |  |
| IDRi payload { |  | Addressed by '00001110'B in the 'Next payload' field of the previous payload |  |
| Next payload | Identifier for the next payload (NOTE 1) |  |  |
| ID Role | 1 | Initiator (IDRi) |  |
| ID Type | 1 | URI |  |
| ID len | Length of ID Data |  |  |
| ID data | px\_MCPTT\_ID\_User\_A | MCPTT ID  See TS 33.180 [94] clause E.4.1 | MCPTT |
|  | px\_MCVideo\_ID\_User\_A | MCVideo ID  See TS 33.180 [94] clause E.4.1 | MCVIDEO |
|  | px\_MCData\_ID\_User\_A | MCData ID  See TS 33.180 [94] clause E.4.1 | MCDATA |
| } |  |  |  |
| IDRr payload { |  | Addressed by '00001110'B in the 'Next payload' field of the previous payload |  |
| Next payload | Identifier for the next payload (NOTE 1) |  |  |
| ID Role | 2 | Responder (IDRr) |  |
| ID Type | 1 | URI |  |
| ID len | Length of ID Data |  |  |
| ID data | 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) |  |
| } |  |  |  |
| 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. |  |
| } |  |  |  |
| { |  |  |  |
| Type | 20 | AEAD authentication tag length |  |
| length |  |  |  |
| value | 16 | 16 octets |  |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| SAKKE payload { |  | Addressed by '00011010'B in the 'Next payload' field of the previous payload |  |
| Next payload | Identifier for the next payload (NOTE 1) |  |  |
| SAKKE params { | 1 | Parameter Set 1 according to RFC 6509 [23], Appendix A |  |
| ID scheme | 2 | '3GPP MCX hashed UID' (33.180 [94] E.1.2) |  |
| SAKKE data length | Length of SAKKE data (in bytes) |  |  |
| SAKKE data | Encapsulated CSK | The CSK is encapsulated by using the public key (PubEncKey in KMS Certificate) and the UID generated from the MDSI of the MCX Domain (provided in IDRr) |  |
| } |  |  |  |
| SIGN (ECCSI) payload { |  | Addressed by '00000100'B in the 'Next payload' field of the previous payload |  |
| S type | 2 | ECCSI signature |  |
| S len | Length of the signature field (in bytes) | 12 bits |  |
| S data | Signature:  Shall be validated by the SS | The signature shall be validated according to RFC 3830 [24] clause 5.3 using the algorithm according to RFC 6507 [98] clause 5.2.2 using the UID generated from the MC Service user ID associated with the initiating user (provided in IDRi payload). |  |
| } |  |  |  |
| NOTE 1: MIKEY payloads may occur in any order apart from the header payload which is always the first payload and the signature payload which is always the last payload | | | |

##### - CSK distribution (MIKEY-SAKKE sent by the SS)

Table 5.5.9.1-1A: MIKEY-SAKKE I\_MESSAGE (CSK download sent by the SS)

| Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24] | | | |
| --- | --- | --- | --- |
| Field | Value/remark | Comment | Condition |
| MIKEY Common Header { | Any |  |  |
| version | ‘00000001’B |  |  |
| Data Type | ‘00011010’B | SAKKE msg (26) |  |
| Next payload | '00000101'B | Timestamp, T |  |
| V | ‘0’B |  |  |
| PRF func | ‘0000001’B | PRF-HMAC-SHA-256 |  |
| CSB ID | '0001xxxx ... xxxxxxxx'B | 32 bit CSK-ID: the 4 most significant bits indicate the purpose of the key, CSK = 0010, the other 28-bits are randomly generated (TS 33.180 [94] clause 5.2.2 and E.6.11) |  |
| #CS | '00000000'B | Number of crypto sessions in the CS ID map info: if #CS is 0 the default security policies shall be applied (TS 33.180 [94] E.1.2) |  |
| CS ID map type | 1 | See TS 33.180 [94] E.1.2 |  |
| CS ID map info | Not present | Present only if #CS > 0 |  |
| } |  |  |  |
| Timestamp Payload (T) { |  |  |  |
| Next payload | '00001011'B |  |  |
| TS Type | ‘00000000’B | NTP-UTC (0): 64-bits |  |
| TS Value | Current system time | 64bit UTC value representing the number of seconds since 1 January 1900 with respect to the Coordinated Universal Time (UTC) |  |
| } |  |  |  |
| RAND Payload { |  | Addressed by '00001011'B in the 'Next payload' field of the previous payload |  |
| Next payload | '00001110'B |  |  |
| RAND len | ‘00010000’B | At least 16 Bytes |  |
| RAND | Random value arbitrarily selected by the SS | 128-bit random number |  |
| } |  |  |  |
| IDRi payload { |  | Addressed by '00001110'B in the 'Next payload' field of the previous payload |  |
| Next payload | '00001110'B |  |  |
| ID Role | 1 | Initiator (IDRi) |  |
| ID Type | 1 | URI |  |
| ID len | Length of ID Data |  |  |
| ID data | tsc\_MCPTT\_PublicServiceId\_A |  | MCPTT |
|  | tsc\_MCVideo\_PublicServiceId\_A |  | MCVIDEO |
|  | tsc\_MCData\_PublicServiceId\_A |  | MCDATA |
| } |  |  |  |
| IDRr payload { |  | Addressed by '00001110'B in the 'Next payload' field of the previous payload |  |
| Next payload | '00001110'B |  |  |
| ID Role | 2 | Responder (IDRr) |  |
| ID Type | 1 | URI |  |
| ID len | Length of ID Data |  |  |
| ID data | px\_MCPTT\_ID\_User\_A | MCPTT ID  See TS 33.180 [94] clause E.4.1 | MCPTT |
|  | px\_MCVideo\_ID\_User\_A | MCVideo ID  See TS 33.180 [94] clause E.4.1 | MCVIDEO |
|  | px\_MCData\_ID\_User\_A | MCData ID  See TS 33.180 [94] clause E.4.1 | MCDATA |
| } |  |  |  |
| IDRkmsi payload { |  | Addressed by '00001110'B in the 'Next payload' field of the previous payload |  |
| Next payload | '00001110'B |  |  |
| ID Role | 6 | Initiator's KMS (IDRkmsi) |  |
| ID Type | 1 | URI |  |
| ID len | Length of ID Data |  |  |
| ID data | tsc\_MCX\_KMS\_Hostname | KMS of the initiating user (UE) |  |
| } |  |  |  |
| IDRkmsr payload { |  | Addressed by '00001110'B in the 'Next payload' field of the previous payload |  |
| Next payload | '00011010'B |  |  |
| ID Role | 7 | Responder's KMS (IDRkmsr) |  |
| ID Type | 1 | URI |  |
| ID len | Length of ID Data |  |  |
| ID data | tsc\_MCX\_KMS\_Hostname | KMS of the responder (MCX domain) |  |
| } |  |  |  |
| Security Properties payload | Not present | If not present (#CS == 0) then the default security profile defined in Annex E.4.2 of TS 33.180 [94] shall be used |  |
| SAKKE payload { |  | Addressed by '00011010'B in the 'Next payload' field of the previous payload |  |
| Next payload | '00000100'B |  |  |
| SAKKE params { | 1 | Parameter Set 1 according to RFC 6509 [23], Appendix A |  |
| ID scheme | 2 | '3GPP MCX hashed UID' (33.180 [94] E.1.2) |  |
| SAKKE data length | Length of SAKKE data (in bytes) |  |  |
| SAKKE data | Encapsulated CSK | The CSK is encapsulated by using the public key (PubEncKey in KMS Certificate) and the UID generated from the MDSI of the MCX Domain (provided in IDRr) |  |
| } |  |  |  |
| SIGN (ECCSI) payload { |  | Addressed by '00000100'B in the 'Next payload' field of the previous payload |  |
| S type | 2 | ECCSI signature |  |
| S len | Length of the signature field (in bytes) | 12 bits |  |
| S data | Signature | The signature shall be validated according to RFC 3830 [24] clause 5.3 using the algorithm according to RFC 6507 [98] clause 5.2.2 using the UID generated from the ID associated with the initiating user (provided in IDRi payload). |  |
| } |  |  |  |

##### - Private call (MIKEY-SAKKE sent by the SS)

Table 5.5.9.1-2: MIKEY-SAKKE I\_MESSAGE (Private call) by the SS

| Derivation path: RFC 6509 [23], RFC 6043 [25], RFC 3830 [24] | | | |
| --- | --- | --- | --- |
| Field | Value/remark | Comment | Condition |
| **MIKEY Common Header {** |  |  |  |
| version | ‘00000001’B |  |  |
| Data Type | ‘00011010’B | SAKKE msg (26) |  |
| Next payload | ‘00000101’B | Next payload is timestamp |  |
| V | ‘0’B |  |  |
| PRF func | ‘0000001’B | PRF-HMAC-SHA-256 |  |
| CSB ID | '0001xxxx ... xxxxxxxx'B | 32-bit PCK-ID  The 4 most significant bits of the PCK-ID indicate the purpose of the PCK is to protect Private call communications, the other 28-bits are randomly generated |  |
| #CS | ‘00000000’B | the number of crypto sessions in the CS ID map info. |  |
| CS ID map type | 1 | empty map |  |
| CS ID map Info | not present |  |  |
| } |  |  |  |
| **Timestamp Payload (T) {** |  |  |  |
| Next payload | ‘00001011’B | Next payload is RAND |  |
| TS Type | ‘00000000’B | NTP-UTC (0): 64-bits |  |
| TS Value | Current system time | 64bit UTC value representing the number of seconds since 0h on 1 January 1900 with respect to the Coordinated Universal Time (UTC) |  |
| } |  |  |  |
| **RAND Payload {** |  |  |  |
| Next payload | ‘00001110’B | Next payload is IDRi |  |
| RAND len | ‘00010000’B | 16 Bytes RAND |  |
| RAND | 128-bit random number |  |  |
| } |  |  |  |
| **IDRi payload {** |  |  |  |
| Next payload | ‘00001110’B | Next payload is IDRi |  |
| ID Role | 1 | Initiator (IDRi) |  |
| ID Type | 0 | URI |  |
| ID len | Length of ID Data |  |  |
| ID data | px\_MCPTT\_ID\_User\_B | MCPTT ID associated with the initiating user | MCPTT |
|  | px\_MCVideo\_ID\_User\_B | MCVideo ID  See TS 33.180 [94] clause E.4.1 | MCVIDEO |
|  | px\_MCData\_ID\_User\_B | MCData ID  See TS 33.180 [94] clause E.4.1 | MCDATA |
| } |  |  |  |
| IDRr payload { |  |  |  |
| Next payload | ‘00001110’B | Next payload is IDRkmsi |  |
| ID Role | 2 | Responder (IDRr) |  |
| ID Type | 0 |  |  |
| ID len | Length of ID Data |  |  |
| ID data | px\_MCPTT\_ID\_User\_A | MCPTT ID associated to the receiving user | MCPTT |
|  | px\_MCVideo\_ID\_User\_A | MDSI of the MCVideo Domain | MCVIDEO |
|  | px\_MCData\_ID\_User\_A | MDSI of the MCData Domain | MCDATA |
| } |  |  |  |
| **IDRkmsi payload {** |  |  |  |
| Next payload | ‘00001110’B | Next payload is IDRkmsr |  |
| ID Role | 6 | Initiator's KMS (IDRkmsi) |  |
| ID Type | 0 |  |  |
| ID len | Length of ID Data |  |  |
| ID data | tsc\_MCX\_KMS\_Hostname | KMS of the initiating user |  |
| } |  |  |  |
| **IDRkmsr payload {** |  |  |  |
| Next payload | '00011010'B | Next payload is SAKKE (26) |  |
| ID Role | 7 | Responder's KMS (IDRkmsr) |  |
| ID Type | 0 |  |  |
| ID len | Length of ID Data |  |  |
| ID data | tsc\_MCX\_KMS\_Hostname | KMS of the responding user (UE) |  |
| } |  |  |  |
| **SAKKE payload {** |  |  |  |
| Next payload | ‘00000100’B | Next payload is SIGN |  |
| SAKKE params { | 1 | Parameter Set 1 according to RFC 6509 [23], Appendix A |  |
| ID Scheme | 2 | '3GPP MCX hashed UID' (33.180 [94] E.1.2) |  |
| SAKKE data length | Length of SAKKE data (in bytes) | 16 bits |  |
| SAKKE data | Encapsulated PCK | The PCK is encapsulated by using the public key (PubEncKey in KMS Certificate) and the UID generated from the MC Service user ID of the terminating user |  |
| } |  |  |  |
| SIGN (ECCSI) payload { |  |  |  |
| S type | 2 | ECCSI signature |  |
| S len | Length of the signature field (in bytes) | 12 bits |  |
| 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 |  |
| 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 |  |
| TS Value | Any value | 64bit UTC value representing the number of seconds since 0h on 1 January 1900 with respect to the Coordinated Universal Time (UTC) |  |
| } |  |  |  |
| RAND Payload { |  | Addressed by '00001011'B in the 'Next payload' field of the previous payload |  |
| Next payload | Identifier for the next payload (NOTE 1) |  |  |
| RAND len | ‘00010000’B | 16 Bytes RAND |  |
| RAND | Any value | 128-bit random number |  |
| } |  |  |  |
| IDRi payload { |  | Addressed by '00001110'B in the 'Next payload' field of the previous payload |  |
| Next payload | Identifier for the next payload (NOTE 1) |  |  |
| ID Role | 1 | Initiator (IDRi) |  |
| ID Type | 1 | URI |  |
| ID len | Length of ID Data |  |  |
| ID data | px\_MCPTT\_ID\_User\_A | MCPTT ID associated with the initiating user | MCPTT |
|  | px\_MCVideo\_ID\_User\_A | MCVideo ID  See TS 33.180 [94] clause E.4.1 | MCVIDEO |
|  | px\_MCData\_ID\_User\_A | MCData ID  See TS 33.180 [94] clause E.4.1 | MCDATA |
| } |  |  |  |
| IDRr payload { |  | Addressed by '00001110'B in the 'Next payload' field of the previous payload |  |
| Next payload | Identifier for the next payload (NOTE 1) |  |  |
| ID Role | 2 | Responder (IDRr) |  |
| ID Type | 1 | URI |  |
| ID len | Length of ID Data |  |  |
| ID data | px\_MCPTT\_ID\_User\_B | MCPTT ID associated to the receiving user | MCPTT |
|  | px\_MCVideo\_ID\_User\_B | MDSI of the MCVideo Domain | MCVIDEO |
|  | px\_MCData\_ID\_User\_B | MDSI of the MCData Domain | MCDATA |
| } |  |  |  |
| IDRkmsi payload { |  | Addressed by '00001110'B in the 'Next payload' field of the previous payload |  |
| 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 |  |  |  |
| 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 |  |
| 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 |  |  |
| ID data | px\_MCPTT\_ID\_User\_A | MCPTT ID associated to the group management client | MCPTT |
|  | px\_MCVideo\_ID\_User\_A | MCVideo ID associated to the group management client | MCVIDEO |
|  | px\_MCData\_ID\_User\_A | MCData ID associated to the group management client | MCDATA |
| } |  |  |  |
| **IDRkmsi payload {** |  |  |  |
| Next payload | ‘00001110’B | Next payload is IDRkmsr |  |
| ID Role | 6 | Initiator's KMS (IDRkmsi) |  |
| ID Type | 1 | URI |  |
| ID len | Length of ID Data |  |  |
| ID data | tsc\_MCX\_KMS\_Hostname |  |  |
| } |  |  |  |
| **IDRkmsr payload {** |  |  |  |
| Next payload | ‘00011010’B | Next payload is SAKKE (26) |  |
| ID Role | 7 | Responder's KMS (IDRkmsr) |  |
| ID Type | 1 |  |  |
| ID len | Length of ID Data |  |  |
| ID data | tsc\_MCX\_KMS\_Hostname | KMS of the UE |  |
| } |  |  |  |
| **SAKKE payload {** |  |  |  |
| Next payload | ‘00010101’B | Next payload is General Extension |  |
| SAKKE params | 1 | Parameter Set 1 according to RFC 6509 [23], Appendix A |  |
| ID Scheme | 2 | '3GPP MCX hashed UID' (33.180 [94] E.1.2) |  |
| SAKKE data length | Length of SAKKE data (in bytes) |  |  |
| SAKKE data | Encapsulated GMK | The GMK is encapsulated by using the SAKKE public key and the UID generated from the MC Service user ID of the group management client (provided in IDRr) |  |
| } |  |  |  |
| **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 |  |
| Activation Time | 0 | The time in UTC at which the associated GMK is to be made active for transmission in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). It shall be 5 octets in length.  A value of 0 shall imply the activation time is the timestamp of the received MIKEY I\_MESSAGE |  |
| Expiry Time | 0 | The 'Expiry time' element shall define the time in UTC at which the associated key shall no longer be used in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). It shall be 5 octets in length.  A value of 0 shall imply the key shall not expire. |  |
| Text | "" | no text:  Text element shall contain Length sub-element with the value 0 (see TS 33.180 [94] E.6.5) |  |
| Group IDs { |  |  |  |
| Number of Group IDs | '1' |  |  |
| Group ID | px\_MCPTT\_Group\_A\_ID | The ID for the group associated with the key. | MCPTT |
|  | px\_MCVideo\_Group\_A\_ID | The ID for the group associated with the key. | MCVIDEO |
|  | px\_MCData\_Group\_A\_ID | The ID for the group associated with the key. | MCDATA |
| } |  |  |  |
| } |  |  |  |
| } |  |  |  |
| MIKEY\_SAKKE I-MESSAGE | not present |  |  |
| } |  |  |  |
| SIGN (ECCSI) payload { |  |  |  |
| 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 | tsc\_MCPTT\_PublicServiceId\_A | The public service identity identifying the participating MCPTT function |  |
| } |  |  |  |
| IDRr payload { |  |  |  |
| Next payload | ‘00001110’B | Next payload is IDRkmsi |  |
| ID Role | 2 | Responder (IDRr) |  |
| 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 |  |
| 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 | tsc\_MCPTT\_PublicServiceId\_A | The public service identity identifying the participating MCPTT function |  |
| } |  |  |  |
| **IDRr payload {** |  |  |  |
| Next payload | ‘00001110’B | Next payload is IDRkmsi |  |
| ID Role | 2 | Responder (IDRr) |  |
| 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 |  |
| 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)

EFUST (USIM Service Table)

| Services | Discription | Activated | Version |
| --- | --- | --- | --- |
| Service n°109 | Mission Critical Services | Yes |  |
| NOTE: Only the relevant MCS related services indicated. | | | |

EFMST (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 |  |

EFMCS\_CONFIG (MCS configuration data)

This file shall be present.

Encoded in XML format (as specified in the MCS Service Table).

|  |  |  |
| --- | --- | --- |
| MCPTT configuration data objects | Tag Values | Condition |
| MCPTT UE configuration data | '80' | Shall be present.  The content of the MCPTT UE configuration data object shall be as specified in Table 5.5.8.2-1. |
| MCPTT user profile data | '81' | Shall be present.  The content of the MCPTT User configuration data object shall be as specified in Table 5.5.8.3-1. |
| MCS Group configuration data | '82' | Shall be present.  The content of the MCS Group configuration data object shall be as specified in Table 5.5.7.1 for MCPTT, Table 5.5.7.2-1 for MCVideo, and Table 5.5.7.3-1 for MCData. |
| MCPTT Service configuration data | '83' | Shall be present.  The content of the MCPTT Server configuration data object shall be as specified in Table 5.5.8.4-1. |
| MCS UE initial configuration data | '84' | Shall be present.  The content of the MCS UE initial configuration data object shall be as specified in Table 5.5.8.1-1 for MCPTT, Table 5.5.8.5-1 for MCVideo, and Table 5.5.8.9-1 for MCData, |
| MCData UE configuration data | '85' | Shall be present.  The content of the MCData UE configuration data object shall be as specified in Table 5.5.8.10-1. |
| MCData user profile data | '86' | Shall be present.  The content of the MCData user profile data object shall be as specified in Table 5.5.8.11-1. |
| MCData service configuration data | '87' | Shall be present.  The content of the MCData service configuration data object shall be as specified in Table 5.5.8.12-1. |
| MCVideo UE configuration data | '88' | Shall be present.  The content of the MCVideo UE configuration data object shall be as specified in Table 5.5.8.6-1. |
| MCVideo user profile data | '89' | Shall be present.  The content of the MCVideo user profile data object shall be as specified in Table 5.5.8.7-1. |
| MCVideo service configuration data | '8A' | Shall be present.  The content of the MCVideo service configuration data object shall be as specified in Table 5.5.8.8-1. |

### 5.5.11 Default MCVideo Transmission Control Messages and other Information Elements

#### 5.5.11.0 General

The following conditions apply throughout clause 5.5.11:

Table 5.5.11.0-1: Conditions

|  |  |
| --- | --- |
| Condition | Explanation |
| FA | IE for when an active Functional Alias is used |
| ACK | Message requests a Transmission control Ack |
| UPLINK | The message is sent from the UE |
| DOWNLINK | The message is sent from the SS |
| NOTE: For further conditions see table 5.5.1-1 | |

Considerations in regard to describing specific values:

- SSRC

- Synchronization SouRCe (SSRC) values are used in most of the messages specified in clause 5.5.11. 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.

#### 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 |
| RTCP-header |  |  |  |  |
| Subtype | “00000” | Transmission Request | TS 24.581 [88] clause 9.2.4 and Table 9.2.2.1-1 |  |
|  | “10000” |  |  | ACK |
| SSRC | The SSRC of the UE | The SSRC of the transmission participant sending the Transmission Request message. | IETF RFC 3550 [76]. |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV0 |  |  |  |
| **Transmission Priority** | If present |  | TS 24.581 [88] clause 9.2.3.2 |  |
| Transmission Priority Value | Any allowed value | If present, a value between '0' and '255' where '0' is the lowest priority and '255' is the highest priority.  If the Transmission Priority field is not included in the message the default priority is used as the Transmission Priority value. The value of the default priority is '0'. The default priority is sometimes referred to as normal priority. |  |  |
| **User ID** | Not Present |  |  |  |
| **User ID** |  | The User ID field is used in off-network only. The User ID field carries the MCVideo ID of the transmission participant sending the Transmission Release message. | TS 24.581 [88] clause 9.2.3.8 | OFF-NETWORK |
| User ID | px\_MCVideo\_ID\_User\_A |  |  |  |
| **Transmission Indicator** |  |  | TS 24.581 [88] clause 9.2.3.11 |  |
| Transmission Indicator | "1000000000000000" | Normal call |  |  |
|  | "0001000000000000" | Emergency call |  | EMERGENCY-CALL |
|  | "0000100000000000" | Imminent peril call |  | IMMPERIL-CALL |
| **Functional Alias** | Not present |  |  |  |
|  | px\_MCVideo\_ID\_FA\_B | functional alias URI of the transmitting user | TS 24.581 [88] clause 9.2.3.21 | FA |

##### 5.5.11.1.2 Transmission Release

Table 5.5.11.1.2-1: Transmission Release

| Derivation Path: TS 24.581 [88] Table 9.2.7-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| RTCP-header |  |  |  |  |
| Subtype | “00010” | Transmission Release | TS 24.581 [88] clause 9.2.7 and Table 9.2.2.1-1 |  |
|  | “10010” |  |  | ACK |
| SSRC | The SSRC of the UE | The SSRC of the transmission participant with permission to send media. | IETF RFC 3550 [76]. |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV0 |  |  |  |
| **User ID** | Not Present |  |  |  |
| **User ID** |  | The User ID field is used in off-network only. The User ID field carries the MCVideo ID of the transmission participant sending the Transmission Release message. | TS 24.581 [88] clause 9.2.3.8 | OFF-NETWORK |
| User ID | px\_MCVideo\_ID\_User\_A |  |  |  |
| **Transmission Indicator** |  |  |  |  |
| Transmission Indicator | "1000000000000000" | Normal call | TS 24.581 [88] clause 9.2.3.11 |  |
|  | "0001000000000000" | Emergency call |  | EMERGENCY-CALL |
|  | "0000100000000000" | Imminent peril call |  | IMMPERIL-CALL |

##### 5.5.11.1.3 Queue Position Request

Table 5.5.11.1.3-1: Queue Position Request

| Derivation Path: TS 24.581 [88] Table 9.2.11-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “00011” | Queue Position Request | TS 24.581 [88] clause 9.2.11 and 9.2.2.1-1 |  |
|  | “10011” |  |  | ACK |
| SSRC | The SSRC of the UE | The SSRC of the transmission participant requesting information about its position in the transmission request queue. | IETF RFC 3550 [76], |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV0 |  |  |  |
| **User ID** | Not Present |  |  |  |
| **User ID** |  |  | TS 24.581 [88] clause 9.2.3.8 | OFF-NETWORK |
| User ID | px\_MCVideo\_ID\_User\_A |  |  |  |
| **Track Info** | Not present | The MCVideo call does not involve a non-controlling MCVideo function | TS 24.581 [88] clause 9.2.3.13 |  |

##### 5.5.11.1.4 Receive Media Request

Table 5.5.11.1.4-1: Receive Media Request

| Derivation Path: TS 24.581 [88] Table 9.2.14-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “00100” | Receive Media Request | TS 24.581 [88] clause 9.2.14 and 9.2.2.1-1 |  |
|  | “10100” |  |  | ACK |
| SSRC | The SSRC of the UE | The SSRC of the transmission participant requesting the reception of the media from another user. | IETF RFC 3550 [76] |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV0 |  |  |  |
| **User ID** |  | The User ID field is used to carry the identity of the user who is requesting the reception of the media. |  |  |
| User ID | px\_MCVideo\_ID\_User\_A |  | TS 24.581 [88] Table 9.2.3.8-2 |  |
| **SSRC of transmitter** | SSRC of the emulated client as provided by the SS in the Media Transmission Notification message | The SSRC of the user transmitting the media |  |  |
| **Transmission Indicator** |  |  | TS 24.581 [88] clause 9.2.3.11 |  |
| Transmission Indicator | "1000000000000000" | Normal call |  |  |
|  | "0001000000000000" | Emergency call |  | EMERGENCY-CALL |
|  | "0000100000000000" | Imminent peril call |  | IMMPERIL-CALL |
| **Reception Priority** | if present | Describes the level of reception priority requested in a Reception Request message or granted in a Reception Granted message. The max reception priority that can be requested in a Reception Request message is negotiated between the transmission control participant and the transmission control server | TS 24.581 [88] clause 9.2.3.19 and 6.2.5.3.3 |  |
| Reception Priority value | any allowed value | The reception priority (0 to 255) where 0 is the lowest reception priority and 255 is the highest reception priority. If the Reception Priority field is not included in the message the default reception priority is used as the Reception Priority value. The value of the default reception priority is 0. The default reception priority is sometimes referred to as normal reception priority. |  |  |
| **Track Info** | Not present | The MCVideo call does not involve a non-controlling MCVideo function | TS 24.581 [88] clause 9.2.3.13 |  |
| Functional Alias | Not present |  |  |  |
|  | px\_MCVideo\_ID\_FA\_B | functional alias URI of the transmitting user | TS 24.581 [88]clause 9.2.3.21 | FA |

##### 5.5.11.1.5 Void

##### 5.5.11.1.6 Remote Transmission Request

Table 5.5.11.1.6-1: Remote Transmission Request

| Derivation Path: TS 24.581 [88] Table 9.2.22-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “00111” | Remote Transmission Request | TS 24.581 [88] clause 9.2.22 and Table 9.2.2.1-1 |  |
|  | “10111” |  |  | ACK |
| SSRC | The SSRC of the UE | The SSRC of the transmission participant requesting the reception of the media from another user. | IETF RFC 3550 [76]. |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV0 |  |  |  |
| **Remote ID** |  | Carries the identity of the user who remotely initiated the media transmission of another user. | TS 24.581 [88] clause 9.2.3.8 |  |
| User ID | px\_MCVideo\_ID\_User\_B |  |  |  |
| **User ID** |  | Carries the identity of the user whose media transmission is requested. | TS 24.581 [88] clause 9.2.3.8 |  |
| User ID | px\_MCVideo\_ID\_User\_A |  |  |  |

##### 5.5.11.1.7 Remote Transmission Cancel Request

Table 5.5.11.1.7-1: Remote Transmission Cancel Request

| Derivation Path: TS 24.581 [88] Table 9.2.24-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “01000” | Remote transmission cancel request | TS 24.581 [88] clause 9.2.24 and Table 9.2.2.1-1 |  |
|  | “11000” |  |  | ACK |
| SSRC | The SSRC of the UE | Editor's note: TS 24.581 specifies "SSRC of the transmission participant requesting the reception of the media from another user" | IETF RFC 3550 [76]. |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV0 |  |  |  |
| **User ID** |  | Carries the identity of the user whose media transmission is requested for cancellation. | TS 24.581 [88] clause 9.2.3.8 |  |
| User ID | px\_MCVideo\_ID\_User\_A |  |  |  |

#### 5.5.11.2 Transmission Control Specific Messages Sent by the Transmission Control Server

##### 5.5.11.2.1 Transmission Granted

Table 5.5.11.2.1-1: Transmission Granted

| Derivation Path: TS 24.581 [88] Table 9.2.5-1 | | | | | |
| --- | --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition | |
| **RTCP** |  |  |  |  | |
| Subtype | “00000” | Transmission granted | TS 24.581 [88] clause 9.2.5 and 9.2.2.1-2 |  | |
|  | “10000” |  |  | ACK | |
| SSRC | The SSRC of the SS | The SSRC of the Transmission Control server | IETF RFC 3550 [76]. |  |
|  | The SSRC of the message sender | The SSRC of the transmission arbitrator |  | OFF-NETWORK |
| name | MCV1 | Transmission Control messages sent by the transmission control server and transmission control participant |  |  |
| **Duration** |  |  | TS 24.581 [88] clause 9.2.3.3 |  |
| Duration | "00000000 10000000" | 128 sec (an arbitrary value) |  |  |
| **SSRC of granted transmission participant** | The SSRC of the intended recipient of the message |  | 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 |  |  |  |
| **User ID** |  |  | TS 24.581 [88] clause 9.2.3.8 | OFF-NETWORK |
| User ID | px\_MCVideo\_ID\_User\_A |  |  |  |
| **Queue Size** | Not present |  |  |  |
| **Queue Size** | "0" | the number of queued MCVideo clients in the MCVideo call | TS 24.581 [88] clause 9.2.3.15 | OFF-NETWORK |
| **SSRC of queued floor participant** | Not present |  |  |  |
|  | The SSRC of queued transmission participant |  | IETF RFC 3550 [76] | OFF-NETWORK |
| **Queued User ID** | Not present |  |  |  |
|  | px\_MCVideo\_ID\_User\_C | MCVideo ID of the transmission participant in the queue | TS 24.581 [88] clause 9.2.3.14 | OFF-NETWORK |
| **Queue Info** | Not present |  |  |  |
| **Queue Info** |  | queue position and granted transmission priority in the queue |  | OFF-NETWORK |
| **queue position info** | "00000001" |  | TS 24.581 [88] clause 9.2.3.5 |  |
| **queue priority level** | "00000000" |  | TS 24.581 [88] clause 9.2.3.2 |  |
| **Transmission Indicator** |  |  | TS 24.581 [88] Table 9.2.3.11-2 |  |
| Transmission Indicator | "1000000000000000" | Normal call |  |  |
|  | "0001000000000000" | Emergency call |  | EMERGENCY-CALL |
|  | "0000100000000000" | Imminent peril call |  | IMMPERIL-CALL |

##### 5.5.11.2.2 Transmission Rejected

Table 5.5.11.2.2-1: Transmission Rejected

| Derivation Path: TS 24.581 [88] Table 9.2.6-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “00001” | Transmission rejected | TS 24.581 [88] clause 9.2.6 and 9.2.2.1-2 |  |
|  | “10001” |  |  | ACK |
| SSRC | The SSRC of the SS | The SSRC of the Transmission Control server | IETF RFC 3550 [76] |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV1 |  |  |  |
| **Reject Cause** |  | Includes the reason for the rejecting the transmission request and can be followed by a text-string explaining why the transmission request was rejected. Therefore the length of the packet will vary depending on the size of the application dependent field. | TS 24.581 [88] clause 9.2.3.4 |  |
| Reject Cause | "255" | Th<Reject cause> value set to '255' indicates that the transmission control server does not grant the transmission request due to the transmission control server local policy. | TS 24.581 [88] clause 9.2.6.2 |  |
| Reject Cause Phrase | “Other reason” | A text string encoded the text string in the SDES item CNAME. | IETF RFC 3550 [76] |  |
| **User ID** | Not present |  |  |  |
| **User ID** |  | The User ID field is used in off-network only. The User ID carries the MCVideo ID of the requesting transmission participant to which the Transmission Rejected message is sent. | TS 24.581 [88] clause 9.2.3.8 | OFF-NETWORK |
| User ID | px\_MCVideo\_ID\_User\_A |  |  |  |
| **Transmission Indicator** |  |  | TS 24.581 [88] clause 9.2.3.11 |  |
| Transmission Indicator | "1000000000000000" | Normal call |  |  |
|  | "0001000000000000" | Emergency call |  | EMERGENCY-CALL |
|  | "0000100000000000" | Imminent peril call |  | IMMPERIL-CALL |

##### 5.5.11.2.3 Transmission Arbitration Taken

Table 5.5.11.2.3-1: Transmission Arbitration Taken

| Derivation Path: TS 24.581 [88] Table 9.2.8-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “00010” | Transmission Arbitration Taken | TS 24.581 [88] clause 9.2.8 and 9.2.2.1-2 |  |
|  | “10010” |  |  | ACK |
| SSRC | The SSRC of the SS | The SSRC of the Transmission Control server | IETF  RFC 3550 [76] |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV1 |  |  |  |
| **Granted Party's Identity** |  | Identifies the MCVideo user that is granted to send media. | TS 24.581 [88] clause 9.2.3.6 |  |
| Granted Party's Identity | px\_MCVideo\_ID\_User\_A |  |  |  |
| **Permission to Request the Transmission** |  | Indicates whether receiving parties are allowed to request the transmission. | TS 24.581 [88] clause9.2.3.7 |  |
| Permission to Request the Transmission | "1" | Coded as follows:  0 The receiver is not permitted to request transmission.  1 The receiver is permitted to request transmission |  |  |
| **User ID** | Not Present |  |  |  |
| **User ID** |  | The User ID field is used in off-network only. The User ID carries the MCVideo ID of the transmission participant sending the Transmission Arbitration Taken message. | TS 24.581 [88] clause 9.2.3.8 | OFF-NETWORK |
| User ID | px\_MCVideo\_ID\_User\_A |  |  |  |
| **Message Sequence Number** |  |  | TS 24.581 [88] clause 9.2.3.9 |  |
| Message Sequence Number | The value sent in the previous Transmission Arbitration Taken message, if any, increased by 1 | The <Message Sequence Number> value can be between '0' and '65535'. When the '65535' value is reached, the <Message Sequence Number> value starts from '0' again. |  |  |
| **Transmission Indicator** |  |  | TS 24.581 [88] clause 9.2.3.11 |  |
| Transmission Indicator | "1000000000000000" | Normal call. |  |  |
|  | "0001000000000000" | Emergency call |  | EMERGENCY-CALL |
|  | "0000100000000000" | Imminent peril call |  | IMMPERIL-CALL |
| **SSRC of Granted Transmission Participant** | SSRC of granted transmission participant: | Notation in accordance with clause 5.5.11.0. | IETF RFC 3550 [76] |  |

##### 5.5.11.2.4 Transmission Arbitration 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 | “00011” | Transmission Arbitration Release | TS 24.581 [88] clause 9.2.9 and 9.2.2.1-2 |  |
|  | “10011” |  |  | ACK |
| SSRC | The SSRC of the SS | The SSRC of the Transmission Control server | IETF RFC 3550 [76] |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| **name** | MCV1 |  |  |  |
| **Granted Party's Identity** |  | Identifies the MCVideo user that is granted to send media. | TS 24.581 [88] clause 9.2.3.6 |  |
| Granted Party's Identity | px\_MCVideo\_ID\_User\_A |  |  |  |
| **User ID** | Not Present |  |  |  |
| **User ID** |  | The User ID field is used in off-network only. The User ID carries the MCVideo ID of the transmission participant sending the Transmission Arbitration Release message. | TS 24.581 [88] clause 9.2.3.8 | OFF-NETWORK |
| User ID | px\_MCVideo\_ID\_User\_A |  |  |  |
| **Message Sequence Number** |  |  | TS 24.581 [88] clause 9.2.3.9 |  |
| Message Sequence Number | The value sent in the previous Transmission Arbitration Release message, if any, increased by 1 | The <Message Sequence Number> value can be between '0' and '65535'. When the '65535' value is reached, the <Message Sequence Number> value starts from '0' again. |  |  |
| **Transmission Indicator** |  |  | TS 24.581 [88] clause 9.2.3.11 |  |
| Transmission Indicator | "1000000000000000" | Normal call |  |  |
|  | "0001000000000000" | Emergency call |  | EMERGENCY-CALL |
|  | "0000100000000000" | Imminent peril call |  | IMMPERIL-CALL |
| **SSRC of Granted Transmission Participant** | The SSRC of the intended recipient of the message | Notation in accordance with clause 5.5.11.0. | IETF RFC 3550 [76] |  |

##### 5.5.11.2.5 Transmission Revoked

Table 5.5.11.2.5-1: Transmission Revoked

| Derivation Path: TS 24.581 [88] Table 9.2.10-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “00100” | Transmission Revoked | TS 24.581 [88] clause 9.2.10 and 9.2.2.1-2 |  |
|  | “10100” |  |  | ACK |
| SSRC | The SSRC of the SS | The SSRC of the Transmission Control server | IETF  RFC 3550 [76] |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV1 |  |  |  |
| **Reject Cause** |  | Message includes <Reject Cause> cause value in the Reject Cause field explaining why the transmission control server wants the transmission participant to stop sending media and can be followed by additional information. Therefore the length of the packet can vary depending on the value of the rejection cause. | TS 24.581 [88] clause 9.2.3.4 |  |
| Reject Cause Value | 7 | The <Reject Cause> value set to 7 indicates that the MCVideo client's permission to send a media is being queued. No additional information is included. | TS 24.581 [88] clause 9.2.10.2 |  |
| Reject Cause Phrase | "Queue the transmission" | A text string encoded the text string in the SDES item CNAME. | TS 24.581 [88] clause 9.2.10.2 |  |
| **Transmission Indicator** |  |  | TS 24.581 [88] clause 9.2.3.11 |  |
| Transmission Indicator | "1000000000000000" | Normal call |  |  |
|  | "0001000000000000" | Emergency call |  | EMERGENCY-CALL |
|  | "0000100000000000" | Imminent peril call |  | IMMPERIL-CALL |

##### 5.5.11.2.6 Queue Position Info

Table 5.5.11.2.6-1: Queue Position Info

| Derivation Path: TS 24.581 [88] Table 9.2.12-1 | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Information Element | | Value/remark | | Comment | | Reference | | Condition | |
| **RTCP** | |  | |  | |  | |  | |
| Subtype | | “00101” | | Queue Position Info | | TS 24.581 [88] clause 9.2.12 and 9.2.2.1-2 | |  | |
|  | | “10101” | |  | |  | | ACK | |
| SSRC | | The SSRC of the SS | | The SSRC of the Transmission Control server | | IETF  RFC 3550 [76] | |  | |
|  | | The SSRC of the message sender | |  | |  | | OFF-NETWORK | |
| name | | MCV1 | |  | |  | |  | |
| **User ID** | Not present | |  | |  | |  | |
| **User ID** | |  | | The User ID field is used in off-network only. The User ID field carries the MCVideo user ID of the transmission participant sending the Queue Position Info message. | | TS 24.581 [88] clause 9.2.3.8 | | OFF-NETWORK | |
| User ID | | px\_MCVideo\_ID\_User\_A | |  | |  | |  | |
| **SSRC of Queued Transmission Participant** | | Not present | |  | |  | |  | |
| **SSRC of Queued Transmission Participant** | | The SSRC of the queued transmission participant | | Applicable only in off-network and shall carry the SSRC of the queued transmission participant. | | IETF RFC 3550 [76]. | | OFF-NETWORK | |
| **Queued User ID** | Not present | |  | |  | |  | |
| **Queued User ID** | | px\_MCVIDEO\_ID\_User\_B | | Used in off-network only. The Queued User ID field carries the MCVideo ID of the queued transmission control participant. | | TS 24.581 [88] clause 9.2.3.8 | | OFF-NETWORK | |
| **Queue Info** | |  | | Defines the queue position and granted transmission control priority in the queue. | | TS 24.581 [88] clause 9.2.3.5 | |  | |
| Queue Position Info | "1" | | value is a binary value | |  | |  | |
| Queue Priority Level | "0" | | value consists of 8 bit parameter giving the transmission priority. The value of the default priority is ‘0’. The default priority is sometimes referred to as normal priority. | | TS 24.581 [88] clause 9.2.3.2 | |  | |
| **Track Info** | | Not present | | The MCVideo call does not involve a non-controlling MCVideo function | | TS 24.581 [88] clause 9.2.3.13 | |  | |
| **Transmission Control Indicator** | |  | |  | | TS 24.581 [88] clause 9.2.3.11 | |  | |
| Transmission Indicator | | "1000000000000000" | | Normal call | |  | |  | |
|  | | "0001000000000000" | | Emergency call | |  | | EMERGENCY-CALL | |
|  | | "0000100000000000" | | Imminent peril call | |  | | IMMPERIL-CALL | |

##### 5.5.11.2.7 Media Transmission Notification

Table 5.5.11.2.7-1: Media Transmission Notification

| Derivation Path: TS 24.581 [88] Table 9.2.13-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “00110” | Media Transmission Notification | TS 24.581 [88] clause 9.2.13 and 9.2.2.1-2 |  |
|  | “10110” |  |  | ACK |
| SSRC | The SSRC of the SS | The SSRC of the Transmission Control server | IETF  RFC 3550 [76] |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV1 |  |  |  |
| **User ID** |  | User ID of the user transmitting the media | TS 24.581 [88] clause 9.2.3.8 |  |
| User ID | px\_MCVideo\_ID\_User\_B |  |  |  |
| **SSRC of transmitter** | SSRC of the emulated client (client of user B, value arbitrarily selected by the SS) | The SSRC of transmitter field carries the SSRC of the user transmitting the media |  |  |
| **Permission to Request the Transmission** |  | Indicates whether receiving parties are allowed to request the transmission. | TS 24.581 [88] clause 9.2.3.7 |  |
| Permission to Request the Transmission | "1" | Coded as follows:  0 The receiver is not permitted to request transmission.  1 The receiver is permitted to request transmission |  |  |
| **Transmission Indicator** |  |  | TS 24.581 [88] clause 9.2.3.11 |  |
| Transmission Indicator | "1000000000000000" | Normal Call |  |  |
|  | "0001000000000000" | Emergency call |  | EMERGENCY-CALL |
|  | "0000100000000000" | Imminent peril call |  | IMMPERIL-CALL |
| **Track Info** | Not present | The MCVideo call does not involve a non-controlling MCVideo function | TS 24.581 [88] clause 9.2.3.13 |  |
| Functional Alias | Not present |  |  |  |
|  | px\_MCVideo\_ID\_FA\_B | functional alias URI of the transmitting user | TS 24.581 [88]clause 9.2.3.21 | FA |

##### 5.5.11.2.8 Receive Media Response

Table 5.5.11.2.8-1: Receive Media Response

| Derivation Path: TS 24.581 [88] Table 9.2.15-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “00111” | Receive Media Response | TS 24.581 [88] clause 9.2.15 and 9.2.2.1-2 |  |
|  | “10111” |  |  | ACK |
| SSRC | The SSRC of the SS | The SSRC of the Transmission Control server | IETF RFC 3550 [76], |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV1 |  |  |  |
| **Result** |  | Indicates whether media reception is possible as per the request | TS 24.581 [88] clause 9.2.3.17 |  |
| Result | "1" | 0 - The receiver is not permitted (rejected) to receive the media transmission.  1 - The receiver is permitted (granted) to receive the media transmission. |  |  |
| **Reject Cause** | Not present | Includes the reason for the rejecting the media receive request and can be followed by a text-string explaining why the media receive request was rejected. Therefore the length of the packet will vary depending on the size of the application dependent field |  |  |
| **SSRC of transmitter** | Same value as in the corresponding Receive Media Request | The SSRC of transmitter field carries the SSRC of the user transmitting the media  Notation in accordance with clause 5.5.11.0. | IETF RFC 3550 [76] |  |
| **Transmission Indicator** |  |  | TS 24.581 [88] clause 9.2.3.11 |  |
| Transmission Indicator | "1000000000000000" | Normal call |  |  |
|  | "0001000000000000" | Emergency call |  | EMERGENCY-CALL |
|  | "0000100000000000" | Imminent peril call |  | IMMPERIL-CALL |

##### 5.5.11.2.9 Media Reception Notification

Table 5.5.11.2.9-1: Media Reception Notification

| Derivation Path: TS 24.581 [88] Table 9.2.16-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “01000” | Media Reception Notification | TS 24.581 [88] clause 9.2.16 and 9.2.2.1-2 |  |
|  | “11000” |  |  | ACK |
| SSRC | The SSRC of the SS | The SSRC of the Transmission Control server | IETF RFC 3550 [76] |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV1 |  |  |  |
| **User ID** |  | The User ID field is used to carry the identity of the user who is receiving the media | TS 24.581 [88] clause 9.2.3.8 |  |
| User ID | px\_MCVideo\_ID\_User\_B |  |  |  |
| Functional Alias | Not present |  |  |  |
|  | px\_MCVideo\_ID\_FA\_B | functional alias URI of the transmitting user | TS 24.581 [88] clause 9.2.3.21 | FA |

##### 5.5.11.2.10 Void

##### 5.5.11.2.11 Transmission Cancel Request Notify

Table 5.5.11.2.11-1: Transmission Cancel Request Notify

| Derivation Path: TS 24.581 [88] Table 9.2.19-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “01010” | Transmission Cancel Request Notify | TS 24.581 [88] clause 9.2.19 and 9.2.2.1-2 |  |
|  | “11010” |  |  | ACK |
| SSRC | The SSRC of the SS | The SSRC of the Transmission Control server | IETF RFC 3550 [76]. |  |
|  | The SSRC of the message sender | The SSRC of the transmission arbitrator |  | OFF-NETWORK |
| name | MCV1 | Transmission Control messages sent by the transmission control server and transmission control participant |  |  |

##### 5.5.11.2.12 Remote Transmission Response

Table 5.5.11.2.12-1: Remote Transmission Response

| Derivation Path: TS 24.581 [88] Table 9.2.23-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “01011” | Remote Transmission Response | TS 24.581 [88] clause 9.2.23 and 9.2.2.1-2 |  |
|  | “11011” |  |  | ACK |
| SSRC | The SSRC of the SS | The SSRC of the Transmission Control server | IETF RFC 3550 [76]. |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV1 |  |  |  |

##### 5.5.11.2.13 Remote Transmission Cancel Response

Table 5.5.11.2.13-1: Remote Transmission Cancel Response

| Derivation Path: TS 24.581 [88] Table 9.2.25-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| RTCP |  |  |  |  |
| Subtype | “01100” | Remote Transmission Cancel Response | TS 24.581 [88] clause 9.2.25 and 9.2.2.1-2 |  |
|  | “11100” |  |  | ACK |
| SSRC | SSRC of the transmission participant requesting the reception of the media from another user |  | IETF RFC 3550 [76]. |  |
| name | MCV1 |  |  |  |

##### 5.5.11.2.14 Media Reception Override Notification

Table 5.5.11.2.14-1: Media Reception Override Notification

| Derivation Path: TS 24.581 [88] Table 9.2.28-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “01101” | Media Reception Override Notification | TS 24.581 [88] clause 9.2.28 and 9.2.2.1-2 |  |
|  | “11101” |  |  | ACK |
| SSRC | The SSRC of the SS | Editor's note: TS 24.581 specifies "SSRC of the transmission participant requesting the reception of the media from another user" | IETF RFC 3550 [76]. |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV1 |  |  |  |
| **User ID** |  | Carries the identity of the user who is requesting the reception of the media. | TS 24.581 [88] clause 9.2.3.8 |  |
| User ID | px\_MCVideo\_ID\_User\_A |  |  |  |
| **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  Notation in accordance with clause 5.5.11.0. | IETF RFC 3550 [76]. |  |
| **Overriding ID** |  | Carries the identity of the user of the overriding media. | TS 24.581 [88] clause 9.2.3.8 |  |
| User ID | px\_MCVideo\_ID\_User\_B |  |  |  |
| **Overridden ID** |  | Carries the identity of the user of the overridden media. | TS 24.581 [88] clause 9.2.3.8 |  |
| User ID | px\_MCVideo\_ID\_User\_A |  |  |  |

##### 5.5.11.2.15 Transmission End Notify

Table 5.5.11.2.15-1: Transmission End Notify

| Derivation Path: TS 24.581 [88] Table 9.2.29-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “01110” | Transmission End Notify | TS 24.581 [88] clause 9.2.29 and 9.2.2.1-2 |  |
|  | “11110” |  |  | ACK |
| SSRC | The SSRC of the SS | The SSRC of the transmission control server. | IETF RFC 3550 [76]. |  |
|  | The SSRC of the message sender |  |  | OFF-NETWORK |
| name | MCV1 |  |  |  |
| **User ID** |  | Carries the identity of the user whose media transmission has been released | TS 24.581 [88] clause 9.2.3.8 |  |
| User ID | px\_MCVideo\_ID\_User\_A |  |  |  |
| **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  Notation in accordance with clause 5.5.11.0 | IETF RFC 3550 [76]. |  |

##### 5.5.11.2.16 Transmission Idle

Table 5.5.11.2.16-1: Transmission Idle

| Derivation Path: TS 24.581 [88] Table 9.2.30-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “01111” |  | TS 24.581 [88] clause 9.2.2.1-2 |  |
| SSRC | The SSRC of the SS | The SSRC of the Transmission Control server | IETF RFC 3550 [76]. |  |
|  | The SSRC of the message sender | The SSRC of the transmission arbitrator. |  | OFF-NETWORK |
| name | “MCV1” | Transmission Control messages sent by the Transmission Control Server and the Transmission Control Participant. |  |  |
| **Message Sequence Number** |  |  |  |  |
| Message Sequence Number | The value sent in the previous Transmission Idle message, if any, increased with 1 | value is a binary value. The <Message Sequence Number> value can be between '0' and '65535'. When the '65535' value is reached, the <Message Sequence Number> value starts from '0' again |  |  |
| **Transmission Indicator** |  |  | TS 24.581 [88] clause 9.2.3.11 |  |
| Transmission Indicator | "1000000000000000" | Normal call |  |  |
|  | "0001000000000000" | Emergency call |  | EMERGENCY-CALL |
|  | "0000100000000000" | Imminent peril call |  | IMMPERIL-CALL |

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

##### 5.5.11.3.1 Transmission End Request

Table 5.5.11.3.1-1: Transmission End Request

| Derivation Path: TS 24.581 [88] Table 9.2.20-1 | | | | | |
| --- | --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition | |
| **RTCP** |  |  |  |  |
| Subtype | “00000” | Transmission End Request | TS 24.581 [88] clause 9.2.20 and 9.2.2.1-3 |  |
|  | “10000” |  |  | ACK |
| SSRC | The SSRC of the SS | The SSRC of the Transmission Control server for on-network and transmission arbitrator for off-network. | IETF RFC 3550 [76]. | DOWNLINK |
|  | The SSRC of the UE | The SSRC of transmission control participant |  | UPLINK |
| name | MCV2 |  |  |  |
| **User ID** |  | The User ID field is used to carry the identity of the user whose media transmission is requested to be terminated. |  |  |
| User ID | px\_MCVideo\_ID\_User\_A |  |  |  |
| **Reject Cause** |  | Includes the reason explaining why the transmission control server wants the transmission participant to stop sending media | TS 24.581 [88] clause 9.2.3.4 | DOWNLINK |
| Reject Cause Value | 8 |  |  |  |
| Reject Cause Phrase | "No receiving participant" |  |  |  |
| **Reject Cause** | not present |  |  | UPLINK |

##### 5.5.11.3.2 Transmission End Response

Table 5.5.11.3.2-1: Transmission End Response

| Derivation Path: TS 24.581 [88] Table 9.2.21-1 | | | | | |
| --- | --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition | |
| **RTCP** |  |  |  |  |
| Subtype | “00001” | Transmission End Response | TS 24.581 [88] clause 9.2.21 and 9.2.2.1-3 |  |
|  | “10001” |  |  | ACK |
| SSRC | The SSRC of the SS | The SSRC of the Transmission Control server for on-network and transmission arbitrator for off-network. | IETF RFC 3550 [76]. | DOWNLINK |
|  | The SSRC of the UE |  |  | UPLINK |
| name | MCV2 |  |  |  |
| **User ID** |  | The User ID field is used to carry the identity of the user whose media transmission is requested to be terminated. |  |  |
| User ID | px\_MCVideo\_ID\_User\_A |  |  |  |

##### 5.5.11.3.3 Media Reception End Request

Table 5.5.11.3.3-1: Media Reception End Request

| Derivation Path: TS 24.581 [88] Table 9.2.26-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “00010” | Media Reception End Request | TS 24.581 [88] clause 9.2.26 and 9.2.2.1-3 |  |
|  | “10010” |  |  | ACK |
| SSRC | The SSRC of the SS | The SSRC of the transmission control server | IETF RFC 3550 [76] | DOWNLINK |
|  | The SSRC of the UE | The SSRC of the transmission control participant |  | UPLINK |
| name | MCV2 |  |  |  |
| **SSRC of transmitter** | The SSRC of the user transmitting the media as provided in Media transmission notification message sent to the UE | The SSRC of transmitter field carries the SSRC of the user transmitting the media | IETF RFC 3550 [76] |  |
| **Transmission Indicator** |  |  | TS 24.581 [88] clause 9.2.3.11 |  |
| Transmission Indicator | "1000000000000000" | Normal call |  |  |
|  | "0001000000000000" | Emergency call |  | EMERGENCY-CALL |
|  | "0000100000000000" | Imminent peril call |  | IMMPERIL-CALL |

##### 5.5.11.3.4 Media Reception End Response

Table 5.5.11.3.4-1: Media Reception End Response

| Derivation Path: TS 24.581 [88] Table 9.2.27-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| **RTCP** |  |  |  |  |
| Subtype | “00011” | Media Reception End Response | TS 24.581 [88] clause 9.2.27 and 9.2.2.1-3 |  |
|  | “10011” |  |  | ACK |
| SSRC | The SSRC of the SS | The SSRC of the transmission control server | IETF RFC 3550 [76] | DOWNLINK |
|  | The SSRC of the UE | The SSRC of the transmission control participant |  | UPLINK |
| name | MCV2 |  |  |  |
| **SSRC of transmitter** | The SSRC of the user transmitting the media (same value as in the corresponding Media Reception End Request) | The SSRC of transmitter field carries the SSRC of the user transmitting the media | IETF RFC 3550 [76] |  |

##### 5.5.11.3.5 Transmission Control Ack

Table 5.5.11.3.5-1: Transmission Control Ack

| Derivation Path: TS 24.581 [88] Table 9.2.31-1 | | | | |
| --- | --- | --- | --- | --- |
| Information Element | Value/remark | Comment | Reference | Condition |
| RTCP |  |  |  |  |
| Subtype | “00100” | Transmission Control Ack | TS 24.581 [88] clause 9.2.31 and 9.2.2.1-3 |  |
| SSRC | The SSRC of the SS | The SSRC of the Transmission Control server for on-network and transmission arbitrator for off-network. | IETF RFC 3550 [76] | DOWNLINK |
|  | The SSRC of the UE | The SSRC of the transmission control participant |  | UPLINK |
| name | MCV2 |  |  |  |
| **Source** |  |  | TS 24.581 [88] clause 9.2.3.12 |  |
| Source | "2" | the controlling MCVideo function is the sender of the message |  | DOWNLINK |
|  | “0” | the transmission participant is the sender of the message |  | UPLINK |
| **Message name** |  |  | TS 24.581 [88] clause 9.2.3.18 |  |
| Message Name | Message Name of the transmission control messages which requested the acknowledgement | value is as coded as an ascii name field of the RTCP APP packet containing the message to be acknowledged |  |  |
| **Message type** |  |  | TS 24.581 [88] clause 9.2.3.10 |  |
| Message Type | ’0001xxxx’ with ‘xxxx’ being the lower four bits of the subtype of the message to be acknowledged | Message Type of the transmission control messages which requested the acknowledgement |  |  |



### 5.5.12 MSRP Messages for MCData

#### 5.5.12.1 MSRP SEND

##### 5.5.12.1.1 MSRP SEND from the UE

Table 5.5.12.1-1: MSRP SEND from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 4975 [120] clause 9 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Transaction Identifier** |  |  |  |  |
| value | any allowed value |  |  |  |
| **To-Path** |  |  |  |  |
| value | MSRP URI as provided by the SS in its SDP message sent to the UE during call establishment |  |  |  |
| **From-Path** |  |  |  |  |
| value | MSRP URI as provided by the UE during call establishment |  |  |  |
| **Message-ID** |  |  |  |  |
| value | any allowed value | In case of chunking the same Message-ID shall be used for all chunks of the message |  |  |
| **Byte-Range** |  |  |  |  |
| range-start | 1 for the first chunk of a message, length of all previous chunks for a second or later chunk of the message |  |  |  |
|  | 1 |  |  | EMPTY\_SEND\_REQ |
| range-end | any allowed value |  |  |  |
|  | 0 |  |  | EMPTY\_SEND\_REQ |
| total length | any allowed value | may be a specific length or "\*" |  |  |
|  | 0 |  |  | EMPTY\_SEND\_REQ |
| **Content-Type** | as specified by the test case |  | TS 24.582 [89], clause 6.4 |  |
|  | not present |  |  | EMPTY\_SEND\_REQ |
| **data** | as specified by the test case |  |  |  |
|  | not present |  |  | EMPTY\_SEND\_REQ |
| **End-line** |  |  |  |  |
| transact-id | same value as used in Transaction Identifier field |  |  |  |
| continuation-flag | "+" in case of chunking when further chunks will follow;  "$" in case of the message's last chunk or if the MSRP SEND request contains the entire message |  |  |  |
|  | "$" |  |  | EMPTY\_SEND\_REQ |

|  |  |
| --- | --- |
| Condition | Explanation |
| EMPTY\_SEND\_REQ | Empty SEND request to bind the TCP connection to an MSRP session |
| For further conditions see table 5.5.1-1 | |

Table 5.5.12.1-2: Void

Table 5.5.12.1-3: Void

Table 5.5.12.1-4: Void

##### 5.5.12.1.2 MSRP SEND from the SS

Table 5.5.12.1.2-1: MSRP SEND from the SS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 4975 [120] clause 9 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Transaction Identifier** |  |  |  |  |
| value | value assigned by the SS | The SS shall use a different value for each SEND request sent to the UE during a test case |  |  |
| **To-Path** |  |  |  |  |
| value | MSRP URI as provided by the UE in its SDP message sent to the SS during call establishment |  |  |  |
| **From-Path** |  |  |  |  |
| value | MSRP URI as provided by the SS in its SDP message sent to the UE during call establishment |  |  |  |
| **Message-ID** |  |  |  |  |
| value | value assigned by the SS | The SS shall use a different value for each message sent to the UE during a test case (NOTE 1) |  |  |
| **Byte-Range** |  |  |  |  |
| range-start | 1 |  |  |  |
| range-end | length of the message in bytes | NOTE 1 |  |  |
|  | 0 |  |  | EMPTY\_SEND\_REQ |
| total length | length of the message in bytes | NOTE 1 |  |  |
|  | 0 |  |  | EMPTY\_SEND\_REQ |
| Content-Type | as specified by the test case |  | TS 24.582 [89], clause 6.4 |  |
|  | not present |  |  | EMPTY\_SEND\_REQ |
| **data** | as specified by the test case |  |  |  |
|  | not present |  |  | EMPTY\_SEND\_REQ |
| **End-line** |  |  |  |  |
| transact-id | same value as used in Transaction Identifier field |  |  |  |
| continuation-flag | "$" | NOTE 1 |  |  |
| NOTE 1: It is assumed that in general there is no chunking in DL for MCData test cases. | | | | |

|  |  |
| --- | --- |
| Condition | Explanation |
| EMPTY\_SEND\_REQ | Empty SEND request to bind the TCP connection to an MSRP session |
| For further conditions see table 5.5.1-1 | |

Table 5.5.12.1.2-2: Void

#### 5.5.12.2 MSRP 200 (OK)

##### 5.5.12.2.1 MSRP 200 (OK) from the UE

Table 5.5.12.2.1-1: MSRP 200 (OK) from the UE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 4975 [120] clause 9 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Transaction Identifier** |  |  |  |  |
| value | same value as received in the MSRP SEND request |  |  |  |
| **To-Path** |  |  |  |  |
| value | Same value as received in the From-Path of the MSRP SEND request | According to Table 5.5.12.1.2-1 the SS sends only one URI in its SEND requests | RFC 4975 clause 7.2 |  |
| **From-Path** |  |  |  |  |
| value | MSRP URI of the UE (as provided by the UE in its SDP message sent to the SS during call establishment) |  | RFC 4975 clause 7.2 |  |
| **End-line** |  |  |  |  |
| transact-id | same value as used in Transaction Identifier field |  |  |  |
| continuation-flag | "$" |  |  |  |

##### 5.5.12.2.2 MSRP 200 (OK) from the SS

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Derivation Path: RFC 4975 [120] clause 9 | | | | |
| Information Element | Value/remark | Comment | Reference | Condition |
| **Transaction Identifier** |  |  |  |  |
| value | same value as received in the MSRP SEND message |  |  |  |
| **To-Path** |  |  |  |  |
| value | same value as received in the From-Path of the MSRP SEND request | According to Table 5.5.12.1.1-1 it is assumed that the UE sends only one URI in its SEND requests | RFC 4975 clause 7.2 |  |
| **From-Path** |  |  |  |  |
| value | MSRP URI of the SS (as provided by the SS in its SDP message sent to the UE during call establishment) |  | RFC 4975 clause 7.2 |  |
| **End-line** |  |  |  |  |
| transact-id | same value as used in Transaction Identifier field |  |  |  |
| continuation-flag | "$" |  |  |  |

### 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 |  |  |  |

### 5.5.14 Default MCVideo Call Control Off-network Messages and Other Information Elements

#### 5.5.14.1 GROUP CALL PROBE

Table 5.5.14.1-1: GROUP CALL PROBE from the UE to Other UEs

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.2.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Group call probe message identity | "10000001" |  |  |
| MCVideo group ID | px\_MCVideo\_Group\_A\_ID |  |  |

#### 5.5.14.2 GROUP CALL ANNOUNCEMENT

Table 5.5.14.2-1: GROUP CALL ANNOUNCEMENT from the UE to other UEs

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.3.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Group call announcement message Identity | "10000010" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65535) generated at the beginning of a call establishment |  |  |
| Call type | "00000001" | Basic Group Call |  |
|  | "00000011" |  | EMERGENCY-CALL |
|  | "00000100" |  | IMMPERIL-CALL |
| Refresh interval | 10000 | The Refresh interval contains a number denoting the minimum time interval (milliseconds) between two successive periodic announcements.  NOTE: TS 24.281 [26] clause 9.3.2.4.3.1 states that the refresh interval of the call is fixed to 10 seconds (10000 ms) |  |
| Call start time | The Call start time value is an unsigned integer containing UTC time of the time when a call was started, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). |  |  |
| Last call type change time | The Last call type change time value is an unsigned integer containing UTC time of the time when a call priority was changed, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). |  |  |
| MCVideo group ID | px\_MCVideo\_Group\_A\_ID |  |  |
| SDP | As described in TS36.579-1, Table 5.5.3.1.3-2 |  |  |
| Originating MCPTT user ID | px\_MCVideo\_ID\_User\_A | pre-set MCVideo user ID |  |
| Last user to change call type | The ID of the last user to change contents |  |  |
| Confirm mode indication | Present |  |  |
| Probe response | Not Present |  |  |

#### 5.5.14.3 GROUP CALL ACCEPT

Table 5.5.14.3-1: GROUP CALL ACCEPT from the UE to other UEs

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.4.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Group call accept message identity | "10000011" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment |  |  |
| Call type | "00000001" | Basic Group Call |  |
|  | "00000011" |  | EMERGENCY-CALL |
|  | "00000100" |  | IMMPERIL-CALL |
| MCVideo group ID | px\_MCVideo\_Group\_A\_ID |  |  |
| Sending MCVideo user ID | px\_MCVideo\_ID\_User\_A |  |  |

#### 5.5.14.4 GROUP CALL EMERGENCY END

Table 5.5.14.4-1: GROUP CALL EMERGENCY END from the UE to other UEs

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.13.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Group call emergency end message identity | "10000100" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment |  |  |
| Last call type change time | The Last call type change time value is an unsigned integer containing UTC time of the time when a call priority was changed, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). |  |  |
| Last user to change call type | px\_MCVideo\_ID\_User\_A | The ID of the last user to change contents |  |
| MCVideo group ID | px\_MCVideo\_Group\_A\_ID |  |  |
| Originating MCVideo user ID | px\_MCVideo\_ID\_User\_A |  |  |

#### 5.5.14.5 GROUP CALL IMMINENT PERIL END

Table 5.5.14.5-1: GROUP CALL IMMINENT PERIL END from the UE to other UEs

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.12.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Group call imminent peril end message identity | "10000101" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment |  |  |
| Last call type change time | The Last call type change time value is an unsigned integer containing UTC time of the time when a call priority was changed, in seconds since midnight UTC of January 1, 1970 (not counting leap seconds). |  |  |
| Last user to change call type | px\_MCVideo\_ID\_User\_A | The ID of the last user to change contents |  |
| MCVideo group ID | px\_MCVideo\_Group\_A\_ID |  |  |
| Originating MCVideo user ID | px\_MCVideo\_ID\_User\_A |  |  |

#### 5.5.14.6 GROUP CALL BROADCAST

Table 5.5.14.6-1: GROUP CALL BROADCAST from the UE to other UEs

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.18.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Group call broadcast message identity | "10000110" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment |  |  |
| Call type | "00000010" | Broadcast Group Call |  |
| Originating MCVideo user ID | px\_MCVideo\_ID\_User\_A |  |  |
| MCVideo group ID | px\_MCVideo\_Group\_A\_ID |  |  |
| SDP | As described in TS36.579-1, Table 5.5.3.1.3-2 |  |  |

#### 5.5.14.7 GROUP CALL BROADCAST END

Table 5.5.14.7.1-1: GROUP CALL BROADCAST END from the UE to other UEs

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.19.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Group Call Broadcast end message identity | "10000111" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment |  |  |
| MCVideo group ID | px\_MCVideo\_Group\_A\_ID |  |  |
| Originating MCVideo user ID | px\_MCVideo\_ID\_User\_A |  |  |

#### 5.5.14.8 PRIVATE CALL SETUP REQUEST

Table 5.5.14.8-1: PRIVATE CALL SETUP REQUEST from the UE to another UE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.5.1-1. | | | |
| Information Element | Value/remark | Comment | Condition |
| Private call setup request message identity | "10001000" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment |  |  |
| Commencement mode | "00000000" | Automatic Commencement Mode |  |
| Call type | "00000101" | Private Call |  |
| MCVideo user ID of the caller | px\_MCVideo\_ID\_User\_A |  |  |
| MCVideo user ID of the callee | px\_MCVideo\_ID\_User\_B |  |  |
| SDP offer | As described in TS36.579-1, Table 5.5.3.1.3-2 with condition PRIVATE\_CALL |  |  |
| User location | Not Present |  |  |

#### 5.5.14.9 PRIVATE CALL RINGING

Table 5.5.14.9-1: PRIVATE CALL RINGING from the UE to another UE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.6.1-1. | | | |
| Information Element | Value/remark | Comment | Condition |
| Private call ringing message identity | "10001001" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment |  |  |
| MCVideo user ID of the caller | px\_MCVideo\_ID\_User\_A |  |  |
| MCVideo user ID of the callee | px\_MCVideo\_ID\_User\_B |  |  |

#### 5.5.14.10 PRIVATE CALL ACCEPT

Table 5.5.14.10-1: PRIVATE CALL ACCEPT from the UE to another UE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.7.1-1. | | | |
| Information Element | Value/remark | Comment | Condition |
| Private call accept message identity | "10001010" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment |  |  |
| MCVideo user ID of the caller | px\_MCVideo\_ID\_User\_A |  |  |
| MCVideo user ID of the callee | px\_MCVideo\_ID\_User\_B |  |  |
| SDP answer | As described in TS36.579-1, Table 5.5.3.1.3-2 with condition PRIVATE\_CALL |  |  |

#### 5.5.14.11 PRIVATE CALL REJECT

Table 5.5.5.11.1-1: PRIVATE CALL REJECT from the UE to another UE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.8.1-1. | | | |
| Information Element | Value/remark | Comment | Condition |
| Private call reject message identity | "10001011" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment |  |  |
| Reason | "00000000" | 00000000 = REJECT;  00000001 = MEDIA FAILURE;  00000010 = BUSY;  00000011 = E2E SECURITY CONTEXT FAILURE;  00000100 = FAILED |  |
| MCVideo user ID of the caller | px\_MCVideo\_ID\_User\_A |  |  |
| MCVideo user ID of the callee | px\_MCVideo\_ID\_User\_B |  |  |

#### 5.5.14.12 PRIVATE CALL RELEASE

Table 5.5.14.12-1: PRIVATE CALL RELEASE from the UE to another UE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.9.1-1. | | | |
| Information Element | Value/remark | Comment | Condition |
| Private call release message identity | "10001100" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment |  |  |
| MCVideo user ID of the caller | px\_MCVideo\_ID\_User\_A |  |  |
| MCVideo user ID of the callee | px\_MCVideo\_ID\_User\_B |  |  |

#### 5.5.14.13 PRIVATE CALL RELEASE ACK

Table 5.5.14.13-1: PRIVATE CALL RELEASE ACK from the UE to another UE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.10.1-1. | | | |
| Information Element | Value/remark | Comment | Condition |
| Private call release ack message identity | "10001101" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment |  |  |
| MCVideo user ID of the caller | px\_MCVideo\_ID\_User\_A |  |  |
| MCVideo user ID of the callee | px\_MCVideo\_ID\_User\_B |  |  |

#### 5.5.14.14 PRIVATE CALL ACCEPT ACK

Table 5.5.14.14-1: PRIVATE CALL ACCEPT ACK from the UE to another UE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.11.1-1. | | | |
| Information Element | Value/remark | Comment | Condition |
| Private call accept ack message identity | "10001110" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65536) generated at the beginning of a call establishment |  |  |
| MCVideo user ID of the caller | px\_MCVideo\_ID\_User\_A |  |  |
| MCVideo user ID of the callee | px\_MCVideo\_ID\_User\_B |  |  |

#### 5.5.14.15 GROUP EMERGENCY ALERT

Table 5.5.14.15.1-1: GROUP EMERGENCY ALERT from the UE to other UEs

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.14.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Group emergency alert message identity | "10001111" |  |  |
| MCVideo group ID | px\_MCVideo\_Group\_A\_ID |  |  |
| Originating MCVideo user ID | px\_MCVideo\_ID\_User\_A |  |  |
| Organization name | px\_MCX\_DomainName\_Organization\_A |  |  |
| User location | Not Present |  |  |
| User location |  |  | USER\_LOC |
| Latitude | any allowed value |  |  |
| Longitude | any allowed value |  |  |
| Altitude | Not present, or any allowed value | Optional IE |  |
| Accuracy | any allowed value |  |  |
| Timestamp | any allowed value |  |  |

|  |  |
| --- | --- |
| Condition | Explanation |
| USER\_LOC | If requested, shall set the location IE with UE (MCPVideo Client) current location |

#### 5.5.14.16 GROUP EMERGENCY ALERT ACK

Table 5.5.14.16.1-1: GROUP EMERGENCY ALERT ACK from the UE to other UEs

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.15.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Group emergency alert ack message identity | "10010000" |  |  |
| MCVideo group ID | px\_MCVideo\_Group\_A\_ID |  |  |
| Originating MCVideo user ID | px\_MCVideo\_ID\_User\_B |  |  |
| Sending MCVideo user ID | px\_MCVideo\_ID\_User\_A |  |  |

#### 5.5.14.17 GROUP EMERGENCY ALERT CANCEL

Table 5.5.14.17.1-1: GROUP EMERGENCY ALERT CANCEL from the UE to other UEs

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.16.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Group emergency alert cancel message identity | "10010001" |  |  |
| MCVideo group ID | px\_MCVideo\_Group\_A\_ID |  |  |
| Originating MCVideo user ID | px\_MCVideo\_ID\_User\_A |  |  |
| Sending MCVideo user ID | px\_MCVideo\_ID\_User\_A |  |  |

#### 5.5.14.18 GROUP EMERGENCY ALERT CANCEL ACK message

Table 5.5.14.18.1-1: GROUP EMERGENCY ALERT CANCEL ACK from the UE to other UEs

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.17.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Group emergency alert cancel ack message identity | "10010010" |  |  |
| MCVideo group ID | px\_MCVideo\_Group\_A\_ID |  |  |
| Originating MCVideo user ID | px\_MCVideo\_ID\_User\_A |  |  |
| Sending MCVideo user ID | px\_MCVideo\_ID\_User\_B |  |  |

#### 5.5.14.19 PRIVATE REMOTE VIDEO PUSH REQUEST message

Table 5.5.14.19-1: PRIVATE REMOTE VIDEO PUSH REQUEST from the UE to another UE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.381 [86] Table 17.1.20.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Remote video push setup request message identity | "10010011" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65535) generated at the beginning of a call establishment |  |  |
| MCVideo remote push requester | px\_MCVideo\_ID\_User\_A | TS 24.281, Section 13.3.2.2.1 |  |
| MCVideo remote push call originator | px\_MCVideo\_ID\_User\_A | The stored caller ID |  |
| MCVideo remote push call recipient | px\_MCVideo\_ID\_User\_B | The stored callee ID |  |
| Video Information | The Video Information IE is used to indicate the source (user/group) of the video being pushed. | TS 24.281, Sections 13.3.2.2.1 and 17.2.17, Figure 17.2.17-1, Tables 17.2.17-1 and 17.2.17-2. |  |
| Source ID type | "00000000" | user ID |  |
| Length of Source ID contents |  |  |  |
| Source ID | px\_MCVideo\_ID\_User\_A |  |  |

#### 5.5.14.20 GROUP REMOTE VIDEO PUSH REQUEST message

Table 5.5.14.20-1: GROUP REMOTE VIDEO PUSH REQUEST from the UE to another UE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.21.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Remote video push setup request message identity | "10010100" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65535) generated at the beginning of a call establishment |  |  |
| MCVideo remote push requester | px\_MCVideo\_ID\_User\_A |  |  |
| MCVideo remote push call originator | px\_MCVideo\_ID\_User\_A | The stored caller ID |  |
| MCVideo remote push call recipient | px\_MCVideo\_Group\_A\_ID | The stored group recipient ID |  |
| Video Information |  | The Video Information IE is used to indicate the source (user/group) of the video being pushed. |  |
| Source ID type | "00000001" | group ID |  |
| Length of Source ID contents |  |  |  |
| Source ID | px\_MCVideo\_Group\_A\_ID |  |  |

#### 5.5.14.21 VIDEO PUSH TRYING RESPONSE message

Table 5.5.14.21-1: VIDEO PUSH TRYING RESPONSE from UE to other UE

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.22.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Remote video push trying response message identity | "10010101" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65535) generated at the beginning of a call establishment |  |  |

#### 5.5.14.22 NOTIFY VIDEO PUSH message

Table 5.5.14.22-1: NOTIFY VIDEO PUSH message content

|  |  |  |  |
| --- | --- | --- | --- |
| Derivation Path: TS 24.281 [86] Table 17.1.23.1-1 | | | |
| Information Element | Value/remark | Comment | Condition |
| Remote video push notification message identity | "10010110" |  |  |
| Call identifier | a random number uniformly distributed between (0, 65535) generated at the beginning of a call establishment |  |  |
| Result | "00000000" | 00000000 = SUCCESS  00000001 =FAILURE |  |
| MCVideo remote push request notifier | px\_MCVideo\_ID\_User\_A | TS 24.281, section 13.3.2.2.6 |  |
| MCVideo remote push request notification recipient | px\_MCVideo\_ID\_User\_B |  |  |
| MCVideo remote push call recipient user | Not present |  |  |
|  | px\_MCVideo\_ID\_User\_A |  | PRIVATE-CALL |
| MCVideo remote push call recipient group | Not present |  |  |
|  | px\_MCVideo\_Group\_A\_ID |  | GROUP-CALL |
| Reason | Not present |  |  |

## 5.6 Reference configurations

### 5.6.1 General

The Reference configuration requirements provided in clause 5.6 specify configuration values that are expected to be pre-configured in the UE before a test is started. The exception to this requirement are tests which verify the communication exchange which allows a MCPTT device to be enabled for the provision of MCPTT cervices e.g. test case 5.1 in TS 36.579-2 [2].

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

For any end-point to use or access end-to-end secure communications, it needs to be provisioned with keying material associated to its identity by the KMS as specified in 3GPP TS 33.180 [94]. To avoid dynamic allocation of key material before each test case is run, the following keying information needs to be preconfigured in the UE. For convenience, the information is provided in the form of an XML which can be provided/pre-configured in the UE e.g. by a Key Management Server (KMS) as specified in 3GPP TS 33.180 [94].

<?xml version="1.0" encoding="UTF-8"?>

<SignedKmsResponse xmlns= "TOBEDEFINED" xmlns:xsi = "http://www.w3.org/2001/XMLSchema-instance"

xmlns:ds = "http://www.w3.org/2000/09/xmldsig#" xmlns:se = "TOBEDEFINED"

xsi:schemaLocation = "TOBEDEFINED SE\_KmsInterface\_XMLSchema.xsd" Id = "xmldoc">

<KmsResponse xmlns= "TOBEDEFINED" Version = "1.0.0">

<KmsUri>kms.example.org</KmsUri>

<UserUri>user@example.org</UserUri>

<Time>2014-01-26T10:07:14</Time>

<KmsId>KMSProvider12345</KmsId>

<ClientReqUrl>http://kms.example.org/keymanagement/identity/v1/keyprov</ClientReqUrl>

<KmsMessage>

<KmsKeyProv Version = "1.0.0" xsi:type = "se:KmsKeyProvTkType">

<KmsKeySet Version = "1.1.0">

<KmsUri>kms.example.org</KmsUri>

<CertUri>cert1.kms.example.org</CertUri>

<Issuer>www.example.org</Issuer>

<UserUri>user@example.org</UserUri>

<UserID>0123456789ABCDEF0123456789ABCDEF</UserID>

<ValidFrom>2017-07-31T17:00:00</ValidFrom>

<ValidTo>2018-07-31T16:59:59</ValidTo>

<KeyPeriodNo>3710502000</KeyPeriodNo>

<Revoked>false</Revoked>

<UserDecryptKey xsi:type = "se:EncKeyContentType">

<EncryptedKey xmlns = "http://www.w3.org/2001/04/xmlenc#">

<EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#kw-aes256"/>

<ds:KeyInfo>

<ds:KeyName>tk.12.user@example.org</KeyName>

</ds:KeyInfo>

<CipherData>

<CipherValue>DEADBEEF</CipherValue>

</CipherData>

</EncryptedKey>

</UserDecryptKey>

<UserSigningKeySSK xsi:type = "se:EncKeyContentType">

<EncryptedKey xmlns = "http://www.w3.org/2001/04/xmlenc#">

<EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#kw-aes256"/>

<ds:KeyInfo>

<ds:KeyName>tk.12.user@example.org</KeyName>

</ds:KeyInfo>

<CipherData>

<CipherValue>DEADBEEF</CipherValue>

</CipherData>

</EncryptedKey>

</UserSigningKeySSK>

<UserPubTokenPVT xsi:type = "se:EncKeyContentType">

<EncryptedKey xmlns = "http://www.w3.org/2001/04/xmlenc#">

<EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#kw-aes256"/>

<ds:KeyInfo>

<ds:KeyName>tk.12.user@example.org</KeyName>

</ds:KeyInfo>

<CipherData>

<CipherValue>DEADBEEF</CipherValue>

</CipherData>

</EncryptedKey>

</UserPubTokenPVT>

</KmsKeySet>

<NewTransportKey xmlns= "TOBEDEFINED">

<EncryptedKey xmlns="http://www.w3.org/2001/04/xmlenc#" Type="http://www.w3.org/2001/04/xmlenc#EncryptedKey">

<EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#kw-aes256"/>

<ds:KeyInfo>

<ds:KeyName>tk.12.user@example.org</KeyName>

</ds:KeyInfo>

<CipherData>

<CipherValue>DEADBEEF</CipherValue>

</CipherData>

<CarriedKeyName>tk.13.user@example.org</CarriedKeyName>

</EncryptedKey>

</NewTransportKey>

</KmsKeyProv>

</KmsMessage>

</KmsResponse>

<Signature xmlns="http://www.w3.org/2000/09/xmldsig#">

<SignedInfo>

<CanonicalizationMethod Algorithm="http://www.w3.org/TR/2001/REC-xml-c14n-20010315"/>

<SignatureMethod Algorithm="http://www.w3.org/2001/04/xmldsig-more#hmac-sha256">

<HMACOutputLength>128</HMACOutputLength>

</SignatureMethod>

<Reference URI="#xmldoc">

<DigestMethod Algorithm="http://www.w3.org/2001/04/xmlenc#sha256"/>

<DigestValue>nnnn</DigestValue>

</Reference>

</SignedInfo>

<SignatureValue>DEADBEEF</SignatureValue>

<KeyInfo>

<KeyName>tk.12.user@example.org</KeyName>

</KeyInfo>

</Signature>

</SignedKmsResponse>

### 5.6.3 XML schema for MCPTT location information

From TS 24.379 clause F.3.2:

<?xml version="1.0" encoding="UTF-8"?>

<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:mcpttloc="urn:3gpp:ns:mcpttLocationInfo:1.0" targetNamespace="urn:3gpp:ns:mcpttLocationInfo:1.0" elementFormDefault="qualified" attributeFormDefault="unqualified"

xmlns:xenc="http://www.w3.org/2001/04/xmlenc#">

<xs:import namespace="http://www.w3.org/2001/04/xmlenc#"/>

<xs:element name="location-info" id="loc">

<xs:annotation>

<xs:documentation>Root element, contains all information related to location configuration, location request and location reporting for the MCPTT service</xs:documentation>

</xs:annotation>

<xs:complexType>

<xs:choice>

<xs:element name="Configuration" type="mcpttloc:tConfigurationType"/>

<xs:element name="Request" type="mcpttloc:tRequestType"/>

<xs:element name="Report" type="mcpttloc:tReportType"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:choice>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

</xs:element>

<xs:complexType name="tConfigurationType">

<xs:sequence>

<xs:element name="NonEmergencyLocationInformation" type="mcpttloc:tRequestedLocationType" minOccurs="0"/>

<xs:element name="EmergencyLocationInformation" type="mcpttloc:tRequestedLocationType" minOccurs="0"/>

<xs:element name="TriggeringCriteria" type="mcpttloc:TriggeringCriteriaType"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:attribute name="ConfigScope">

<xs:simpleType>

<xs:restriction base="xs:string">

<xs:enumeration value="Full"/>

<xs:enumeration value="Update"/>

</xs:restriction>

</xs:simpleType>

</xs:attribute>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tRequestType">

<xs:complexContent>

<xs:extension base="mcpttloc:tEmptyType">

<xs:attribute name="RequestId" type="xs:string" use="required"/>

</xs:extension>

</xs:complexContent>

</xs:complexType>

<xs:complexType name="tReportType">

<xs:sequence>

<xs:element name="TriggerId" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="CurrentLocation" type="mcpttloc:tCurrentLocationType"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:attribute name="ReportID" type="xs:string" use="optional"/>

<xs:attribute name="ReportType" use="required">

<xs:simpleType>

<xs:restriction base="xs:string">

<xs:enumeration value="Emergency"/>

<xs:enumeration value="NonEmergency"/>

</xs:restriction>

</xs:simpleType>

</xs:attribute>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="TriggeringCriteriaType">

<xs:sequence>

<xs:element name="CellChange" type="mcpttloc:tCellChange" minOccurs="0"/>

<xs:element name="TrackingAreaChange" type="mcpttloc:tTrackingAreaChangeType" minOccurs="0"/>

<xs:element name="PlmnChange" type="mcpttloc:tPlmnChangeType" minOccurs="0"/>

<xs:element name="MbmsSaChange" type="mcpttloc:tMbmsSaChangeType" minOccurs="0"/>

<xs:element name="MbsfnAreaChange" type="mcpttloc:tMbsfnAreaChangeType" minOccurs="0"/>

<xs:element name="PeriodicReport" type="mcpttloc:tIntegerAttributeType" minOccurs="0"/>

<xs:element name="TravelledDistance" type="mcpttloc:tIntegerAttributeType" minOccurs="0"/>

<xs:element name="McpttSignallingEvent" type="mcpttloc:tSignallingEventType" minOccurs="0"/>

<xs:element name="GeographicalAreaChange" type="mcpttloc:tGeographicalAreaChange"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tCellChange">

<xs:sequence>

<xs:element name="AnyCellChange" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="EnterSpecificCell" type="mcpttloc:tSpecificCellType" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="ExitSpecificCell" type="mcpttloc:tSpecificCellType" minOccurs="0" maxOccurs="unbounded"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tEmptyType"/>

<xs:simpleType name="tEcgi">

<xs:restriction base="xs:string">

<xs:pattern value="\d{3}\d{3}[0-1]{28}"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="tSpecificCellType">

<xs:simpleContent>

<xs:extension base="mcpttloc:tEcgi">

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

</xs:extension>

</xs:simpleContent>

</xs:complexType>

<xs:complexType name="tEmptyTypeAttribute">

<xs:complexContent>

<xs:extension base="mcpttloc:tEmptyType">

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

</xs:extension>

</xs:complexContent>

</xs:complexType>

<xs:complexType name="tTrackingAreaChangeType">

<xs:sequence>

<xs:element name="AnyTrackingAreaChange" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="EnterSpecificTrackingArea" type="mcpttloc:tTrackingAreaIdentity" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="ExitSpecificTrackingArea" type="mcpttloc:tTrackingAreaIdentity" minOccurs="0" maxOccurs="unbounded"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:simpleType name="tTrackingAreaIdentityFormat">

<xs:restriction base="xs:string">

<xs:pattern value="\d{3}\d{3}[0-1]{16}"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="tTrackingAreaIdentity">

<xs:simpleContent>

<xs:extension base="mcpttloc:tTrackingAreaIdentityFormat">

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

</xs:extension>

</xs:simpleContent>

</xs:complexType>

<xs:complexType name="tPlmnChangeType">

<xs:sequence>

<xs:element name="AnyPlmnChange" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="EnterSpecificPlmn" type="mcpttloc:tPlmnIdentity" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="ExitSpecificPlmn" type="mcpttloc:tPlmnIdentity" minOccurs="0" maxOccurs="unbounded"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:simpleType name="tPlmnIdentityFormat">

<xs:restriction base="xs:string">

<xs:pattern value="\d{3}\d{3}"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="tPlmnIdentity">

<xs:simpleContent>

<xs:extension base="mcpttloc:tPlmnIdentityFormat">

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

</xs:extension>

</xs:simpleContent>

</xs:complexType>

<xs:complexType name="tMbmsSaChangeType">

<xs:sequence>

<xs:element name="AnyMbmsSaChange" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="EnterSpecificMbmsSa" type="mcpttloc:tMbmsSaIdentity" minOccurs="0"/>

<xs:element name="ExitSpecificMbmsSa" type="mcpttloc:tMbmsSaIdentity" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:simpleType name="tMbmsSaIdentityFormat">

<xs:restriction base="xs:integer">

<xs:minInclusive value="0"/>

<xs:maxInclusive value="65535"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="tMbmsSaIdentity">

<xs:simpleContent>

<xs:extension base="mcpttloc:tMbmsSaIdentityFormat">

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

</xs:extension>

</xs:simpleContent>

</xs:complexType>

<xs:complexType name="tMbsfnAreaChangeType">

<xs:sequence>

<xs:element name="EnterSpecificMbsfnArea" type="mcpttloc:tMbsfnAreaIdentity" minOccurs="0"/>

<xs:element name="ExitSpecificMbsfnArea" type="mcpttloc:tMbsfnAreaIdentity" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:simpleType name="tMbsfnAreaIdentityFormat">

<xs:restriction base="xs:integer">

<xs:minInclusive value="0"/>

<xs:maxInclusive value="255"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="tMbsfnAreaIdentity">

<xs:simpleContent>

<xs:extension base="mcpttloc:tMbsfnAreaIdentityFormat">

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

</xs:extension>

</xs:simpleContent>

</xs:complexType>

<xs:complexType name="tIntegerAttributeType">

<xs:simpleContent>

<xs:extension base="xs:integer">

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

</xs:extension>

</xs:simpleContent>

</xs:complexType>

<xs:complexType name="tTravelledDistanceType">

<xs:sequence>

<xs:element name="TravelledDistance" type="xs:positiveInteger"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tSignallingEventType">

<xs:sequence>

<xs:element name="InitialLogOn" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="GroupCallNonEmergency" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="PrivateCallNonEmergency" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="LocationConfigurationReceived" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type=" mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tEmergencyEventType">

<xs:sequence>

<xs:element name="GroupCallEmergency" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="GroupCallImminentPeril" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="PrivateCallEmergency" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="InitiateEmergencyAlert" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tRequestedLocationType">

<xs:sequence>

<xs:element name="ServingEcgi" type="mcpttloc:tEmptyType" minOccurs="0"/>

<xs:element name="NeighbouringEcgi" type="mcpttloc:tEmptyType" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="MbmsSaId" type="mcpttloc:tEmptyType" minOccurs="0"/>

<xs:element name="MbsfnArea" type="mcpttloc:tEmptyType" minOccurs="0"/>

<xs:element name="GeographicalCordinate" type="mcpttloc:tEmptyType" minOccurs="0"/>

<xs:element name="minimumIntervalLength" type="xs:positiveInteger"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tCurrentLocationType">

<xs:sequence>

<xs:element name="CurrentServingEcgi" type="mcpttloc:tLocationType" minOccurs="0"/>

<xs:element name="NeighbouringEcgi" type="mcpttloc:tLocationType" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="MbmsSaId" type="mcpttloc:tLocationType" minOccurs="0"/>

<xs:element name="MbsfnArea" type="mcpttloc:tLocationType" minOccurs="0"/>

<xs:element name="CurrentCoordinate" type="mcpttloc:tPointCoordinate" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:simpleType name="protectionType">

<xs:restriction base="xs:string">

<xs:enumeration value="Normal"/>

<xs:enumeration value="Encrypted"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="tLocationType">

<xs:choice minOccurs="1" maxOccurs="1">

<xs:element name="Ecgi" type="mcpttloc:tEcgi" minOccurs="0"/>

<xs:element name="SaId" type="mcpttloc:tMbmsSaIdentity" minOccurs="0"/>

<xs:element name="MbsfnAreaId" type="mcpttloc:tMbsfnAreaIdentity" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:choice>

<xs:attribute name="type" type="protectionType"/>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tGeographicalAreaChange">

<xs:sequence>

<xs:element name="AnyAreaChange" type="mcpttloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="EnterSpecificAreaType" type="mcpttloc:tSpecificAreaType" minOccurs="0"/>

<xs:element name="ExitSpecificAreaType" type="mcpttloc:tSpecificAreaType" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tSpecificAreaType">

<xs:sequence>

<xs:element name="GeographicalArea" type="mcpttloc:tGeographicalAreaDef"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tPointCoordinate">

<xs:sequence>

<xs:element name="longitude" type="mcpttloc:tCoordinateType"/>

<xs:element name="latitude" type="mcpttloc:tCoordinateType"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tCoordinateType">

<xs:choice minOccurs="1" maxOccurs="1">

<xs:element name="threebytes" type="mcpttloc:tThreeByteType" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:choice>

<xs:attribute name="type" type="protectionType"/>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:simpleType name="tThreeByteType">

<xs:restriction base="xs:integer">

<xs:minInclusive value="0"/>

<xs:maxInclusive value="16777215"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="tGeographicalAreaDef">

<xs:sequence>

<xs:element name="PolygonArea" type="mcpttloc:tPolygonAreaType" minOccurs="0"/>

<xs:element name="EllipsoidArcArea" type="mcpttloc:tEllipsoidArcType" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tPolygonAreaType">

<xs:sequence>

<xs:element name="Corner" type="mcpttloc:tPointCoordinate" minOccurs="3" maxOccurs="15"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tEllipsoidArcType">

<xs:sequence>

<xs:element name="Center" type="mcpttloc:tPointCoordinate"/>

<xs:element name="Radius" type="xs:nonNegativeInteger"/>

<xs:element name="OffsetAngle" type="xs:unsignedByte"/>

<xs:element name="IncludedAngle" type="xs:unsignedByte"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcpttloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="anyExtType">

<xs:sequence>

<xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>

</xs:complexType>

</xs:schema>

### 5.6.4 XML schema for MCVideo location information

From TS 24.281 clause F.3.2:

<?xml version="1.0" encoding="UTF-8"?>

<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:mcvideoloc="urn:3gpp:ns:mcvideoLocationInfo:1.0" targetNamespace="urn:3gpp:ns:mcvideoLocationInfo:1.0" elementFormDefault="qualified" attributeFormDefault="unqualified"

xmlns:xenc="http://www.w3.org/2001/04/xmlenc#">

<xs:import namespace="http://www.w3.org/2001/04/xmlenc#"/>

<xs:element name="location-info" id="loc">

<xs:annotation>

<xs:documentation>Root element, contains all information related to location configuration, location request and location reporting for the MCVideo service</xs:documentation>

</xs:annotation>

<xs:complexType>

<xs:choice>

<xs:element name="Configuration" type="mcvideoloc:tConfigurationType"/>

<xs:element name="Request" type="mcvideoloc:tRequestType"/>

<xs:element name="Report" type="mcvideoloc:tReportType"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:choice>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

</xs:element>

<xs:complexType name="tConfigurationType">

<xs:sequence>

<xs:element name="NonEmergencyLocationInformation" type="mcvideoloc:tRequestedLocationType" minOccurs="0"/>

<xs:element name="EmergencyLocationInformation" type="mcvideoloc:tRequestedLocationType" minOccurs="0"/>

<xs:element name="TriggeringCriteria" type="mcvideoloc:TriggeringCriteriaType"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:attribute name="ConfigScope">

<xs:simpleType>

<xs:restriction base="xs:string">

<xs:enumeration value="Full"/>

<xs:enumeration value="Update"/>

</xs:restriction>

</xs:simpleType>

</xs:attribute>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tRequestType">

<xs:complexContent>

<xs:extension base="mcvideoloc:tEmptyType">

<xs:attribute name="RequestId" type="xs:string" use="required"/>

</xs:extension>

</xs:complexContent>

</xs:complexType>

<xs:complexType name="tReportType">

<xs:sequence>

<xs:element name="TriggerId" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="CurrentLocation" type="mcvideoloc:tCurrentLocationType"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:attribute name="ReportID" type="xs:string" use="optional"/>

<xs:attribute name="ReportType" use="required">

<xs:simpleType>

<xs:restriction base="xs:string">

<xs:enumeration value="Emergency"/>

<xs:enumeration value="NonEmergency"/>

</xs:restriction>

</xs:simpleType>

</xs:attribute>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="TriggeringCriteriaType">

<xs:sequence>

<xs:element name="CellChange" type="mcvideoloc:tCellChange" minOccurs="0"/>

<xs:element name="TrackingAreaChange" type="mcvideoloc:tTrackingAreaChangeType" minOccurs="0"/>

<xs:element name="PlmnChange" type="mcvideoloc:tPlmnChangeType" minOccurs="0"/>

<xs:element name="MbmsSaChange" type="mcvideoloc:tMbmsSaChangeType" minOccurs="0"/>

<xs:element name="MbsfnAreaChange" type="mcvideoloc:tMbsfnAreaChangeType" minOccurs="0"/>

<xs:element name="PeriodicReport" type="mcvideoloc:tIntegerAttributeType" minOccurs="0"/>

<xs:element name="TravelledDistance" type="mcvideoloc:tIntegerAttributeType" minOccurs="0"/>

<xs:element name="McvideoSignallingEvent" type="mcvideoloc:tSignallingEventType" minOccurs="0"/>

<xs:element name="GeographicalAreaChange" type="mcvideoloc:tGeographicalAreaChange"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tCellChange">

<xs:sequence>

<xs:element name="AnyCellChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="EnterSpecificCell" type="mcvideoloc:tSpecificCellType" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="ExitSpecificCell" type="mcvideoloc:tSpecificCellType" minOccurs="0" maxOccurs="unbounded"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tEmptyType"/>

<xs:simpleType name="tEcgi">

<xs:restriction base="xs:string">

<xs:pattern value="\d{3}\d{3}[0-1]{28}"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="tSpecificCellType">

<xs:simpleContent>

<xs:extension base="mcvideoloc:tEcgi">

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

</xs:extension>

</xs:simpleContent>

</xs:complexType>

<xs:complexType name="tEmptyTypeAttribute">

<xs:complexContent>

<xs:extension base="mcvideoloc:tEmptyType">

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

</xs:extension>

</xs:complexContent>

</xs:complexType>

<xs:complexType name="tTrackingAreaChangeType">

<xs:sequence>

<xs:element name="AnyTrackingAreaChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="EnterSpecificTrackingArea" type="mcvideoloc:tTrackingAreaIdentity" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="ExitSpecificTrackingArea" type="mcvideoloc:tTrackingAreaIdentity" minOccurs="0" maxOccurs="unbounded"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:simpleType name="tTrackingAreaIdentityFormat">

<xs:restriction base="xs:string">

<xs:pattern value="\d{3}\d{3}[0-1]{16}"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="tTrackingAreaIdentity">

<xs:simpleContent>

<xs:extension base="mcvideoloc:tTrackingAreaIdentityFormat">

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

</xs:extension>

</xs:simpleContent>

</xs:complexType>

<xs:complexType name="tPlmnChangeType">

<xs:sequence>

<xs:element name="AnyPlmnChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="EnterSpecificPlmn" type="mcvideoloc:tPlmnIdentity" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="ExitSpecificPlmn" type="mcvideoloc:tPlmnIdentity" minOccurs="0" maxOccurs="unbounded"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:simpleType name="tPlmnIdentityFormat">

<xs:restriction base="xs:string">

<xs:pattern value="\d{3}\d{3}"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="tPlmnIdentity">

<xs:simpleContent>

<xs:extension base="mcvideoloc:tPlmnIdentityFormat">

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

</xs:extension>

</xs:simpleContent>

</xs:complexType>

<xs:complexType name="tMbmsSaChangeType">

<xs:sequence>

<xs:element name="AnyMbmsSaChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="EnterSpecificMbmsSa" type="mcvideoloc:tMbmsSaIdentity" minOccurs="0"/>

<xs:element name="ExitSpecificMbmsSa" type="mcvideoloc:tMbmsSaIdentity" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:simpleType name="tMbmsSaIdentityFormat">

<xs:restriction base="xs:integer">

<xs:minInclusive value="0"/>

<xs:maxInclusive value="65535"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="tMbmsSaIdentity">

<xs:simpleContent>

<xs:extension base="mcvideoloc:tMbmsSaIdentityFormat">

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

</xs:extension>

</xs:simpleContent>

</xs:complexType>

<xs:complexType name="tMbsfnAreaChangeType">

<xs:sequence>

<xs:element name="EnterSpecificMbsfnArea" type="mcvideoloc:tMbsfnAreaIdentity" minOccurs="0"/>

<xs:element name="ExitSpecificMbsfnArea" type="mcvideoloc:tMbsfnAreaIdentity" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:simpleType name="tMbsfnAreaIdentityFormat">

<xs:restriction base="xs:integer">

<xs:minInclusive value="0"/>

<xs:maxInclusive value="255"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="tMbsfnAreaIdentity">

<xs:simpleContent>

<xs:extension base="mcvideoloc:tMbsfnAreaIdentityFormat">

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

</xs:extension>

</xs:simpleContent>

</xs:complexType>

<xs:complexType name="tIntegerAttributeType">

<xs:simpleContent>

<xs:extension base="xs:integer">

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

</xs:extension>

</xs:simpleContent>

</xs:complexType>

<xs:complexType name="tTravelledDistanceType">

<xs:sequence>

<xs:element name="TravelledDistance" type="xs:positiveInteger"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tSignallingEventType">

<xs:sequence>

<xs:element name="InitialLogOn" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="GroupCallNonEmergency" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="PrivateCallNonEmergency" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="LocationConfigurationReceived" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type=" mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tEmergencyEventType">

<xs:sequence>

<xs:element name="GroupCallEmergency" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="GroupCallImminentPeril" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="PrivateCallEmergency" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="InitiateEmergencyAlert" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tRequestedLocationType">

<xs:sequence>

<xs:element name="ServingEcgi" type="mcvideoloc:tEmptyType" minOccurs="0"/>

<xs:element name="NeighbouringEcgi" type="mcvideoloc:tEmptyType" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="MbmsSaId" type="mcvideoloc:tEmptyType" minOccurs="0"/>

<xs:element name="MbsfnArea" type="mcvideoloc:tEmptyType" minOccurs="0"/>

<xs:element name="GeographicalCordinate" type="mcvideoloc:tEmptyType" minOccurs="0"/>

<xs:element name="minimumIntervalLength" type="xs:positiveInteger"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tCurrentLocationType">

<xs:sequence>

<xs:element name="CurrentServingEcgi" type="mcvideoloc:tLocationType" minOccurs="0"/>

<xs:element name="NeighbouringEcgi" type="mcvideoloc:tLocationType" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="MbmsSaId" type="mcvideoloc:tLocationType" minOccurs="0"/>

<xs:element name="MbsfnArea" type="mcvideoloc:tLocationType" minOccurs="0"/>

<xs:element name="CurrentCoordinate" type="mcvideoloc:tPointCoordinate" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:simpleType name="protectionType">

<xs:restriction base="xs:string">

<xs:enumeration value="Normal"/>

<xs:enumeration value="Encrypted"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="tLocationType">

<xs:choice minOccurs="1" maxOccurs="1">

<xs:element name="Ecgi" type="mcvideoloc:tEcgi" minOccurs="0"/>

<xs:element name="SaId" type="mcvideoloc:tMbmsSaIdentity" minOccurs="0"/>

<xs:element name="MbsfnAreaId" type="mcvideoloc:tMbsfnAreaIdentity" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax"/>

<xs:element name="anyExt" type="mcvideoinfo:anyExtType" minOccurs="0"/>

</xs:choice>

<xs:attribute name="type" type="protectionType"/>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tGeographicalAreaChange">

<xs:sequence>

<xs:element name="AnyAreaChange" type="mcvideoloc:tEmptyTypeAttribute" minOccurs="0"/>

<xs:element name="EnterSpecificAreaType" type="mcvideoloc:tSpecificAreaType" minOccurs="0"/>

<xs:element name="ExitSpecificAreaType" type="mcvideoloc:tSpecificAreaType" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tSpecificAreaType">

<xs:sequence>

<xs:element name="GeographicalArea" type="mcvideoloc:tGeographicalAreaDef"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:attribute name="TriggerId" type="xs:string" use="required"/>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tPointCoordinate">

<xs:sequence>

<xs:element name="longitude" type="mcvideoloc:tCoordinate"/>

<xs:element name="latitude" type="mcvideoloc:tCoordinate"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tCoordinateType">

<xs:choice minOccurs="1" maxOccurs="1">

<xs:element name="threebytes" type="mcvideoloc:tThreeByteType" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax"/>

<xs:element name="anyExt" type="mcvideoinfo:anyExtType" minOccurs="0"/>

</xs:choice>

<xs:attribute name="type" type="protectionType"/>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:simpleType name="tThreeByteType">

<xs:restriction base="xs:integer">

<xs:minInclusive value="0"/>

<xs:maxInclusive value="16777215"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="tGeographicalAreaDef">

<xs:sequence>

<xs:element name="PolygonArea" type="mcvideoloc:tPolygonAreaType" minOccurs="0"/>

<xs:element name="EllipsoidArcArea" type="mcvideoloc:tEllipsoidArcType" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tPolygonAreaType">

<xs:sequence>

<xs:element name="Corner" type="mcvideoloc:tPointCoordinate" minOccurs="3" maxOccurs="15"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="tEllipsoidArcType">

<xs:sequence>

<xs:element name="Center" type="mcvideoloc:tPointCoordinate"/>

<xs:element name="Radius" type="xs:nonNegativeInteger"/>

<xs:element name="OffsetAngle" type="xs:unsignedByte"/>

<xs:element name="IncludedAngle" type="xs:unsignedByte"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoloc:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="anyExtType">

<xs:sequence>

<xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>

</xs:complexType>

</xs:schema>

Annex A (informative):  
Change history

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Change history | | | | | | | |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 2017-02 | R5#74 | R5-171298 | - | - | - | Introduction of TS 36.579-1. | 0.0.1 |
| 2017-05 | R5#75 | R5-172100 | - | - | - | Introduction of default message content for some media control messages, some generic procedures from  R5-172078 Default MCPTT media plane control messages  R5-172079 Generic MCPTT procedures | 0.0.2 |
| 2017-06 | RAN5#75 | - | - | - | - | lifted to v0.1.0 because of technical contents | 0.1.0 |
| 2017-08 | RAN5#76 | R5-173766 | - | - | - | Implemented approved:  R5-173702 'Various updates of MCPTT TS 36579-1'  R5-173703 'Update of MCPTT generic procedures'  R5-173704 'New Generic procedures ProSe and MCPTT'  R5-173705 'Update default media plane control messages'  R5-173706 'Update of MCPTT Default MCPTT call control Off-network messages'  R5-173707 'Update of MCPTT MIKEY-SAKKE I.MESSAGE'  R5-173766 'Update of TS 36.579-1 to version 0.2.0'  R5-174599 'SIP message defaults for 36.579-1'  R5-174600 'MCPTT Off-Network Group Call Signaling Message Defaults' | 0.2.0 |
| 2017-12 | RAN5#77 | R5-176835 | - | - | - | Implemented approved:  R5-177000 "Update of SIP Message Defaults for MCPTT"  R5-176345 "Update of Specific SIP messages in Generic procedures"  R5-177001 "Update of Generic procedures for SIP registration"  R5-176347 "New Generic Procedure for ProSe group calls Announcing-Discoveree procedure for group member discovery"  R5-176348 "New Generic Procedure for ProSe group calls Monitoring/Discoverer procedure for group member discovery"  R5-177002 "Update with UE Configuration Defaults"  - References updates | 0.3.0 |
| 2017-12 | RAN#78 | RP-172182 | - | - | - | Draft version for information purposes to the RAN 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 |
| 2021-12 | RAN#94 | R5-216663 | 0187 | - | F | Correction of clause 5.5.2.11 - SIP PUBLISH | 15.4.0 |
| 2021-12 | RAN#94 | R5-216664 | 0188 | - | F | Correction of clause 5.5.2.12 - SIP REFER | 15.4.0 |
| 2021-12 | RAN#94 | R5-216665 | 0189 | - | F | Correction of clause 5.5.2.13 - SIP REGISTER | 15.4.0 |
| 2021-12 | RAN#94 | R5-216667 | 0191 | - | F | Correction of clause 5.5.2.16.3 - SIP 183 (Session Progress) | 15.4.0 |
| 2021-12 | RAN#94 | R5-216668 | 0192 | - | F | Correction of clause 5.5.2.17.1 - SIP 200 (OK) | 15.4.0 |
| 2021-12 | RAN#94 | R5-216669 | 0193 | - | F | Correction of clause 5.5.2.2 - SIP BYE | 15.4.0 |
| 2021-12 | RAN#94 | R5-216670 | 0194 | - | F | Correction of clause 5.5.2.5 - SIP INVITE | 15.4.0 |
| 2021-12 | RAN#94 | R5-216671 | 0195 | - | F | Correction of clause 5.5.2.7 - SIP MESSAGE | 15.4.0 |
| 2021-12 | RAN#94 | R5-216672 | 0196 | - | F | Correction of clause 5.5.2.8 - SIP NOTIFY | 15.4.0 |
| 2021-12 | RAN#94 | R5-216674 | 0198 | - | F | Correction of clause 5.5.3.10 - MCData Protected Payload Message | 15.4.0 |
| 2021-12 | RAN#94 | R5-216676 | 0200 | - | F | Correction of clause 5.5.3.2 - MCPTT-Info from the UE | 15.4.0 |
| 2021-12 | RAN#94 | R5-216677 | 0201 | - | F | Correction of clause 5.5.3.3 - Resource-lists | 15.4.0 |
| 2021-12 | RAN#94 | R5-216678 | 0202 | - | F | Correction of clause 5.5.3.4 - Location-info | 15.4.0 |
| 2021-12 | RAN#94 | R5-216679 | 0203 | - | F | Correction of clause 5.5.3.6 - SIMPLE-FILTER | 15.4.0 |
| 2021-12 | RAN#94 | R5-216680 | 0204 | - | F | Correction of clause 5.5.3.8 - SDS Signalling Payload | 15.4.0 |
| 2021-12 | RAN#94 | R5-216681 | 0205 | - | F | Correction of clause 5.5.3.9 - MCData Data Payload | 15.4.0 |
| 2021-12 | RAN#94 | R5-216682 | 0206 | - | F | Correction of clause 5.5.4 - Default HTTP message and other information elements | 15.4.0 |
| 2021-12 | RAN#94 | R5-216684 | 0208 | - | F | Correction of clause 5.5.7 - Default MCPTT group management messages and other information elements | 15.4.0 |
| 2021-12 | RAN#94 | R5-216686 | 0210 | - | F | Correction of clause 5.5.9.1 - MIKEY-SAKKE I\_MESSAGE | 15.4.0 |
| 2021-12 | RAN#94 | R5-216687 | 0211 | - | F | Correction of Generic Test Procedure for MCPTT CO call establishment using a pre-established session 5.3.9 | 15.4.0 |
| 2021-12 | RAN#94 | R5-216689 | 0213 | - | F | Correction of Generic Test Procedure for MCPTT CO call release keeping the pre-established session 5.3.11 | 15.4.0 |
| 2021-12 | RAN#94 | R5-216690 | 0214 | - | F | Correction of Generic Test Procedure for MCPTT CO Group Creation 5.3.26 | 15.4.0 |
| 2021-12 | RAN#94 | R5-216691 | 0215 | - | F | Correction of Generic Test Procedure for MCPTT CO session establishment/modification without provisional responses other than 100 Trying 5.3.7 | 15.4.0 |
| 2021-12 | RAN#94 | R5-216692 | 0216 | - | F | Correction of Generic Test Procedure for MCPTT CO session modification without implicit Floor Control 5.3.15 | 15.4.0 |
| 2021-12 | RAN#94 | R5-216693 | 0217 | - | F | Correction of Generic Test Procedure for MCPTT CO Temporary Group Creation 5.3.27 | 15.4.0 |
| 2021-12 | RAN#94 | R5-216694 | 0218 | - | F | Correction of Generic Test Procedure for MCPTT CO Temporary Group Tear Down 5.3.28 | 15.4.0 |
| 2021-12 | RAN#94 | R5-216695 | 0219 | - | F | Correction of Generic Test Procedure for MCPTT CT call release 5.3.12 | 15.4.0 |
| 2021-12 | RAN#94 | R5-216696 | 0220 | - | F | Correction of Generic Test Procedure for MCPTT CT call release keeping the pre-established session 5.3.13 | 15.4.0 |
| 2021-12 | RAN#94 | R5-216697 | 0221 | - | F | Correction of Generic Test Procedure for MCPTT CT group call establishment, manual commencement 5.3.5 | 15.4.0 |
| 2021-12 | RAN#94 | R5-216698 | 0222 | - | F | Correction of Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying 5.3.4 | 15.4.0 |
| 2021-12 | RAN#94 | R5-216700 | 0224 | - | F | Correction of Generic Test Procedure for MCPTT Subscription and Notification 5.3.29 | 15.4.0 |
| 2021-12 | RAN#94 | R5-216701 | 0225 | - | F | Correction of Generic Test Procedure for MCPTT UE registration 5.4.2 | 15.4.0 |
| 2021-12 | RAN#94 | R5-216702 | 0226 | - | F | Correction of Generic Test Procedure for UE initiated MCPTT functional alias status change 5.3.25 | 15.4.0 |
| 2021-12 | RAN#94 | R5-216703 | 0227 | - | F | Correction of Generic Test Procedure for UE initiated MCPTT functional alias status determination and subscription 5.3.24 | 15.4.0 |
| 2021-12 | RAN#94 | R5-217632 | 0229 | - | F | Update of Clause 5.5.8.3 MCPTT User Profile | 15.4.0 |
| 2021-12 | RAN#94 | R5-217905 | 0186 | 1 | F | 5.5.7.3 MCDATA Group Configuration Updates | 15.4.0 |
| 2021-12 | RAN#94 | R5-217964 | 0190 | 1 | F | Correction of clause 5.5.2.14 - SIP SUBSCRIBE | 15.4.0 |
| 2021-12 | RAN#94 | R5-217965 | 0197 | 1 | F | Correction of clause 5.5.3.1 - SDP Message | 15.4.0 |
| 2021-12 | RAN#94 | R5-217966 | 0199 | 1 | F | Correction of clause 5.5.3.12 - Xcap-diff documents | 15.4.0 |
| 2021-12 | RAN#94 | R5-217967 | 0207 | 1 | F | Correction of clause 5.5.6.1 - 5.5.6.13 - Default MCPTT media plane control messages from UE | 15.4.0 |
| 2021-12 | RAN#94 | R5-217968 | 0212 | 1 | F | Correction of Generic Test Procedure for MCPTT CO call release 5.3.10 | 15.4.0 |
| 2021-12 | RAN#94 | R5-217985 | 0209 | 1 | F | Correction of clause 5.5.8 - Default MCS configuration management messages and other information elements | 15.4.0 |
| 2021-12 | RAN#94 | R5-217986 | 0223 | 1 | F | Correction of Generic Test Procedure for MCPTT pre-established session establishment CO 5.3.3 | 15.4.0 |
| 2021-12 | RAN#94 | R5-217987 | 0228 | 1 | F | New MCX generic test procedures for SIP MESSAGE message flows | 15.4.0 |
| 2022-03 | RAN#95 | R5-220461 | 0231 | - | F | Correction of clause 2 - References | 15.5.0 |
| 2022-03 | RAN#95 | R5-220462 | 0232 | - | F | Correction of clause 5.4 - Generic test procedures for UE operation over E-UTRA/EPC | 15.5.0 |
| 2022-03 | RAN#95 | R5-220463 | 0233 | - | F | Correction of clause 5.5.11 - Default MCVideo Transmission Control Messages and other Information Elements | 15.5.0 |
| 2022-03 | RAN#95 | R5-220464 | 0234 | - | F | Correction of clause 5.5.12 - MSRP Messages for MCData | 15.5.0 |
| 2022-03 | RAN#95 | R5-220465 | 0235 | - | F | Correction of clause 5.5.2.16 - SIP 1xx | 15.5.0 |
| 2022-03 | RAN#95 | R5-220466 | 0236 | - | F | Correction of clause 5.5.2.17 - SIP 2xx | 15.5.0 |
| 2022-03 | RAN#95 | R5-220467 | 0237 | - | F | Correction of clause 5.5.2.5 - SIP INVITE | 15.5.0 |
| 2022-03 | RAN#95 | R5-220468 | 0238 | - | F | Correction of clause 5.5.2.7 - SIP MESSAGE | 15.5.0 |
| 2022-03 | RAN#95 | R5-220469 | 0239 | - | F | Correction of clause 5.5.2-11 - SIP PUBLISH | 15.5.0 |
| 2022-03 | RAN#95 | R5-220470 | 0240 | - | F | Correction of clause 5.5.2-8 - SIP NOTIFY | 15.5.0 |
| 2022-03 | RAN#95 | R5-220472 | 0242 | - | F | Correction of clause 5.5.3.10 - MCData Protected Payload Message | 15.5.0 |
| 2022-03 | RAN#95 | R5-220474 | 0244 | - | F | Correction of clause 5.5.3.8 - MCData Data signalling messages | 15.5.0 |
| 2022-03 | RAN#95 | R5-220475 | 0245 | - | F | Correction of clause 5.5.4 - Default HTTP message and other information elements | 15.5.0 |
| 2022-03 | RAN#95 | R5-220476 | 0246 | - | F | Correction of clause 5.5.6 - Default MCPTT media plane control messages and other information elements | 15.5.0 |
| 2022-03 | RAN#95 | R5-220477 | 0247 | - | F | Correction of clause 5.5.7 - Default MCX group management messages and other information elements | 15.5.0 |
| 2022-03 | RAN#95 | R5-220478 | 0248 | - | F | Correction of clause 5.5.8 - Default MCS configuration management messages and other information elements | 15.5.0 |
| 2022-03 | RAN#95 | R5-220479 | 0249 | - | F | Correction of clause 5.5.9.1 - CSK download by the SS | 15.5.0 |
| 2022-03 | RAN#95 | R5-220480 | 0250 | - | F | Removal of clause 5.5.3.13 | 15.5.0 |
| 2022-03 | RAN#95 | R5-221545 | 0230 | 1 | F | Additional Rel-15 parameters for MCVideo User Profile 5.5.8.7 | 15.5.0 |
| 2022-03 | RAN#95 | R5-222026 | 0241 | 1 | F | Correction of clause 5.5.3.1 - SDP Message | 15.5.0 |
| 2022-03 | RAN#95 | R5-222027 | 0243 | 1 | F | Correction of clause 5.5.3.6 - SIMPLE-FILTER | 15.5.0 |
| 2022-03 | RAN#95 | R5-222028 | 0251 | 1 | F | Restructuring of clause 5.3 - Generic test procedures for UE MCS operation | 15.5.0 |
| 2022-06 | RAN#96 | R5-222141 | 0252 | - | F | New MCData off-network signalling messages in 5.5.3.8 | 15.6.0 |
| 2022-06 | RAN#96 | R5-222142 | 0253 | - | F | New MCVideo Off-network Message Defaults 5.5.14 | 15.6.0 |
| 2022-06 | RAN#96 | R5-222392 | 0254 | - | F | Addition of clause 5.5.3.15 - Conference-info | 15.6.0 |
| 2022-06 | RAN#96 | R5-222394 | 0256 | - | F | Correction of clause 5.5.2.14 - SIP SUBSCRIBE | 15.6.0 |
| 2022-06 | RAN#96 | R5-222396 | 0258 | - | F | Correction of clause 5.5.3.2 - MCS Info Lists | 15.6.0 |
| 2022-06 | RAN#96 | R5-222398 | 0260 | - | F | Correction of clause 5.5.8 - Default MCS configuration management messages and other information elements | 15.6.0 |
| 2022-06 | RAN#96 | R5-222399 | 0261 | - | F | Corrections of clause 5.5.3.1 - SDP message | 15.6.0 |
| 2022-06 | RAN#96 | R5-222400 | 0262 | - | F | Extensions of clause 2 - References | 15.6.0 |
| 2022-06 | RAN#96 | R5-223477 | 0255 | 1 | F | Correction of clause 5.3 - Generic test procedures for UE MCS operation | 15.6.0 |
| 2022-06 | RAN#96 | R5-223478 | 0259 | 1 | F | Correction of clause 5.5.3.6 - SIMPLE-FILTER | 15.6.0 |
| 2022-09 | RAN#97 | R5-223942 | 0263 | - | F | Correction of clause 5.3A - Generic test procedures for UE MCPTT operation | 15.7.0 |
| 2022-09 | RAN#97 | R5-223943 | 0264 | - | F | Correction of clause 5.3B - Generic test procedures for UE MCVideo operation | 15.7.0 |
| 2022-09 | RAN#97 | R5-223944 | 0265 | - | F | Correction of clause 5.5.11 - Default MCVideo Transmission Control Messages and other Information Elements | 15.7.0 |
| 2022-09 | RAN#97 | R5-223945 | 0266 | - | F | Correction of clause 5.5.2 - Default SIP message and other information elements | 15.7.0 |
| 2022-09 | RAN#97 | R5-223946 | 0267 | - | F | Correction of clause 5.5.3.1 - SDP Message | 15.7.0 |
| 2022-09 | RAN#97 | R5-223947 | 0268 | - | F | Correction of clause 5.5.6 - Default MCPTT media plane control messages and other information elements | 15.7.0 |
| 2022-09 | RAN#97 | R5-223948 | 0269 | - | F | Correction of clause 5.5.8 - Default MCS configuration management messages and other information elements | 15.7.0 |
| 2022-09 | RAN#97 | R5-223949 | 0270 | - | F | Correction of clause 5.5.9 - Default miscellaneous messages and other information elements | 15.7.0 |
| 2022-09 | RAN#97 | R5-225275 | 0271 | 1 | F | Correction of KMS Request URIs in HTTP POST | 15.7.0 |