**3GPP TSG-CT WG1 Meeting #131-eC1-21xxxx**

**Electronic meeting, 19-27 August 2021 (was C1-214134)**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
|  |
|  | **24.281**  | **CR** | **0128** | **rev** | **1** | **Current version:** | **14.10.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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|  |
| ***Title:***  | Private call alignment – R14 |
|  |  |
| ***Source to WG:*** | FirstNet |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | MCImp-MCVIDEO-CT |  | ***Date:*** | 19 August 2021 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-14 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)Rel-12 (Release 12)**Rel-13 (Release 13)Rel-14 (Release 14)Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17) Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | During this work an obsolete editor's note was detected. This needs to be removed. (6.2.8.1.6)With the cleanup of the MCVideo user profile (TS 24.484) approved in CT#92-e, alignment is now necessary for signalling text in TS 24.281 with the MCVideo user profile. (6.2.8.3.9)Two references occur in the References clause to 3GPP TS 24.379. ([40] and [51])Several instances of references to TS 24.229 are marked as [51] but should be [11].Several instances of references to RFC 3261 are marked as [51] but should be [15].Several instances of references to TS 24.581 are marked as [51] but should be [5].Several instances of references to TS 24.481 are marked as [51] but should be [24].Several instances of references to TS 24.481 are marked as [31] but should be [24].Two editor's notes can be removed. (9.2.1.5.2.3, 9.2.2.5.1.4)Reference to <MaxCall> in 10.2.2.2.2 should be to <Max-Simul-Call-Nc10>.Several references to "MCPTT" need to be changed to "MCVideo". |
|  |  |
| ***Summary of change:*** | The obsolete editor's note is removed.The use of elements defined in the MCVIdeo user profile is aligned with the definition of the MCVideo user profile in TS 24.484.Reference to <MaxCall> in 10.2.2.2.2 was changed to <Max-Simul-Call-Nc10>.In the References clause, reference [51] was marked as void. All reference instances to reference [51] were changed to the appropriate reference in clause 2.The instances of references to TS 24.481 marked as [31] were changed to [24].The editor's note in 9.2.1.5.2.3 is removed and replaced with a NOTE that borrows text from TS 24.379.The editor's note in 9.2.2.5.1.4 is removed. NOTE 1 matches text in TS 24.379 and is considered as a sufficient explanation as in 9.2.1.5.2.3.Several references to "MCPTT" are changed to "MCVideo". |
|  |  |
| ***Consequences if not approved:*** | The signalling text of TS 24.281 will not align with the definition of the MCVideo user profile of TS 24.484. |
|  |  |
| ***Clauses affected:*** | 2, 3.1, 6.2.8.1.6, 6.2.8.3.9, 7.2.2, 7.2.3, 7.3.6.2, 8.2.2.3.3, 8.2.2.3.8, 9.2.1.2.1.2, 9.2.1.2.1.4, 9.2.1.3.1.1, 9.2.1.4.2, 9.2.1.5.2.2, 9.2.1.5.2.3, 9.2.2.2.1.3, 9.2.2.5.1.4, 9.3.1.1.2, 10.2.2.2.2, 10.3.1.1.2, 10.3.2.4.2.1, 10.3.2.4.3.2, 10.3.2.4.4.1, F.1.3 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Rev 1:* The editor's note in 9.2.1.5.2.3 is removed and replaced with a NOTE that borrows text from TS 24.379.
* The editor's note in 9.2.2.5.1.4 is removed. NOTE 1 matches text in TS 24.379 and is considered as a sufficient explanation as in 9.2.1.5.2.3.
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**\* \* \* \* \* FIRST CHANGE \* \* \* \* \***

# 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] IETF RFC 4566 (July 2006): "Session Description Protocol".

[3] IETF RFC 3605 (October 2003): "Real Time Control Protocol (RTCP) attribute in Session Description Protocol (SDP)".

[4] 3GPP TS 24.483: "Mission Critical Services (MCS) Management Object (MO)".

[5] 3GPP TS 24.581: "Mission Critical Video (MCVideo) media plane control Protocol specification".

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

[7] IETF RFC 3264 (June 2002): "An Offer/Answer Model with the Session Description Protocol (SDP)".

[8] 3GPP TS 33.180: "Security of the mission critical service".

[9] 3GPP TS 29.199-9: "Open Service Access (OSA); Parlay X Web Services; Part 9: Terminal location".

[10] 3GPP TS 24.007: "Mobile radio interface signalling layer 3; General aspects".

[11] 3GPP TS 24.229: "IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

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

[13] IETF RFC 3856 (August 2004): "A Presence Event Package for the Session Initiation Protocol (SIP)".

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

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

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

[17] IETF RFC 3428 (December 2002): "Session Initiation Protocol (SIP) Extension for Instant Messaging".

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

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

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

[21] IETF RFC 6086 (January 2011): "Session Initiation Protocol (SIP) INFO Method and Package Framework".

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

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

[24] 3GPP TS 24.481: "Mission Critical Services (MCS) group management; Protocol specification".

[25] 3GPP TS 24.484: "Mission Critical Services (MCS) configuration management; Protocol specification".

[26] 3GPP TS 23.281: "Functional architecture and information flows to support Mission Critical Video (MCVideo); Stage 2".

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

[28] IETF RFC 5318 (December 2008): "The Session Initiation Protocol (SIP) P-Refused-URI-List Private-Header (P-Header)".

[29] IETF RFC 4483 (May 2006): "A Mechanism for Content Indirection in Session Initiation Protocol (SIP) Messages".

[30] IETF RFC 4964 (September 2007): "The P-Answer-State Header Extension to the Session Initiation Protocol for the Open Mobile Alliance Push to Talk over Cellular".

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

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

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

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

[35] IETF RFC 5626 (October 2009): "Managing Client-Initiated Connections in the Session Initiation Protocol (SIP)".

[36] 3GPP TS 22.281: "Mission Critical Video over LTE".

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

[38] IETF RFC 8101 (March 2017): "IANA Registration of New Session Initiation Protocol (SIP) Resource-Priority Namespace for Mission Critical Push To Talk Service".

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

[40] 3GPP TS 24.379: "Mission Critical Push To Talk (MCPTT) call control Protocol specification".

[41] IETF RFC 5627 (October 2009): "Obtaining and Using Globally Routable User Agent URIs (GRUUs) in the Session Initiation Protocol (SIP)".

[42] 3GPP TS 24.581: "Mission Critical Video (MCVideo) media plane control; Protocol specification".

[43] IETF RFC 8101 (March 2017): "IANA Registration of New Session Initiation Protocol (SIP) Resource-Priority Namespace for Mission Critical Push To Talk Service".

[44] 3GPP TS 29.468 "Group Communication System Enablers for LTE (GCSE\_LTE); MB2 reference point; Stage 3".

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

[46] IETF RFC 4648 (October 2006): "The Base16, Base32, and Base64 Data Encodings".

[47] 3GPP TS 23.003: "Numbering, addressing and identification".

[48] IETF RFC 2045 (November 1996): "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies".

[49] IETF RFC 2392 (August 1998): "Content-ID and Message-ID Uniform Resource Locators".

[50] W3C: "XML Signature Syntax and Processing (Second Edition)", <http://www.w3.org/TR/xmldsig-core/>

[51] (Void)

[52] 3GPP TS 24.482: "Mission Critical Services (MCS) identity management Protocol specification".

[53] IETF RFC 4354 (January 2006): "A Session Initiation Protocol (SIP) Event Package and Data Format for Various Settings in Support for the Push-to-Talk over Cellular (PoC) Service".

[54] 3GPP TS 29.283: "Diameter Data Management Applications".

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

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

[57] IETF RFC 4575 (August 2006): "A Session Initiation Protocol (SIP) Event Package for Conference State".

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

[59] 3GPP TS 24.334: "Proximity-services (ProSe) User Equipment (UE) to ProSe function protocol aspects".

[60] 3GPP TS 24.237: "IP Multimedia (IM) Core Network (CN) subsystem IP Multimedia Subsystem (IMS) service continuity".

[61] 3GPP TS 26.281: "Mission Critical Video (MCVideo); Codecs and media handling".

[62] 3GPP TS 24.301: "Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS)".

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

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP 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].

**An MCVideo user is affiliated to an MCVideo group**: The MCVideo user is listed as a member of the MCVideo group in the MCVideo group document, the MCVideo server owning the MCVideo group has authorised the MCVideo user's interest in the MCVideo group and the MCVideo server serving the MCVideo user has authorised the MCVideo user's interest in the MCVideo group.

**An MCVideo user is affiliated to an MCVideo group at an MCVideo client**: The MCVideo user is affiliated to the MCVideo group, the MCVideo client has a registered IP address for an IMPU related to the MCVideo ID, and the MCVideo server serving the MCVideo user has authorised the MCVideo user's interest in the MCVideo group at the MCVideo client.

**Affiliation status**: Applies for an MCVideo user to an MCVideo group and has one of the following states:

a) the "not-affiliated" state indicating that the MCVideo user is not interested in the MCVideo group and the MCVideo user is not affiliated to the MCVideo group;

b) the "affiliating" state indicating that the MCVideo user is interested in the MCVideo group but the MCVideo user is not affiliated to the MCVideo group yet;

c) the "affiliated" state indicating that the MCVideo user is affiliated to the MCVideo group and there was no indication that MCVideo user is no longer interested in the MCVideo group; and

d) the "deaffiliating" state indicating that the MCVideo user is no longer interested in the MCVideo group but the MCVideo user is still affiliated to the MCVideo group.

**Group identity**: An MCVideo group identity or a temporary MCVideo group identity.

**MCVideo client ID:** is a globally unique identification of a specific MCVideo client instance. MCVideo client ID is a UUID URN as specified in IETF RFC 4122 [67].

**MCVideo emergency alert state:** MCVideo client internal perspective of the state of an MCVideo emergency alert.

**MCVideo emergency group state:** MCVideo client internal perspective of the in-progress emergency state of an MCVideo group maintained by the controlling MCVideo function.

**MCVideo emergency group call state:** MCVideo client internal perspective of the state of an MCVideo emergency group call.

**MCVideo emergency private call:** MCVideo emergency call between two MCVideo users that is initiated as a private call or a first-to-answer call with emergency indication, or without emergency indication when the MCVideo emergency state is already set,

**MCVideo emergency private call state:** MCVideo client internal perspective of the state of an MCVideo emergency private call.

**MCVideo emergency private priority state:** MCVideo client internal perspective of the in-progress emergency private call state of the two participants of an MCVideo emergency private call maintained by the controlling MCVideo function.

**MCVideo imminent peril group call state:** MCVideo client internal perspective of the state of an MCVideo imminent peril group call.

**MCVideo imminent peril group state:** MCVideo client internal perspective of the state of an MCVideo imminent peril group.

**MCVideo private call:** MCVideo call between two MCVideo users that is initiated as a private call or a first-to-answer call.

**MCVideo private emergency alert state:** MCVideo client internal perspective of the state of an MCVideo private emergency alert targeted to an MCVideo user.

**MCVideo video media:** streaming video and audio media used in mission critical video systems as defined by 3GPP TS 22.179 [2] and 3GPP TS 23.281 [3].

**Media-transmission control entity**: A media control resource shared by participants in an MCVideo session, controlled by a state machine to ensure that participants can access the media resource at the same time.

**Private call:** A call initiated by one user towards one other user with the intention to establish an MCVideo private call or MCVideo emergency private call.

**Remote change of an MCVideo user's selected group:** A mechanism allowing an authorised user to remotely change the selected group of another MCVideo user.

**Temporary MCVideo group identity**: A group identity representing a temporary grouping of MCVideo group identities formed by the group regrouping operation as specified in 3GPP TS 24.481 [24].

**Trusted mutual aid**: A business relationship whereby the Partner MCVideo system is willing to share the details of the members of an MCVideo group that it owns with the Primary MCVideo system.

**Untrusted mutual aid**: A business relationship whereby the Partner MCVideo system is not willing to share the details of the members of an MCVideo group that it owns with the Primary MCVideo system.

For the purposes of the present document, the following terms and definitions given in 3GPP TS 22.179 [2] apply:

**In-progress emergency**

**MCVideo emergency alert**

**MCVideo emergency group call**

**MCVideo emergency state**

**Partner MCVideo system**

**Primary MCVideo system**

For the purpose of the present document, the following terms and definitions given in 3GPP TS 23.281 [3] apply:

**Pre-selected MCVideo user profile**

**Selected MCVideo user profile**

For the purpose of the present document, the following terms and definitions given in 3GPP TS 33.180 [46] apply:

**Client Server Key (CSK)**

**Private Call Key (PCK)**

**Signalling Protection Key (SPK)**

**XML Protection Key (XPK)**

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

##### 6.2.8.1.6 Determining authorisation for initiating or cancelling an MCVideo emergency alert

If the MCVideo client receives a request from the MCVideo user to send an MCVideo emergency alert and:

1) if the <allow-activate-emergency-alert> element of the <ruleset> element of the MCVideo user profile document identified by the MCVideo ID of the calling MCVideo user is set to a value of "true"; and

2) if the "entry-info" attribute of the <entry> element of the <EmergencyAlert> element contained within the <MCVideo-group-call> element of the MCVideo user profile document is set to a value of:

a) "DedicatedGroup", and if the <uri-entry> element of the <entry> element of the <EmergencyAlert> element of the <MCVideo-group-call> element of the MCVideo user profile document (see the MCVideo user profile document in 3GPP TS 24.484 [25]) contains the MCVideo group identity of the MCVideo group targeted by the calling MCVideo user; or

b) "UseCurrentlySelectedGroup" and the <allow-MCVideo-emergency-alert> element of the <list-element> of the group document identified by the MCVideo group identity targeted for the emergency alert is set to a value of "true" as specified in 3GPP TS 24.481 [24];

then the MCVideo emergency alert request shall be considered to be an authorised request for an MCVideo emergency alert. In all other cases, it shall be considered to be an unauthorised request for an MCVideo emergency alert.

If the MCVideo client receives a request from the MCVideo user to cancel an MCVideo emergency alert to an MCVideo group, and if the <allow-cancel-emergency-alert> element of the <ruleset> element of the MCVideo user profile document identified by the MCVideo ID of the calling MCVideo user (see the MCVideo user profile document in 3GPP TS 24.484 [25]) is set to a value of "true", then the MCVideo emergency alert cancellation request shall be considered to be an authorised request to cancel an MCVideo emergency alert. In all other cases, it shall be considered to be an unauthorised request to cancel an MCVideo emergency alert.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

##### 6.2.8.3.9 Retrieving a KMS URI associated with an MCVideo ID

If the MCVideo client needs to retrieve a KMS URI associated to an identified MCVideo ID for on network operation, the MCVideo client:

1) shall search for the <entry> element of the <PrivateCallURI> element of the <PrivateCallOnNetwork> element of the <PrivateCallList> element entry of the <Common> element of the MCVideo user profile document (see the MCVideo user profile document in 3GPP TS 24.484 [50]) containing the identified MCVideo ID;

a) if the identified MCVideo ID is found and if the <entry> element of the <PrivateCallKMSURI> element of the <PrivateCallOnNetwork> element of the <PrivateCallList> element entry identified is not empty, shall retrieve the KMS URI contained therein; or

b) if the identified MCVideo ID is not found or the <entry> element of the <PrivateCallKMSURI> element is empty, shall retrieve the <kms> element of the <App-Server-Info> element of the <on-network> element of the MCVideo UE initial configuration document (see the MCVideo UE initial configuration document in 3GPP TS 24.484 [50]) and consider that to be the KMS URI associated with the MCVideo ID.

If the MCVideo client needs to retrieve a KMS URI associated to an identified MCVideo ID for off network operation, the MCVideo client:

1) shall search for /*<x>*/<x>/Common/PrivateCall/UserList/<x>/Entry/MCVideoID leaf node containing the identified MCVideo ID (see the MCVideo user profile MO in 3GPP TS 24.483 [45]);

a) if the identified MCVideo ID is found:

i) shall retrieve the /*<x>*/<x>/Common/PrivateCall/UserList/<x>/Entry/PrivateCallKMSURI leaf node (see the MCVideo user profile MO in 3GPP TS 24.483 [45]); and

ii) if the PrivateCallKMSURI leaf node in the same /<x>/<x>/Common/PrivateCall/UserList/<x>/Entry/ interior node as the MCVideoID leaf node containing the identified MCVideo ID is not empty, shall consider its value to be the KMS URI associated with the MCVideo ID; and

b) if the identified MCVideo ID is not found or if the /*<x>*/<x>/Common/PrivateCall/UserList/<x>/Entry/PrivateCallKMSURI leaf node is empty:

i) shall retrieve /*<x>*/OnNetwork/AppServerInfo/KMS leaf node (see the MCVideo UE initial configuration document in 3GPP TS 24.483 [45]); and

ii) shall consider the value of the /*<x>*/OnNetwork/AppServerInfo/KMS leaf node to be the KMS URI associated with the MCVideo ID.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

### 7.2.2 SIP PUBLISH request for service authorisation and MCVideo service settings

If based on implementation the MCVideo client decides to use SIP PUBLISH for MCVideo server settings to also perform service authorization and

1) has successfully finished the user authentication procedure as described in 3GPP TS 24.482 [52]; and

2) has available an access-token;

then the MCVideo client:

1) shall perform the procedures in clause 7.2.1A;

2) if confidentiality protection is disabled as specified in clause 6.6.2.3.1 and integrity protection is disabled, shall include in the body of the SIP PUBLISH request, an application/vnd.3gpp.mcvideo-info+xml MIME body as specified in Annex F.1 with the <mcvideo-access-token> element set to the value of the access token received during the user authentication procedures;

3) if either confidentiality protection is enabled as specified in clause 6.6.2.3.1 or integrity protection is enabled as specified in clause 6.6.3.3.1 shall include an application/mikey MIME body with the CSK as MIKEY-SAKKE I\_MESSAGE as specified in 3GPP TS 33.180 [8] in the body of the SIP PUBLISH request;

4) if confidentiality protection is enabled as specified in clause 6.6.2.3.1, shall include in the body of the SIP PUBLISH request an application/vnd.3gpp.mcvideo-info+xml MIME body with:

a) the <mcvideo-access-token> element set to the received access-token encrypted using the CSK, as specified in clause 6.6.2.3.3; and

b) the <mcvideo-client-id> element set to the encrypted MCVideo client ID of the originating MCVideo client, as specified in clause 6.6.2.3.3;

5) if confidentiality protection is disabled as specified in clause 6.6.2.3.1, shall include in the body of the SIP PUBLISH request, an application/vnd.3gpp.mcvideo-info+xml MIME body as specified in Annex F.1 with:

a) the <mcvideo-access-token> element set to the value of the access token received during the user authentication procedures in the body of the SIP PUBLISH request; and

b) the <mcvideo-client-id> element set to the value of the MCVideo client ID of the originating MCVideo client;

6) shall include an application/poc-settings+xml MIME body as defined in 3GPP TS 24.379 [40] containing:

a) the Answer-Mode Indication setting in the <am-settings> element of the poc-settings event package set to the current answer mode setting ("auto-answer" or "manual-answer") of the MCVideo client according to IETF RFC 4354 [53]; and

b) the <selected-user-profile-index> element set to the value contained in the "user-profile-index" attribute of the selected MCVideo user profile as defined in 3GPP TS 24.484 [25]; and

7) if integrity protection is enabled as specified in clause 6.6.3.3.1, shall use the CSK to integrity protect the application/vnd.3gpp.mcvideo-info+xml MIME body and application/poc-settings+xml MIME body by following the procedures in clause 6.6.3.3.3.

The MCVideo client shall send the SIP PUBLISH request according to 3GPP TS 24.229 [11].

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

### 7.2.3 Sending SIP PUBLISH for MCVideo service settings only

To set, update, remove or refresh the MCVideo service settings, the MCVideo client shall generate a SIP PUBLISH request according 3GPP TS 24.229 [11], IETF RFC 3903 [12] and IETF RFC 4354 [53]. In the SIP PUBLISH request, the MCVideo client:

1) shall perform the procedures in clause 7.2.1A;

2) if confidentiality protection is enabled as specified in clause 6.6.2.3.1, shall include in the body of the SIP PUBLISH request, an application/vnd.3gpp.mcvideo-info+xml MIME body with:

a) the <mcvideo-request-uri> element set to the targeted MCVideo ID encrypted using the CSK, as specified in clause 6.6.2.3.3; and

b) the <mcvideo-client-id> element set to the encrypted MCVideo client ID of the originating MCVideo client, as specified in clause 6.6.2.3.3;

3) if confidentiality protection is disabled as specified in clause 6.6.2.3.1, shall include an application/vnd.3gpp.mcvideo-info+xml MIME body as specified in Annex F.1 with:

a) the <mcvideo-request-uri> set to the cleartext targeted MCVideo ID; and

b) the <mcvideo-client-id> element set to the value of the MCVideo client ID of the originating MCVideo client;

4) shall include an application/poc-settings+xml MIME body as defined in 3GPP TS 24.379 [40] containing:

a) the Answer-Mode Indication setting in the <am-settings> element of the poc-settings event package set to the current answer mode setting ("auto-answer" or "manual-answer") of the MCVideo client according to IETF RFC 4354 [53]; and

b) the <selected-user-profile-index> element set to the value contained in the "user-profile-index" attribute of the selected MCVideo user profile as defined in 3GPP TS 24.484 [25]; and

5) if integrity protection is enabled as specified in clause 6.6.3.3.1, shall use the CSK to integrity protect the application/vnd.3gpp.mcvideo-info+xml MIME body and application/poc-settings+xml MIME body by following the procedures in clause 6.6.3.3.3.

The MCVideo client shall send the SIP PUBLISH request according to 3GPP TS 24.229 [11].

On receiving the SIP 200 (OK) response to the SIP PUBLISH request the MCVideo client may indicate to the MCVideo User the successful communication of the MCVideo service settings to the MCVideo server.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

#### 7.3.6.2 Sending notification of change of MCVideo service settings

In order to notify the subscriber about changes of the MCVideo service settings of the subscribed MCVideo client of the subscribed MCVideo user, the MCVideo server:

1) shall generate an application/poc-settings+xml MIME body as defined in 3GPP TS 24.379 [40] containing:

a) the <am-settings> element of the poc-settings event package set to the current answer mode setting of the MCVideo client according to IETF RFC 4354 [53]; and

b) the <selected-user-profile-index> element as defined in clause 7.4.1.2 identifying the active MCVideo user profile; and

2) send a SIP NOTIFY request according to 3GPP TS 24.229 [11], IETF RFC 6665 [16] and IETF RFC 4354 [53] with the constructed application/poc-settings+xml MIME body.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

##### 8.2.2.3.3 Receiving group affiliation status change procedure

Upon receiving a SIP PUBLISH request such that:

1) Request-URI of the SIP PUBLISH request contains the public service identity of the controlling MCVideo function associated with the served MCVideo group;

2) the SIP PUBLISH request contains an application/vnd.3gpp.mcvideo-info+xml MIME body containing the <mcvideo-request-uri> element and the <mcvideo-calling-user-id> element;

3) the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcvideo" (coded as specified in 3GPP TS 24.229 [11]), in a P-Asserted-Service header field according to IETF RFC 6050 [14];

4) the Event header field of the SIP PUBLISH request contains the "presence" event type; and

5) SIP PUBLISH request contains an application/pidf+xml MIME body indicating per-group affiliation information constructed according to clause 8.2.3.2;

then the MCVideo server:

1) shall identify the served MCVideo group ID in the <mcvideo-request-uri> element of the application/vnd.3gpp.mcvideo-info+xml MIME body of the SIP PUBLISH request;

2) shall identify the handled MCVideo ID in the <mcvideo-calling-user-id> element of the application/vnd.3gpp.mcvideo-info+xml MIME body of the SIP PUBLISH request;

3) if the Expires header field of the SIP PUBLISH request is not included or has nonzero value lower than 4294967295, shall send a SIP 423 (Interval Too Brief) response to the SIP PUBLISH request, where the SIP 423 (Interval Too Brief) response contains a Min-Expires header field set to 4294967295, and shall not continue with the rest of the steps;

4) if an MCVideo group for the served MCVideo group ID does not exist in the group management server according to 3GPP TS 24.481 [24], shall reject the SIP PUBLISH request with SIP 403 (Forbidden) response to the SIP PUBLISH request according to 3GPP TS 24.229 [11], IETF RFC 3903 [12] and IETF RFC 3856 [13] and skip the rest of the steps;

5) if the handled MCVideo ID is not a member of the MCVideo group identified by the served MCVideo group ID, shall reject the SIP PUBLISH request with SIP 403 (Forbidden) response to the SIP PUBLISH request according to 3GPP TS 24.229 [11], IETF RFC 3903 [12] and IETF RFC 3856 [13] and skip the rest of the steps;

6) shall respond with SIP 200 (OK) response to the SIP PUBLISH request according to 3GPP TS 24.229 [11], IETF RFC 3903 [12]. In the SIP 200 (OK) response, the MCVideo server:

a) shall set the Expires header field according to IETF RFC 3903 [12], to the selected expiration time;

7) if the "entity" attribute of the <presence> element of the application/pidf+xml MIME body of the SIP PUBLISH request is different than the served MCVideo group ID, shall not continue with the rest of the steps;

8) if the handled MCVideo ID is different from the MCVideo ID in the "id" attribute of the <tuple> element of the <presence> root element of the application/pidf+xml MIME body of the SIP PUBLISH request, shall not continue with the rest of the steps;

9) shall consider an MCVideo group information entry such that:

a) the MCVideo group information entry is in the list of MCVideo group information entries described in clause 8.2.2.3.2; and

b) the MCVideo group ID of the MCVideo group information entry is equal to the served MCVideo group ID;

 as the served MCVideo group information entry;

10) if the selected expiration time is zero:

a) shall remove the MCVideo user information entry such that:

i) the MCVideo user information entry is in the list of the MCVideo user information entries of the served MCVideo group information entry; and

ii) the MCVideo user information entry has the MCVideo ID set to the served MCVideo ID;

11) if the selected expiration time is not zero:

a) shall consider an MCVideo user information entry such that:

i) the MCVideo user information entry is in the list of the MCVideo user information entries of the served MCVideo group information entry; and

ii) the MCVideo ID of the MCVideo user information entry is equal to the handled MCVideo ID;

 as the served MCVideo user information entry;

b) if the MCVideo user information entry does not exist:

i) shall insert an MCVideo user information entry with the MCVideo ID set to the handled MCVideo ID into the list of the MCVideo user information entries of the served MCVideo group information entry; and

ii) shall consider the inserted MCVideo user information entry as the served MCVideo user information entry; and

c) shall set the following information in the served MCVideo user information entry:

i) set the MCVideo client ID list according to the "client" attributes of the <affiliation> elements of the <status> element of the <tuple> element of the <presence> root element of the application/pidf+xml MIME body of the SIP PUBLISH request; and

ii) set the expiration time according to the selected expiration time;

12) shall identify the handled p-id in the <p-id> child element of the <presence> root element of the application/pidf+xml MIME body of the SIP PUBLISH request; and

13) shall perform the procedures specified in clause 8.2.2.3.5 for the served MCVideo group ID.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

##### 8.2.2.3.8 Affiliation eligibility check procedure

This clause is referenced from other procedures.

Upon receiving a SIP request for an MCVideo group that the MCVideo user is not currently affiliated to and that requires the controlling MCVideo function to check on the eligibility of the MCVideo user to be affiliated to the MCVideo group, the controlling MCVideo function shall:

1) shall identify the served MCVideo group ID in the <mcvideo-request-uri> element of the application/vnd.3gpp.mcvideo-info+xml MIME body of the SIP request;

2) shall identify the handled MCVideo ID in the <mcvideo-calling-user-id> element of the application/vnd.3gpp.mcvideo-info+xml MIME body of the SIP request;

3) if an MCVideo group for the served MCVideo group ID does not exist in the group management server according to 3GPP TS 24.481 [24], shall consider the MCVideo user to be ineligible for affiliation and skip the rest of the steps;

4) if the handled MCVideo ID is not a member of the MCVideo group identified by the served MCVideo group ID, shall consider the MCVideo user to be ineligible for affiliation and skip the rest of the steps;

5) if there is no MCVideo group information entry in the list of MCVideo group information entries described in clause 8.2.2.3.2 with an MCVideo group identity matching the served MCVideo group ID, then shall consider the MCVideo user to be ineligible for affiliation and skip the rest of the steps; or

6) shall consider the MCVideo user to be eligible for affiliation.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

###### 9.2.1.2.1.2 Client terminating procedures

In the procedures in this clause:

1) emergency indication in an incoming SIP INVITE request refers to the <emergency-ind> element of the application/vnd.3gpp.mcvideo-info+xml MIME body; and

2) imminent peril indication in an incoming SIP INVITE request refers to the <imminentperil-ind> element of the application/vnd.3gpp.mcvideo-info+xml MIME body.

Upon receipt of an initial SIP INVITE request, the MCVideo client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [11] with the clarifications below.

The MCVideo client:

1) may reject the SIP INVITE request if either of the following conditions are met:

a) MCVideo client does not have enough resources to handle the call; or

b) any other reason outside the scope of this specification;

2) if the SIP INVITE request is rejected in step 1), shall respond toward participating MCVideo function either with appropriate reject code as specified in 3GPP TS 24.229 [11] and warning texts as specified in clause 4.4.2 or with SIP 480 (Temporarily unavailable) response not including warning texts if the user is authorised to restrict the reason for failure and skip the rest of the steps of this clause;

NOTE: If the SIP INVITE request contains an emergency indication or imminent peril indication, the MCVideo client can by means beyond the scope of this specification choose to accept the request.

3) shall check if a Resource-Priority header field is included in the incoming SIP INVITE request and may perform further actions outside the scope of this specification to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [11];

4) if the SIP INVITE request contains an application/vnd.3gpp.mcvideo-info+xml MIME body with the <mcvideoinfo> element containing the <mcvideo-Params> element with the <emergency-ind> element set to a value of "true":

a) should display to the MCVideo user an indication that this is a SIP INVITE request for an MCVideo emergency group call and:

i) should display the MCVideo ID of the originator of the MCVideo emergency group call contained in the <mcvideo-calling-user-id> element of the application/vnd.3gpp.mcvideo-info+xml MIME body;

ii) should display the MCVideo group identity of the group with the emergency condition contained in the <mcvideo-calling-group-id> element; and

iii) if the <alert-ind> element is set to "true", should display to the MCVideo user an indication of the MCVideo emergency alert and associated information;

b) shall set the MCVideo emergency group state to "MVEG 2: in-progress";

c) shall set the MCVideo imminent peril group state to "MVIG 1: no-imminent-peril"; and

d) shall set the MCVideo imminent peril group call state to "MVIGC 1: imminent-peril-gc-capable"; otherwise

5) if the SIP INVITE request contains an application/vnd.3gpp.mcvideo-info+xml MIME body with the <mcvideoinfo> element containing the <mcvideo-Params> element with the <imminentperil-ind> element set to a value of "true":

a) should display to the MCVideo user an indication that this is a SIP INVITE request for an MCVideo imminent peril group call and:

i) should display the MCVideo ID of the originator of the MCVideo imminent peril group call contained in the <mcvideo-calling-user-id> element of the application/vnd.3gpp.mcvideo-info+xml MIME body; and

ii) should display the MCVideo group identity of the group with the imminent peril condition contained in the <mcvideo-calling-group-id> element; and

b) shall set the MCVideo imminent peril group state to "MVIG 2: in-progress";

6) may display to the MCVideo user the MCVideo ID of the inviting MCVideo user;

7) shall perform the automatic commencement procedures specified in clause 6.2.3.1.2 if one of the following conditions are met:

a) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCVideo service setting at the invited MCVideo client for answering the call is set to automatic commencement mode; or

b) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCVideo service setting at the invited MCVideo client for answering the call is set to manual commencement mode, yet the invited MCVideo client allows the call to be answered with automatic commencement mode;

8) shall perform the manual commencement procedures specified in clause 6.2.3.2.2 if one of the following conditions are met:

a) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCVideo service setting at the invited MCVideo client for answering the call is to use manual commencement mode; or

b) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCVideo service setting at the invited MCVideo client for answering the call is set to automatic commencement mode, yet the invited MCVideo client allows the call to be answered with manual commencement mode; and

9) when the SIP 200 (OK) response to the SIP INVITE request is sent, may subscribe to the conference event package as specified in clause 9.1.3.1.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

###### 9.2.1.2.1.4 MCVideo in-progress emergency cancel

This clause covers both on-demand session and pre-established sessions.

Upon receiving a request from an MCVideo user to cancel the in-progress emergency condition on a prearranged MCVideo group, the MCVideo client shall generate a SIP re-INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [11], with the clarifications given below.

The MCVideo client:

1) if the MCVideo user is not authorised to cancel the in-progress emergency group state of the MCVideo group as determined by the procedures of clause 6.2.8.1.7, the MCVideo client:

a) should indicate to the MCVideo user that they are not authorised to cancel the in-progress emergency group state of the MCVideo group; and

b) shall skip the remaining steps of the current clause;

2) shall, if the MCVideo user is cancelling an in-progress emergency condition and optionally an MCVideo emergency alert originated by the MCVideo user, include an application/vnd.3gpp.mcvideo-info+xml MIME body populated as specified in clause 6.2.8.1.3;

3) shall, if the MCVideo user is cancelling an in-progress emergency condition and an MCVideo emergency alert originated by another MCVideo user, include an application/vnd.3gpp.mcvideo-info+xml MIME body populated as specified in clause 6.2.8.1.14;

4) shall include in the application/vnd.3gpp.mcvideo-info+xml MIME body with the <mcvideoinfo> element containing the <mcvideo-Params> element with:

a) the <session-type> element set to a value of "prearranged"; and

b) the <mcvideo-request-uri> element set to the group identity;

NOTE 1: The MCVideo ID of the originating MCVideo user is not included in the body, as this will be inserted into the body of the SIP INVITE request that is sent by the originating participating MCVideo function.

5) shall include the g.3gpp.mcvideo media feature tag in the Contact header field of the SIP re-INVITE request according to IETF RFC 3840 [22];

6) if the SIP re-INVITE request is to be sent within an on-demand session, shall include in the SIP re-INVITE request an SDP offer according to 3GPP TS 24.229 [11] with the clarifications specified in clause 6.2.1;

7) shall include a Resource-Priority header field and comply with the procedures in clause 6.2.8.1.2; and

8) shall send the SIP re-INVITE request according to 3GPP TS 24.229 [11].

On receiving a SIP 2xx response to the SIP re-INVITE request, the MCVideo client:

1) shall interact with the user plane as specified in 3GPP TS 24.581 [5];

2) shall set the MCVideo emergency group state of the group to "MVEG 1: no-emergency";

3) shall set the MCVideo emergency group call state of the group to "MVEGC 1: emergency-gc-capable"; and

4) if the MCVideo emergency alert state is set to "MVEA 4: Emergency-alert-cancel-pending", the sent SIP re-INVITE request did not contain an <originated-by> element in the application/vnd.3gpp.mcvideo-info+xml MIME body and the SIP 2xx response to the SIP request for a priority group call does not contain a Warning header field as specified in clause 4.4 with the warning text containing the mcvideo-warn-code set to "149", shall set the MCVideo emergency alert state to "MVEA 1: no-alert".

On receiving a SIP INFO request where the Request-URI contains an MCVideo session ID identifying an ongoing group session, the MCVideo client shall follow the actions specified in clause 6.2.8.1.13.

On receiving a SIP 4xx response, SIP 5xx response or SIP 6xx response to the SIP re-INVITE request:

1) shall set the MCVideo emergency group state as "MVEG 2: in-progress";

2) if the SIP 4xx response, SIP 5xx response or SIP 6xx response contains an application/vnd.3gpp.mcvideo-info+xml MIME body with an <alert-ind> element set to a value of "true" and the sent SIP re-INVITE request did not contain an <originated-by> element in the application/vnd.3gpp.mcvideo-info+xml MIME body, the MCVideo client shall set the MCVideo emergency alert state to "MVEA 3: emergency-alert-initiated"; and

3) if the SIP 4xx response, SIP 5xx response or SIP 6xx response did not contain an application/vnd.3gpp.mcvideo-info+xml MIME body with an <alert-ind> element and did not contain an <originated-by> element, the MCVideo emergency alert (MVEA) state shall revert to its value prior to entering the current procedure.

NOTE 3: If the in-progress emergency group state cancel request is rejected, the state of the session does not change, i.e. continues with MCVideo emergency group call level priority.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

###### 9.2.1.3.1.1 On demand prearranged group call

In the procedures in this clause:

1) group identity in an incoming SIP INVITE request refers to the group identity from the <mcvideo-request-uri> element of the application/vnd.3gpp.mcvideo-info+xml MIME body of the incoming SIP INVITE request;

2) emergency indication in an incoming SIP INVITE request refers to the <emergency-ind> element of the application/vnd.3gpp.mcvideo-info+xml MIME body; and

3) imminent peril indication in an incoming SIP INVITE request refers to the <imminentperil-ind> element of the application/vnd.3gpp.mcvideo-info+xml MIME body.

Upon receipt of a "SIP INVITE request for originating participating MCVideo function" containing an application/vnd.3gpp.mcvideo-info+xml MIME body with the <session-type> element set to a value of "prearranged", the participating MCVideo function:

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the SIP INVITE request with a SIP 500 (Server Internal Error) response. The participating MCVideo function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [15]. Otherwise, continue with the rest of the steps;

NOTE 1: if the SIP INVITE request contains an emergency indication or an imminent peril indication set to a value of "true" and this is an authorised request for originating a priority call as determined by clause 6.3.2.1.8.1, the participating MCVideo function can according to local policy choose to accept the request.

2) shall determine the MCVideo ID of the calling user from public user identity in the P-Asserted-Identity header field of the SIP INVITE request, and shall authorise the calling user;

NOTE 2: The MCVideo ID of the calling user is bound to the public user identity at the time of service authorisation, as documented in clause 7.3.

3) if through local policy in the participating MCVideo function, the user identified by the MCVideo ID is not authorised to initiate prearranged group calls, shall reject the "SIP INVITE request for originating participating MCVideo function" with a SIP 403 (Forbidden) response to the SIP INVITE request, with warning text set to "109 user not authorised to make prearranged group calls" in a Warning header field as specified in clause 4.4;

4) shall validate the media parameters and if the MCVideo codecs are not offered in the SIP INVITE request shall reject the request with a SIP 488 (Not Acceptable Here) response. Otherwise, continue with the rest of the steps;

5) shall check if the number of maximum simultaneous MCVideo group calls supported for the MCVideo user as specified in the <MaxSimultaneousCallsN6> element of the <MCVideo-group-call> element of the MCVideo user profile document (see the MCVideo user profile document in 3GPP TS 24.484 [25]) has been exceeded. If exceeded, the participating MCVideo function shall respond with a SIP 486 (Busy Here) response with the warning text set to "103 maximum simultaneous MCVideo group calls reached" in a Warning header field as specified in clause 4.4. Otherwise, continue with the rest of the steps;

NOTE 3: If the SIP INVITE request contains an emergency indication or an imminent peril indication, the participating MCVideo function can by means beyond the scope of this specification choose to allow for an exception to the limit for the maximum simultaneous MCVideo sessions supported for the MCVideo user. Alternatively, a lower priority session of the MCVideo user could be terminated to allow for the new session.

6) if the user identified by the MCVideo ID is not affiliated to the group identified in the "SIP INVITE request for originating participating MCVideo function" as determined by clause 8.2.2.2.11 and this is an authorised request for originating a priority call as determined by clause 6.3.2.1.8.1, shall perform the actions specified in clause 8.2.2.2.12 for implicit affiliation;

7) if the actions for implicit affiliation specified in step 6) above were performed but not successful in affiliating the MCVideo user due to the MCVideo user already having N2 simultaneous affiliations, shall reject the "SIP INVITE request for originating participating MCVideo function" with a SIP 486 (Busy Here) response with the warning text set to "102 too many simultaneous affiliations" in a Warning header field as specified in clause 4.4. and skip the rest of the steps.

NOTE 4: N2 is the total number of MCVideo groups that an MCVideo user can be affiliated to simultaneously as specified in 3GPP TS 23.281 [26].

NOTE 5: if the SIP INVITE request contains an emergency indication set to a value of "true" or an imminent peril indication set to a value of "true" and this is an authorised request for originating a priority call as determined by clause 6.3.2.1.8.1, the participating MCVideo function can according to local policy choose to allow an exception to the N2 limit. Alternatively, a lower priority affiliation of the MCVideo user could be cancelled to allow for the new affiliation.

8) shall determine the public service identity of the controlling MCVideo function associated with the group identity in the SIP INVITE request;

NOTE 6: The public service identity can identify the controlling MCVideo function in the primary MCVideo system or a partner MCVideo system.

NOTE 7: How the participating MCVideo server discovers the public service identity of the controlling MCVideo function associated with the group identity is out of scope of the current release.

9) shall generate a SIP INVITE request as specified in clause 6.3.2.1.3;

10) shall set the Request-URI to the public service identity of the controlling MCVideo function associated with the group identity which was present in the incoming SIP INVITE request;

11) shall not copy the following header fields from the incoming SIP INVITE request to the outgoing SIP INVITE request, if they were present in the incoming SIP INVITE request:

a) Answer-Mode header field as specified in IETF RFC 5373 [27]; and

b) Priv-Answer-Mode header field as specified in IETF RFC 5373 [27];

12) shall set the <mcvideo-calling-user-id> element of the application/vnd.3gpp.mcvideo-info+xml MIME body of the SIP INVITE request to the MCVideo ID of the calling user;

13) shall include in the SIP INVITE request an SDP offer based on the SDP offer in the received SIP INVITE request from the MCVideo client as specified in clause 6.3.2.1.1.1;

14) if the received SIP INVITE request contains an application/vnd.3gpp.location-info+xml MIME body and if not already copied, shall copy the contents of the application/vnd.3gpp.location-info+xml MIME body received in the SIP INVITE request into an application/vnd.3gpp.location-info+xml MIME body included in the outgoing SIP request;

15) if a Resource-Priority header field was included in the received SIP INVITE request, shall include a Resource-Priority header field according to rules and procedures of 3GPP TS 24.229 [11] set to the value indicated in the Resource-Priority header field of the SIP INVITE request from the MCVideo client; and

NOTE 8: The participating MCVideo function will leave verification of the Resource-Priority header field to the controlling MCVideo function.

16) shall forward the SIP INVITE request, according to 3GPP TS 24.229 [11].

Upon receipt of a SIP 302 (Moved Temporarily) response to the above SIP INVITE request in step 15), the participating MCVideo function:

1) shall generate a SIP INVITE request as specified in clause 6.3.2.1.10;

2) shall include an SDP offer based upon the SDP offer in the received SIP INVITE request from the MCVideo client as specified in clause 6.3.2.1.1.1; and

3) shall forward the SIP INVITE request according to 3GPP TS 24.229 [11].

Upon receipt of a SIP 2xx response in response to the above SIP INVITE request in step 15), the participating MCVideo function:

1) if the received SIP 2xx response contains an application/vnd.3gpp.mcvideo-info+xml MIME body with an <MKFC-GKTPs> element, shall perform the procedures in clause 6.3.2.3.2;

2) shall generate a SIP 200 (OK) response as in clause 6.3.2.1.5.2;

3) shall include in the SIP 200 (OK) response an SDP answer as specified in the clause 6.3.2.1.2.1;

4) shall include Warning header field(s) that were received in the incoming SIP 200 (OK) response;

5) shall include the public service identity received in the P-Asserted-Identity header field of the incoming SIP 200 (OK) response into the P-Asserted-Identity header field of the outgoing SIP 200 (OK) response;

6) shall include an MCVideo session identity mapped to the MCVideo session identity provided in the Contact header field of the received SIP 200 (OK) response;

7) if the procedures of clause 8.2.2.2.12 for implicit affiliation were performed in the present clause, shall complete the implicit affiliation by performing the procedures of clause 8.2.2.2.13;

8) shall send the SIP 200 (OK) response to the MCVideo client according to 3GPP TS 24.229 [11];

9) shall interact with Media Plane as specified in 3GPP TS 24.581 [5]; and

10) shall start the SIP Session timer according to rules and procedures of IETF RFC 4028 [23].

Upon receipt of a SIP 4xx, 5xx or 6xx response to the above SIP INVITE request in step 14) the participating MCVideo function:

1) shall generate a SIP response according to 3GPP TS 24.229 [11];

2) shall include Warning header field(s) that were received in the incoming SIP response;

3) shall forward the SIP response to the MCVideo client according to 3GPP TS 24.229 [11]; and

4) if the implicit affiliation procedures of clause 8.2.2.2.12 were invoked in this procedure, shall perform the procedures of clause 8.2.2.2.14;

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

##### 9.2.1.4.2 Terminating Procedures

In the procedures in this clause:

1) MCVideo ID in an incoming SIP INVITE request refers to the MCVideo ID of the originating user from the <mcvideo-calling-user-id> element of the application/vnd.3gpp.mcvideo-info+xml MIME body of the incoming SIP INVITE request;

2) group identity in an incoming SIP INVITE request refers to the group identity from the <mcvideo-request-uri> element of the application/vnd.3gpp.mcvideo-info+xml MIME body of the incoming SIP INVITE request;

3) MCVideo ID in an outgoing SIP INVITE request refers to the MCVideo ID of the called user in the <mcvideo-request-uri> element of the application/vnd.3gpp.mcvideo-info+xml MIME body of the outgoing SIP INVITE request;

4) indication of required group members in a SIP 183 (Session Progress) response refers to the <required> element of the application/vnd.3gpp.mcvideo-info+xml MIME body set to "true" in a SIP 183 (Session Progress) sent by the non-controlling MCVideo function of an MCVideo group;

5) emergency indication in an incoming SIP INVITE request refers to the <emergency-ind> element of the application/vnd.3gpp.mcvideo-info+xml MIME body; and

6) imminent peril indication in an incoming SIP INVITE request refers to the <imminentperil-ind> element of the application/vnd.3gpp.mcvideo-info+xml MIME body.

Upon receipt of a "SIP INVITE request for controlling MCVideo function of an MCVideo group", the controlling MCVideo function:

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the SIP INVITE request with a SIP 500 (Server Internal Error) response. The controlling MCVideo function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [15] and skip the rest of the steps;

NOTE 1: if the SIP INVITE request contains an emergency indication or an imminent peril indication set to a value of "true" and this is an authorised request for originating an MCVideo emergency group call as determined by clause 6.3.3.1.13.2, or for originating an MCVideo imminent peril group call as determined by clause 6.3.3.1.13.5, the controlling MCVideo function can according to local policy choose to accept the request.

2) shall determine if the media parameters are acceptable and the MCVideo codecs are offered in the SDP offer and if not reject the request with a SIP 488 (Not Acceptable Here) response and skip the rest of the steps;

3) shall reject the SIP request with a SIP 403 (Forbidden) response and not process the remaining steps if:

a) an Accept-Contact header field does not include the g.3gpp.mcvideo media feature tag; or

b) an Accept-Contact header field does not include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcvideo";

4) if received SIP INVITE request includes an application/vnd.3gpp.mcvideo-info+xml MIME body with an <emergency-ind> element included or an <imminentperil-ind> element included, shall validate the request as described in clause 6.3.3.1.17;

5) shall retrieve the necessary group document(s) from the group management server for the group identity contained in the SIP INVITE request and carry out initial processing as specified in clause 6.3.5.2;

6) if the result of the initial processing in clause 6.3.5.2 was:

a) that authorization of the MCVideo ID is required at a non-controlling MCVideo function of an MCVideo group is required, perform the actions in clause 6.3.3.1.13.7 and do not continue with the rest of the steps in this clause; and

b) that a SIP 3xx, 4xx, 5xx or 6xx response to the "SIP INVITE request for controlling MCVideo function of an MCVideo group" has been sent, do not continue with the rest of the steps in this clause;

7) shall perform the actions as described in clause 6.3.3.2.2;

8) shall maintain a local counter of the number of SIP 200 (OK) responses received from invited members and shall initialise this local counter to zero;

9) shall determine if an MCVideo group call for the group identity is already ongoing by determining if an MCVideo session identity has already been allocated for the group call and the MCVideo session is active;

10) if the SIP INVITE request contains an unauthorised request for an MCVideo emergency group call as determined by clause 6.3.3.1.13.2:

a) shall reject the SIP INVITE request with a SIP 403 (Forbidden) response as specified in clause 6.3.3.1.14; and

b) shall send the SIP 403 (Forbidden) response as specified in 3GPP TS 24.229 [11] and skip the rest of the steps;

11) if the SIP INVITE request contains an unauthorised request for an MCVideo imminent peril group call as determined by clause 6.3.3.1.13.5, shall reject the SIP INVITE request with a SIP 403 (Forbidden) response with the following clarifications:

a) shall include in the SIP 403 (Forbidden) response an application/vnd.3gpp.mcvideo-info+xml MIME body as specified in clause F.1 with the <mcvideoinfo> element containing the <mcvideo-Params> element with the <imminentperil-ind> element set to a value of "false"; and

b) shall send the SIP 403 (Forbidden) response as specified in 3GPP TS 24.229 [11] and skip the rest of the steps;

12) if a Resource-Priority header field is included in the SIP INVITE request:

a) if the Resource-Priority header field is set to the value indicated for emergency calls and the SIP INVITE request does not contain an emergency indication and the in-progress emergency state of the group is set to a value of "false", shall reject the SIP INVITE request with a SIP 403 (Forbidden) response and skip the rest of the steps; or

b) if the Resource-Priority header field is set to the value indicated for imminent peril calls and the SIP INVITE request does not contain an imminent peril indication and the in-progress imminent peril state of the group is set to a value of "false", shall reject the SIP INVITE request with a SIP 403 (Forbidden) response and skip the rest of the steps;

13) if the MCVideo group call is not ongoing then:

a) if:

i) the user identified by the MCVideo ID is not affiliated to the group identity contained in the SIP INVITE request as specified in clause 6.3.6;

ii) the group identity contained in the SIP INVITE request is not a constituent MCVideo group ID;

iii) the received SIP INVITE request does not contain an emergency indication or imminent peril indication; or

iv) the received SIP INVITE request is an authorised request for an MCVideo emergency group call as determined by clause 6.3.3.1.13.2 or MCVideo imminent peril group call as determined by steps clause 6.3.3.1.13.5 and is determined to not be eligible for implicit affiliation as specified in clause 8.2.2.3.6;

then shall return a SIP 403 (Forbidden) response with the warning text set to "120 user is not affiliated to this group" in a Warning header field as specified in clause 4.4, and skip the rest of the steps below;

b) if the user identified by the MCVideo ID is not authorised to initiate the prearranged group session as specified in clause 6.3.5.4, shall send a SIP 403 (Forbidden) response with the warning text set to: "119 user is not authorised to initiate the group call" in a Warning header field as specified in clause 4.4 and skip the rest of the steps below;

c) if the received SIP INVITE request contains an an authorised request for an MCVideo emergency group call as determined by clause 6.3.3.1.13.2 or MCVideo imminent peril group call as determined by clause 6.3.3.1.13.5 and the MCVideo user is eligible to be implicitly affiliated with the MCVideo group as determined as determined in step 13) a) iv) above, shall perform the implicit affiliation as specified in clause 8.2.2.3.7;

d) shall check if a Resource-Priority header field is included in the incoming SIP INVITE request and may apply any preferential treatment to the SIP request as specified in 3GPP TS 24.229 [11];

e) shall create a prearranged group session and allocate an MCVideo session identity for the prearranged group call, and shall handle timer TNG3 (group call timer) as specified in clause 6.3.3.5;

f) if the group identity in the "SIP INVITE request for controlling MCVideo function of an MCVideo group" is a TGI:

i) shall for each of the constituent MCVideo groups homed on the primary MCVideo system:

A) if the controlling MCVideo function does not own the MCVideo group identified by the MCVideo group ID, then generate a SIP INVITE request towards the MCVideo server that owns the MCVideo group identity by following the procedures in clause 9.2.1.4.1.2; and

NOTE 2: The MCVideo server that the SIP INVITE request is sent to acts as a non-controlling MCVideo function;

B) if the controlling MCVideo function owns the MCVideo group identified by the MCVideo group ID then:

I) determine the members to invite to the prearranged MCVideo group call as specified in clause 6.3.5.5;

II) invite each group member determined in step A) above, to the group session, as specified in clause 9.2.1.4.1.1; and

III) interact with the media plane as specified in 3GPP TS 24.581 [5] clause 6.3; and

ii) shall for each of the constituent MCVideo groups homed on the partner MCVideo system generate a SIP INVITE request for the MCVideo group identity homed on the partner MCVideo system as specified in clause 9.2.1.4.1.2; and

g) if the group identity in the SIP INVITE request for controlling MCVideo function of an MCVideo group is an MCVideo group ID:

i) shall determine the members to invite to the prearranged MCVideo group call as specified in clause 6.3.5.5;

ii) if necessary, shall start timer TNG1 (acknowledged call setup timer) according to the conditions stated in clause 6.3.3.3;

iii) if the received SIP INVITE request includes an application/vnd.3gpp.mcvideo-info+xml MIME body with an <emergency-ind> element set to a value of "true":

A) shall cache the information that this MCVideo user has initiated an MCVideo emergency call;

B) if the received SIP INVITE contains an alert indication set to a value of "true" and this is an authorised request for an MCVideo emergency alert meeting the conditions specified in clause 6.3.3.1.13.1, shall cache the information that this MCVideo user has initiated an MCVideo emergency alert; and

C) if the in-progress emergency state of the group is set to a value of "false":

I) shall set the value of the in-progress emergency state of the group to "true"; and

II) shall start timer TNG2 (in-progress emergency group call timer) and handle its expiry as specified in clause 6.3.3.1.16;

iv) if the in-progress emergency state of the group is set to a value of "false" and if the received SIP INVITE request contains an imminent peril indication set to a value of "true", the controlling MCVideo function shall:

A) shall cache the information that this MCVideo user has initiated an MCVideo imminent peril call; and

B) if the in-progress imminent peril state of the group is set to a value of "false", shall set the in-progress imminent peril state of the group to a value of "true";

v) shall invite each group member determined in step 13)g)i) above, to the group session, as specified in clause 9.2.1.4.1.1; and

vi) shall interact with the media plane as specified in 3GPP TS 24.581 [5] clause 6.3; and

14) if the MCVideo group call is ongoing then:

a) if:

i) the user identified by the MCVideo ID in the SIP INVITE request is not affiliated to the group identity contained in the SIP INVITE request as specified in clause 6.3.6;

ii) the group identity contained in the SIP INVITE request is not a constituent MCVideo group ID;

iii) the received SIP INVITE request does not contain an emergency indication or imminent peril indication; or

iv) the received SIP INVITE request is an authorised request for an MCVideo emergency group call as determined by clause 6.3.3.1.13.2 or MCVideo imminent peril group call as determined clause 6.3.3.1.13.5 and is determined to not be eligible for implicit affiliation as specified in clause 8.2.2.3.6;

then shall return a SIP 403 (Forbidden) response with the warning text set to "120 user is not affiliated to this group" in a Warning header field as specified in clause 4.4, and skip the rest of the steps below;

b) if the user identified by the MCVideo ID in the SIP INVITE request is not authorised to join the prearranged group session as specified in clause 6.3.5.3, shall send a SIP 403 (Forbidden) response with the warning text set to "121 user is not allowed to join the group call" in a Warning header field as specified in clause 4.4 and skip the rest of the steps below;

c) shall check if a Resource-Priority header field is included in the incoming SIP INVITE request and may apply any preferential treatment to the SIP request as specified in 3GPP TS 24.229 [11];

d) if <on-network-max-participant-count> as specified in 3GPP TS 24.481 [24] is already reached:

i) if, according to local policy, the user identified by the MCVideo ID in the SIP INVITE request is deemed to have a higher priority than an existing user in the group session, may remove a participant from the session by following clause 9.2.1.4.4.3, and skip the next step; and

NOTE 3: The local policy for deciding whether to admit a user to a call that has reached its maximum amount of participants can include the <user-priority> and the <participant-type> of the user as well as other information of the user from the group document as specified in 3GPP TS 24.481 [24]. The local policy decisions can also include taking into account whether the imminent-peril indicator or emergency indicator was received in the SIP INVITE request.

ii) shall return a SIP 486 (Busy Here) response with the warning text set to "122 too many participants" to the originating network as specified in clause 4.4 and skip the rest of the steps;

e) if the received SIP INVITE request contains an an authorised request for an MCVideo emergency group call as determined by clause 6.3.3.1.13.2 or MCVideo imminent peril group call as determined by clause 6.3.3.1.13.5 and the MCVideo user is eligible to be implicitly affiliated with the MCVideo group as determined in step 14) a) iv) above, shall perform the implicit affiliation as specified in clause 8.2.2.3.7;

f) if the received SIP INVITE request includes an application/vnd.3gpp.mcvideo-info+xml MIME body with an <emergency-ind> element set to a value of "true":

i) shall cache the information that this MCVideo user has initiated an MCVideo emergency call;

ii) if the received SIP INVITE contains an alert indication set to a value of "true" and this is an authorised request for an MCVideo emergency alert meeting the conditions specified in clause 6.3.3.1.13.1, shall cache the information that this MCVideo user has initiated an MCVideo emergency alert;

iii) if the in-progress emergency state of the group is set to a value of "false":

A) shall set the value of the in-progress emergency state of the group to "true";

B) shall start timer TNG2 (in-progress emergency group call timer) and handle its expiry as specified in clause 6.3.3.1.16; and

C) shall generate SIP re-INVITE requests for the MCVideo emergency group call to the other call participants of the MCVideo group as specified in clause 6.3.3.1.6;

iv) if the in-progress imminent peril state of the group is set to a value of "true":

A) for each of the other affiliated member of the group generate a SIP MESSAGE request notification of the MCVideo user's imminent peril indication as specified in clause 6.3.3.1.11, setting the <imminentperil-ind> element of the application/vnd.3gpp.mcvideo-info+xml MIME body to a value of "true"; and

B) send the SIP MESSAGE request as specified in 3GPP TS 24.229 [11]; and

v) upon receiving a SIP 200 (OK) response to the SIP re-INVITE request the controlling MCVideo function shall interact with the media plane as specified in 3GPP TS 24.581 [5];

g) if the in-progress emergency state of the group is set to a value of "false" and if the SIP INVITE request contains an imminent peril indication set to a value of "true", the controlling MCVideo function:

i) shall cache the information that this MCVideo user has initiated an MCVideo imminent peril call; and

ii) if the in-progress imminent peril state of the group is set to a value of "false":

A) shall set the in-progress imminent peril state of the group to a value of "true";

B) shall generate SIP re-INVITE requests for the MCVideo imminent peril group call to the other call participants of the MCVideo group as specified in clause 6.3.3.1.15; and

C) upon receiving a SIP 200 (OK) response to the SIP re-INVITE request the controlling MCVideo function shall interact with the media plane as specified in 3GPP TS 24.581 [5]; and

iii) if the in-progress imminent peril state of the group is set to a value of "true":

A) for each of the other affiliated member of the group generate a SIP MESSAGE request notification of the MCVideo user's imminent peril indication as specified in clause 6.3.3.1.11, setting the <imminentperil-ind> element of the application/vnd.3gpp.mcvideo-info+xml MIME body to a value of "true"; and

B) send the SIP MESSAGE request as specified in 3GPP TS 24.229 [11];

h) shall generate a SIP 200 (OK) response as specified in the clause 6.3.3.2.4.2;

i) shall include in the SIP 200 (OK) response an SDP answer to the SDP offer in the incoming SIP INVITE request as specified in the clause 6.3.3.2.1;

j) shall include in the SIP 200 (OK) response with the warning text set to "123 MCVideo session already exists" as specified in clause 4.4;

k) if the received SIP re-INVITE request contains an alert indication set to a value of "true" and this is an unauthorised request for an MCVideo emergency alert as specified in clause 6.3.3.1.13.1, shall include in the SIP 200 (OK) response the warning text set to "149 SIP INFO request pending" in a Warning header field as specified in clause 4.4;

l) if the received SIP re-INVITE request contains an application/vnd.3gpp.mcvideo-info+xml MIME body with the <imminentperil-ind> element set to a value of "true" and if the in-progress emergency state of the group is set to a value of "true", shall include in the SIP 200 (OK) response the warning text set to "149 SIP INFO request pending" in a Warning header field as specified in clause 4.4;

NOTE 4: In this case, the request was for an imminent peril call but a higher priority MCVideo emergency call was already in progress on the group. Hence, the imminent peril call request aspect of the request is denied but the request is granted with emergency level priority.

m) shall interact with media plane as specified in 3GPP TS 24.581 [5] clause 6.3;

NOTE 5: Resulting media plane processing is completed before the next step is performed.

n) shall send the SIP 200 (OK) response towards the inviting MCVideo client or inviting non-controlling MCVideo function according to 3GPP TS 24.229 [11];

o) shall generate a notification to the MCVideo clients, which have subscribed to the conference state event package that the inviting MCVideo User has joined in the MCVideo group session, as specified in clause 6.3.3.4;

NOTE 6: As a group document can potentially have a large content, the controlling MCVideo function can notify using content-indirection as defined in IETF RFC 4483 [29].

p) shall send a SIP NOTIFY request to each MCVideo client according to 3GPP TS 24.229 [11];

q) Upon receiving a SIP ACK to the above SIP 200 (OK) response and the SIP 200 (OK) response contained a Warning header field as specified in clause 4.4 with the warning text containing the mcvideo-warn-code set to "149", shall follow the procedures in clause 6.3.3.1.18; and

r) shall not continue with the rest of the clause.

Upon receiving a SIP 183 (Session Progress) response to the SIP INVITE request specified in clause 9.2.1.4.1 containing a P-Answer-State header field with the value "Unconfirmed" as specified in IETF RFC 4964 [30], the timer TNG1 (acknowledged call setup timer) is not running, the controlling MCVideo function supports media buffering and the SIP final response is not yet sent to the inviting MCVideo client:

1) shall generate a SIP 200 (OK) response to SIP INVITE request as specified in the clause 6.3.3.2.3.2;

2) shall include the warning text set to "122 too many participants" as specified in clause 4.4 in the SIP 200 (OK) response, if the prearranged MCVideo group has more than <on-network-max-participant-count> members as specified in 3GPP TS 24.481 [24];

3) shall include in the SIP 200 (OK) response an SDP answer to the SDP offer in the incoming SIP INVITE request as specified in the clause 6.3.3.2.1;

4) shall include a P-Answer-State header field with the value "Unconfirmed";

5) if the SIP INVITE request contains an alert indication set to a value of "true" and this is an unauthorised request for an MCVideo emergency alert as specified in clause 6.3.3.1.13.1, shall include in the SIP 200 (OK) response the warning text set to "149 SIP INFO request pending" in a Warning header field as specified in clause 4.4;

6) if the received SIP INVITE request contains an application/vnd.3gpp.mcvideo-info+xml MIME body with the <imminentperil-ind> element set to a value of "true" and if the in-progress emergency state of the group is set to a value of "true", shall include in the SIP 200 (OK) response the warning text set to "149 SIP INFO request pending" in a Warning header field as specified in clause 4.4;

7) shall interact with the media plane as specified in 3GPP TS 24.581 [5] clause 6.3;

NOTE 7: Resulting user plane processing is completed before the next step is performed.

8) shall send the SIP 200 (OK) response towards the inviting MCVideo client according to 3GPP TS 24.229 [11];

9) shall generate a notification to the MCVideo clients, which have subscribed to the conference state event package that the inviting MCVideo User has joined in the MCVideo group session, as specified in clause 6.3.3.4; and

NOTE 8: As a group document can potentially have a large content, the controlling MCVideo function can notify using content-indirection as defined in IETF RFC 4483 [29].

10) shall send a SIP NOTIFY request to each MCVideo client according to 3GPP TS 24.229 [11].

Upon receiving a SIP 183 (Session Progress) response for a SIP INVITE request as specified in clause 9.2.1.4.1.2 containing an indication of required group members, the timer TNG1 (acknowledged call setup timer) is running and all SIP 200 (OK) responses have been received to all SIP INVITE requests sent to MCVideo clients specified in clause 9.2.1.4.1.1, then the controlling MCVideo function shall wait until the SIP 200 (OK) response has been received to the SIP INVITE request specified in clause 9.2.1.4.1.2 before generating a SIP 200 (OK) response to the "SIP INVITE request for controlling MCVideo function of an MCVideo group".

Upon receiving a SIP 200 (OK) response for a SIP INVITE request as specified in clause 9.2.1.4.1 that was sent to an affiliated and <on-network-required> group member as specified in 3GPP TS 24.481 [24]; and

1) if the MCVideo ID in the SIP 200 (OK) response matches to the MCVideo ID in the corresponding SIP INVITE request;

2) there are no outstanding SIP 200 (OK) responses to SIP INVITE requests which were sent to affiliated and <on-network-required> group members as specified in 3GPP TS 24.481 [24]; and

3) there is no outstanding SIP 200 (OK) response to a SIP INVITE request sent in clause 9.2.1.4.1.2 where the SIP 183 (Session Progress) response contained an indication of required group members;

the controlling MCVideo function:

1) shall stop timer TNG1 (acknowledged call setup timer) as described in clause 6.3.3.3;

2) shall generate SIP 200 (OK) response to the SIP INVITE request as specified in the clause 6.3.3.2.3.2 before continuing with the rest of the steps;

3) shall include the warning text set to "122 too many participants" as specified in clause 4.4 in the SIP 200 (OK) response, if all members were not invited because the prearranged MCVideo group has been exceeded the <on-network-max-participant-count> members as specified in 3GPP TS 24.481 [24];

4) shall include in the SIP 200 (OK) response an SDP answer to the SDP offer in the incoming SIP INVITE request as specified in the clause 6.3.3.2.1;

5) shall interact with the media plane as specified in 3GPP TS 24.581 [5] clause 6.3;

NOTE 9: Resulting media plane processing is completed before the next step is performed.

6) shall send a SIP 200 (OK) response to the inviting MCVideo client according to 3GPP TS 24.229 [11];

7) shall generate a notification to the MCVideo clients, which have subscribed to the conference state event package that the inviting MCVideo user has joined in the MCVideo group session, as specified in clause 6.3.3.4; and

NOTE 10: As a group document can potentially have a large content, the controlling MCVideo function can notify using content-indirection as defined in IETF RFC 4483 [29].

8) shall send the SIP NOTIFY request to the MCVideo clients according to 3GPP TS 24.229 [11].

Upon:

1) receiving a SIP 200 (OK) response for a SIP INVITE request as specified in clause 9.2.1.4.1;

2) the timer TNG1 (acknowledged call setup timer) is not running;

3) the local counter of the number of SIP 200 (OK) responses received from invited members is equal to the value of the <on-network-minimum-number-to-start> element of the group document;

4) the controlling MCVideo function supports media buffering; and

5) the SIP final response has not yet been sent to the inviting MCVideo client;

the controlling MCVideo function according to local policy:

1) shall generate SIP 200 (OK) response to the SIP INVITE request as specified in the clause 6.3.3.2.2;

2) shall include the warning text set to "122 too many participants" as specified in clause 4.4 in the SIP 200 (OK) response, if all members were not invited because the prearranged MCVideo group has exceeded the <max-participant-count> members as specified in 3GPP TS 24.481 [24];

3) shall include in the SIP 200 (OK) response an SDP answer to the SDP offer in the incoming SIP INVITE request as specified in the clause 6.3.3.2.1;

4) if the SIP INVITE request contains an alert indication set to a value of "true" and this is an unauthorised request for an MCVideo emergency alert as specified in clause 6.3.3.1.13.1, shall include in the SIP 200 (OK) response the warning text set to "149 SIP INFO request pending" in a Warning header field as specified in clause 4.4;

5) if the received SIP INVITE request contains an application/vnd.3gpp.mcvideo-info+xml MIME body with the <imminentperil-ind> element set to a value of "true" and if the in-progress emergency state of the group is set to a value of "true", shall include in the SIP 200 (OK) response the warning text set to "149 SIP INFO request pending" in a Warning header field as specified in clause 4.4;

6) shall interact with the media plane as specified in 3GPP TS 24.581 [5] clause 6.3;

NOTE 11: Resulting media plane processing is completed before the next step is performed.

7) shall send a SIP 200 (OK) response to the inviting MCVideo client according to 3GPP TS 24.229 [11];

8) shall generate a notification to the MCVideo clients, which have subscribed to the conference state event package that the inviting MCVideo user has joined in the MCVideo group session, as specified in clause 6.3.3.4; and

NOTE 12: As a group document can potentially have a large content, the controlling MCVideo function can notify using content-indirection as defined in IETF RFC 4483 [29].

9) shall send the SIP NOTIFY request to the MCVideo clients according to 3GPP TS 24.229 [11].

Upon expiry of timer TNG1 (acknowledged call setup timer), if there are outstanding SIP 200 (OK) responses to SIP INVITE requests sent to affiliated and <on-network-required> group members as specified in 3GPP TS 24.481 [24], the controlling MCVideo function shall follow the procedures specified in clause 6.3.3.3*.*

If timer TNG1 (acknowledged call setup timer) is running and a final SIP 4xx, 5xx or 6xx response is received from an affiliated and <on-network-required> group member as specified in 3GPP TS 24.481 [24], the controlling MCVideo function shall follow the relevant procedures specified in clause 6.3.3.3*.*

If:

1) timer TNG1 (acknowledged call setup timer) is not running;

2) the local counter of the number of SIP 200 (OK) responses received from invited members is equal to the value of the <on-network-minimum-number-to-start> element of the group document; and

3) a final SIP 4xx, 5xx or 6xx response is received from an invited MCVideo client;

then the controlling MCVideo function shall perform one of the following based on policy:

1) send the SIP final response towards the inviting MCVideo client, according to 3GPP TS 24.229 [11], if a SIP final response was received from all the other invited MCVideo clients and the SIP 200 (OK) response is not yet sent; or

2) remove the invited MCVideo client from the MCVideo Session as specified in clause 6.3.3.1.5, if a SIP final response other than 2xx or 3xx was received from all the invited MCVideo clients and the SIP 200 (OK) response is already sent. The controlling MCVideo function may invite an additional member of the prearranged MCVideo group as specified in clause 9.2.1.4.1 that has not already been invited, if the prearranged MCVideo group has more than <on-network-max-participant-count> members as specified in 3GPP TS 24.481 [24], and all members have not yet been invited.

Upon receiving a SIP ACK to the SIP 200 (OK) response sent towards the inviting MCVideo client, and the SIP 200 (OK) response was sent with the warning text set to "149 SIP INFO request pending" in a Warning header field as specified in clause 4.4, the controlling MCVideo function shall follow the procedures in clause 6.3.3.1.18.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

###### 9.2.1.5.2.2 Initiating a prearranged group call

Upon receipt of a "SIP INVITE request for non-controlling MCVideo function of an MCVideo group" and if a prearranged group call is not ongoing, the non-controlling MCVideo function of an MCVideo group:

NOTE 1: The Contact header field of the SIP INVITE request contains the "isfocus" feature media tag.

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the SIP INVITE request with a SIP 500 (Server Internal Error) response. The controlling MCVideo function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [15]. Otherwise, continue with the rest of the steps;

2) shall determine if the media parameters are acceptable and the MCVideo codecs are offered in the SDP offer and if not reject the request with a SIP 488 (Not Acceptable Here) response. Otherwise, continue with the rest of the steps;

3) shall reject the SIP request with a SIP 403 (Forbidden) response and not process the remaining steps if:

a) an Accept-Contact header field does not include the g.3gpp.mcvideo media feature tag; or

b) an Accept-Contact header field does not include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcvideo";

4) if the partner MCVideo system does not have a mutual aid relationship with the primary MCVideo system identified by the contents of the P-Asserted-Identity, shall reject the "SIP INVITE request for non-controlling MCVideo function of an MCVideo group" with a SIP 403 (Forbidden) response, with warning text set to "128 isfocus already assigned" in a Warning header field as specified in clause 4.4, and shall not process the remaining steps;

6) shall retrieve the group document from the group management server for the MCVideo group ID contained in the <mcvideo-request-uri> element of the application/vnd.3gpp.mcvideo-info+xml MIME body of the SIP INVITE request and carry out initial processing as specified in clause 6.3.5.2 and continue with the rest of the steps if the checks in clause 6.3.5.2 succeed;

7) shall cache the content of the SIP INVITE request, if received in the Contact header field and if the specific feature tags are supported;

8) shall check if a Resource-Priority header field is included in the incoming SIP INVITE request and may apply any preferential treatment to the SIP request as specified in 3GPP TS 24.229 [11];

9) determine the members to invite to the prearranged MCVideo group call as specified in clause 6.3.5.5;

10) if the group document retrieved from the group management server contains <on-network-required> group members as specified in 3GPP TS 24.481 [24], shall send a SIP 183 (Session Progress) response to the SIP INVITE request for non-controlling MCVideo function of an MCVideo group as specified in clause x.x.x and shall populate the response with an application/vnd.3gpp.mcvideo-info+xml MIME body containing the <required> element set to "true".

11) if the group document retrieved from the group management server does not contain any <on-network-required> group members as specified in 3GPP TS 24.481 [24], may, according to local policy, send a SIP 183 (Session Progress) response to the SIP INVITE request for non-controlling MCVideo function of an MCVideo group as specified in clause x.x.x;

12) shall invite each group member determined in step 9) above, to the group session, as specified in clause 9.2.1.5.1; and

13) shall interact with the media plane as specified in 3GPP TS 24.581 [5] clause 6.3;

Unless a SIP response has been sent to the controlling MCVideo function as specified in step 10 or 11 above, the non-controlling MCVideo function of an MCVideo group shall wait for the first SIP provisional response or first SIP 200 (OK) response from one of the invited MCVideo clients, before sending a response to the SIP INVITE request for non-controlling MCVideo function of an MCVideo group.

Upon receiving the first 18x response to a SIP INVITE request sent to an invited MCVideo client as specified in clause 9.2.1.5.1, not containing a P-Answer-State header field, and if a SIP 183 (Session Progress) response has not already been sent in response to the SIP INVITE request for non-controlling MCVideo function of an MCVideo group, the non-controlling MCVideo function of an MCVideo group:

1) shall generate a SIP 183 (Session Progress) response as described in clause x.x.x; and

2) shall forward the SIP 183 (Session Progress) response to the controlling MCVideo function according to 3GPP TS 24.229 [11].

Upon receiving the first 18x response to a SIP INVITE request sent to an invited MCVideo client as specified in clause 9.2.1.5.1, containing a P-Answer-State header field with the value "Unconfirmed" as specified in IETF RFC 4964 [30], a SIP 183 (Session Progress) response has not already been sent in response to the SIP INVITE request for non-controlling MCVideo function of an MCVideo group and the non-controlling MCVideo function of an MCVideo group supports media buffering, the non-controlling MCVideo function of an MCVideo group:

1) shall generate SIP 200 (OK) response to the SIP INVITE request as specified in the clause x.x.x before continuing with the rest of the steps;

2) shall include in the SIP 200 (OK) response an SDP answer to the SDP offer in the incoming SIP INVITE request as specified in the clause x.x.x;

3) shall interact with the media plane as specified in 3GPP TS 24.581 [5] clause 6.3.5; and

NOTE 2: Resulting media plane processing is completed before the next step is performed.

4) shall send a SIP 200 (OK) response to the controlling MCVideo function according to 3GPP TS 24.229 [11].

If the group document does not contain any <on-network-required> group members as specified in 3GPP TS 24.481 [24], then upon receiving the first SIP 200 (OK) response to a SIP INVITE request sent to an invited MCVideo client as specified in clause 9.2.1.5.1, the non-controlling MCVideo function of an MCVideo group:

1) shall generate SIP 200 (OK) response to the SIP INVITE request as specified in the clause x.x.x before continuing with the rest of the steps;

2) shall include in the SIP 200 (OK) response an SDP answer to the SDP offer in the incoming SIP INVITE request as specified in the clause x.x.x;

3) shall interact with the media plane as specified in 3GPP TS 24.581 [5] clause 6.3.5; and

NOTE 3: Resulting media plane processing is completed before the next step is performed.

4) shall send a SIP 200 (OK) response to the controlling MCVideo function according to 3GPP TS 24.229 [11];

If the group document contains <on-network-required> group member(s) as specified in 3GPP TS 24.481 [24], then the non-controlling MCVideo function of an MCVideo group shall wait until all SIP 200 (OK) responses to SIP INVITE requests have been received from the <on-network-required> MCVideo clients before sending a SIP 200 (OK) response back to the controlling MCVideo function, as specified above.

If all invited MCVideo clients have rejected SIP INVITE requests with a SIP 3xx, 4xx, 5xx or 6xx response, the non-controlling MCVideo function of an MCVideo group:

1) shall generate a SIP reject response as specified in 3GPP TS 24.229 [11];

2) shall, from the list of reject response codes cached by the non-controlling MCVideo function of an MCVideo group, select the highest prioritized cached reject response code as specified in IETF RFC 3261 [15]; and

3) shall send the reject response towards the controlling MCVideo function as specified in 3GPP TS 24.229 [11].

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

###### 9.2.1.5.2.3 Joining an ongoing prearranged group call

Upon receipt of a "SIP INVITE request for non-controlling MCVideo function of an MCVideo group" and if a prearranged group call is already ongoing, the non-controlling MCVideo function of an MCVideo group:

NOTE 1: The Contact header field of the SIP INVITE request contains the "isfocus" feature media tag.

1) shall determine if the media parameters are acceptable and the MCVideo codecs are offered in the SDP offer and if not, reject the request with a SIP 488 (Not Acceptable Here) response. Otherwise, continue with the rest of the steps;

2) shall reject the SIP request with a SIP 403 (Forbidden) response and not process the remaining steps if:

a) an Accept-Contact header field does not include the g.3gpp.mcvideo media feature tag; or

b) an Accept-Contact header field does not include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcvideo";

3) if the partner MCVideo system does not have a mutual aid relationship to merged an ongoing prearranged call with the primary MCVideo system identified by the contents of the P-Asserted-Identity, shall reject the "SIP INVITE request for non-controlling MCVideo function of an MCVideo group" with a SIP 403 (Forbidden) response, with warning text set to "128 isfocus already assigned" in a Warning header field as specified in clause 4.4, and shall not process the remaining steps;

4) shall cache the content of the SIP INVITE request, if received in the Contact header field and if the specific feature tags are supported;

5) shall check if a Resource-Priority header field is included in the incoming SIP INVITE request and may apply any preferential treatment to the SIP request as specified in 3GPP TS 24.229 [11];

6) shall generate SIP 200 (OK) response to the SIP INVITE request as specified in the clause x.x.x before continuing with the rest of the steps;

7) shall include in the SIP 200 (OK) response an SDP answer to the SDP offer in the incoming SIP INVITE request as specified in the clause x.x.x;

NOTE 2: Resulting media plane processing is completed before the next step is performed.

8) shall send a SIP 200 (OK) response to the controlling MCVideo function according to 3GPP TS 24.229 [11]; and

9) if at least one of the MCVideo clients in the pre-arranged group session has a subscription to the conference event package, shall subscribe to the conference event package from the controlling MCVideo function as specified in clause 9.2.3.5.3.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

###### 9.2.2.2.1.3 MCVideo in-progress emergency cancel

This clause covers both on-demand session.

Upon receiving a request from an MCVideo user to cancel the in-progress emergency condition on a chat MCVideo group, the MCVideo client shall generate a SIP re-INVITE request as specified in 3GPP TS 24.229 [11], with the clarifications given below.

The MCVideo client:

1) if the MCVideo user is not authorised to cancel the in-progress emergency group state of the MCVideo group as determined by the procedures of clause 6.2.8.1.7, the MCVideo client:

a) should indicate to the MCVideo user that they are not authorised to cancel the in-progress emergency group state of the MCVideo group; and

b) shall skip the remaining steps of the current clause;

2) shall, if the MCVideo user is cancelling an in-progress emergency condition and optionally an MCVideo emergency alert originated by the MCVideo user, include an application/vnd.3gpp.mcvideo-info+xml MIME body populated as specified in clause 6.2.8.1.3;

3) shall, if the MCVideo user is cancelling an in-progress emergency condition and optionally an MCVideo emergency alert originated by another MCVideo user, include an application/vnd.3gpp.mcvideo-info+xml MIME body populated as specified in clause 6.2.8.1.14;

4) shall, if the SIP re-INVITE request is to be sent within an on-demand session, include in the SIP re-INVITE request an SDP offer according to 3GPP TS 24.229 [11] with the clarifications specified in clause 6.2.1;

5) shall include a Resource-Priority header field and comply with the procedures in clause 6.2.8.1.2; and

6) shall send the SIP re-INVITE request according to 3GPP TS 24.229 [11].

On receiving a SIP 2xx response to the SIP re-INVITE request, the MCVideo client:

1) shall set the MCVideo emergency group state of the group to "MVEG 1: no-emergency";

2) shall set the MCVideo emergency group call state of the group to "MVEGC 1: emergency-gc-capable"; and

3) if the MCVideo emergency alert state is set to "MVEA 4: Emergency-alert-cancel-pending", the sent SIP re-INVITE request did not contain an <originated-by> element in the application/vnd.3gpp.mcvideo-info+xml MIME body and the SIP 2xx response to the SIP request for a priority group call does not contain a Warning header field as specified in clause 4.4 with the warning text containing the mcvideo-warn-code set to "149", shall set the MCVideo emergency alert state to "MVEA 1: no-alert".

On receiving a SIP 4xx response, SIP 5xx response or SIP 6xx response to the SIP re-INVITE request:

1) shall set the MCVideo emergency group state as "MVEG 2: in-progress";

2) if the SIP 4xx response, SIP 5xx response or SIP 6xx response contains an application/vnd.3gpp.mcvideo-info+xml MIME body with an <alert-ind> element set to a value of "true" and the sent SIP re-INVITE request did not contain an <originated-by> element in the application/vnd.3gpp.mcvideo-info+xml MIME body, the MCVideo client shall set the MCVideo emergency alert state to "MVEA 3: emergency-alert-initiated"; and

3) if the SIP 4xx response, SIP 5xx response or SIP 6xx response did not contain an application/vnd.3gpp.mcvideo-info+xml MIME body with an <alert-ind> element and did not contain an <originated-by> element, the MCVideo emergency alert (MVEA) state shall revert to its value prior to entering the current procedure.

NOTE 3: If the in-progress emergency group state cancel request is rejected, the state of the session does not change, i.e. continues with MCVideo emergency group call level priority.

On receiving a SIP INFO request where the Request-URI contains an MCVideo session ID identifying an ongoing group session, the MCVideo client shall follow the actions specified in clause 6.2.8.1.13.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

###### 9.2.2.5.1.4 Splitting an ongoing chat group call

Upon receipt of a SIP BYE request, the non-controlling MCVideo function of an MCVideo group:

1) if keeping the chat group call active is according to the release policy in clause 6.3.8.1, shall request media plane to switch to controlling mode as specified in 3GPP TS 24.581 [5] clause 6.3.5;

NOTE 1: Resulting media plane processing is completed before the next step is performed.

2) shall send a SIP 200 (OK) response to the SIP BYE request; and

3) if at least one MCVideo client has subscribed to the conference package, shall send a NOTIFY request to all participants with a subscription to the conference event package as specified in clause 9.2.3.5.2.

NOTE 2: The SIP NOTIFY request will indicate that all participants, with the exception of the MCVideo users belonging to the constituent MCVideo group hosted by the non-controlling MCVideo function, have left the group session.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

##### 9.3.1.1.2 Session description

One off-network MCVideo session includes one media-transmission control entity.

The MCVideo client shall generate an SDP body for a group call in accordance with rules and procedures of IETF RFC 4566 [2].

The MCVideo client:

1) shall include in the session-level section:

a) the "o=" field with the <username> portion set to a dash;

b) the "s=" field with the <session name> portion set to a dash; and

c) the "c=" field with the <nettype> portion set to "IN", the <addrtype> portion set to the IP version of a multicast IP address of the MCVideo group and the <connection-address> portions set to the multicast IP address of the MCVideo group;

2) shall include the media-level clause for audio component of MCVideo consisting of:

a) the "m=" field with the <media> portion set to "audio", the <port> portion set to a port number for MCVideo group, the <proto> field set to "RTP/AVP" and <fmt> portion set indicating RTP payload type numbers;

b) the "i=" field with the <session description> portion set to "audio component of MCVideo";

c) the "a=fmtp:" attribute(s), the "a=rtpmap:" attribute(s) or both, indicating the codec(s) and media parameters of the audio component of MCVideo; and

d) the "a=rtcp:" attribute indicating port number to be used for RTCP at the MCVideo client selected according to the rules and procedures of IETF RFC 3605 [3], if the media steam uses other than the default IP address;

3) shall include the media-level clause for video component of MCVideo consisting of:

a) the "m=" field with the <media> portion set to "video", the <port> portion set to a port number for MCVideo video of the MCVideo group, the <proto> field set to "RTP/AVP" and <fmt> portion set indicating RTP payload type numbers;

b) the "i=" field with the <session description> portion set to "video component of MCVideo";

c) the "a=fmtp:" attribute(s), the "a=rtpmap:" attribute(s) or both, indicating the codec(s) and media parameters of the video component of MCVideo;

Editor's Note: Inclusion and usage of preferred video codec is FFS.

d) the "a=rtcp:" attribute indicating port number to be used for RTCP at the MCVideo client selected according to the rules and procedures of IETF RFC 3605 [3], if the media steam uses other than the default IP address; and

4) shall include the media-level clause for media-transmission control entity consisting of:

a) an "m=" line, with the <media> portion set to "application", the <port> portion set to a port number for media-transmission control entity of the MCVideo group, the <proto> field set to "udp" and <fmt> portion set to "MCVideo"; and

b) the "a=fmtp:MCVideo" attribute indicating the parameters of the media-transmission control entity as specified in 3GPP TS 24.581 [5];

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

##### 10.2.2.2.2 Client terminating procedures

Upon receipt of an initial SIP INVITE request, the MCVideo client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [11] with the clarifications below.

The MCVideo client:

1) may reject the SIP INVITE request if any of the following conditions are met:

a) MCVideo client is already occupied in another session and the number of simultaneous sessions exceeds the value of the <Max-Simul-Call-Nc10> element of the <MCVIDEO-Private-Call> element of the <Common> element of the MCVideo UE configuration document, the maximum simultaneous MCVideo session for private call, as specified in TS 24.484 [25];

b) MCVideo client does not have enough resources to handle the call; or

c) any other reason outside the scope of this specification;

otherwise, continue with the rest of the steps.

NOTE 1: If the SIP INVITE request contains an application/vnd.3gpp.mcvideo-info+xml MIME body with the <emergency-ind> element set to a value of "true", the participating MCVideo function can choose to accept the request.

2) if the SIP INVITE request is rejected in step 1), shall respond toward participating MCVideo function either with appropriate reject code as specified in 3GPP TS 24.229 [11] and warning texts as specified in clause 4.4.2 or with SIP 480 (Temporarily unavailable) response not including warning texts if the user is authorised to restrict the reason for failure according to <allow-failure-restriction> as specified in 3GPP TS 24.484 [25] and skip the rest of the steps of this clause;

3) if the SIP INVITE request contains an application/vnd.3gpp.mcvideo-info+xml MIME body with the <mcvideoinfo> element containing the <mcvideo-Params> element with the <emergency-ind> element set to a value of "true":

a) should display to the MCVideo user an indication that this is a SIP INVITE request for an MCVideo emergency private call and:

i) should display the MCVideo ID of the originator of the MCVideo emergency private call contained in the <mcvideo-calling-user-id> element of the application/vnd.3gpp.mcvideo-info+xml MIME body; and

ii) if the <alert-ind> element is set to "true", should display to the MCVideo user an indication of the MCVideo emergency alert and associated information; and

b) shall set the MCVideo emergency private priority state to "MVEPP 2: in-progress" for this private call;

4) if the SDP offer of the SIP INVITE request contains an "a=key-mgmt" attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I\_MESSAGE:

a) shall extract the MCVideo ID of the originating MCVideo client from the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [8];

b) shall convert the MCVideo ID to a UID as described in 3GPP TS 33.180 [8];

c) shall use the UID to validate the signature of the MIKEY-SAKKE I\_MESSAGE as described in 3GPP TS 33.180 [8];

d) if authentication verification of the MIKEY-SAKKE I\_MESSAGE fails, shall reject the SIP INVITE request with a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [34], and include warning text set to "136 authentication of the MIKEY-SAKE I\_MESSAGE failed" in a Warning header field as specified in clause 4.4; and

e) if the signature of the MIKEY-SAKKE I\_MESSAGE was successfully validated:

i) shall extract and decrypt the encapsulated PCK using the terminating user's (KMS provisioned) UID key as described in 3GPP TS 33.180 [8]; and

ii) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.180 [8];

NOTE 2: With the PCK successfully shared between the originating MCVideo client and the terminating MCVideo client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

5) may check if a Resource-Priority header field is included in the incoming SIP INVITE request and may perform further actions outside the scope of this specification to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [11];

6) may display to the MCVideo user the MCVideo ID of the inviting MCVideo user;

7) shall perform the automatic commencement procedures specified in clause 6.2.3.1.1 if one of the following conditions are met:

a) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCVideo service setting at the invited MCVideo client for answering the call is set to automatic commencement mode;

b) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCVideo service setting at the invited MCVideo client for answering the call is set to manual commencement mode, yet the invited MCVideo client is willing to answer the call with automatic commencement mode; or

c) SIP INVITE request contains a Priv-Answer-Mode header field with the value of "Auto"; and

8) shall perform the manual commencement procedures specified in clause 6.2.3.2.1 if either of the following conditions are met:

a) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCVideo service setting at the invited MCVideo client for answering the call is set to manual commencement mode;

b) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCVideo service setting at the invited MCVideo client for answering the call is set to automatic commencement mode, yet the invited MCVideo client allows the call to be answered with manual commencement mode; or

c) SIP INVITE request contains a Priv-Answer-Mode header field with the value of "Manual".

Upon receiving the SIP CANCEL request cancelling a SIP INVITE request for which a dialog exists at the MCVideo client and a SIP 200 (OK) response has not yet been sent to the SIP INVITE request then the MCVideo client:

1) shall send a SIP 200 (OK) response to the SIP CANCEL request according to 3GPP TS 24.229 [11]; and

2) shall send a SIP 487 (Request Terminated) response to the SIP INVITE request according to 3GPP TS 24.229 [11].

Upon receiving a SIP BYE request for an established dialog, the MCVideo client:

1) shall follow the procedures in clause 10.2.5.2.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

##### 10.3.1.1.2 Session description

One off-network MCVideo session includes one media-transmission control entity.

The MCVideo client shall generate an SDP body for a private call in accordance with rules and procedures of IETF RFC 4566 [2] and IETF RFC 3264 [7].

The MCVideo client:

1) shall include in the session-level section:

a) the "o=" field with the <username> portion set to a dash;

b) the "s=" field with the <session name> portion set to a dash; and

c) the "c=" field with the <nettype> portion set to "IN", the <addrtype> portion set to the IP version of the unicast IP address of the MCVideo client and the <connection-address> portion set to the unicast IP address of the MCVideo client;

2) shall include the media-level clause for audio component of MCVideo consisting of:

a) the "m=" field with the <media> portion set to "audio", the <port> portion set to a port number for MCVideo group, the <proto> field set to "RTP/AVP" and <fmt> portion set indicating RTP payload type numbers;

b) the "i=" field with the <session description> portion set to "audio component of MCVideo";

c) the "a=fmtp:" attribute(s), the "a=rtpmap:" attribute(s) or both, indicating the codec(s) and media parameters of the audio component of MCVideo; and

d) the "a=rtcp:" attribute indicating port number to be used for RTCP at the MCVideo client selected according to the rules and procedures of IETF RFC 3605 [3], if the media steam uses other than the default IP address;

3) shall include the media-level clause for video component of MCVideo consisting of:

a) the "m=" field with the <media> portion set to "video", the <port> portion set to a port number for MCVideo video of the MCVideo group, the <proto> field set to "RTP/AVP" and <fmt> portion set indicating RTP payload type numbers;

b) the "i=" field with the <session description> portion set to "video component of MCVideo";

c) the "a=fmtp:" attribute(s), the "a=rtpmap:" attribute(s) or both, indicating the codec(s) and media parameters of the video component of MCVideo; and

d) the "a=rtcp:" attribute indicating port number to be used for RTCP at the MCVideo client selected according to the rules and procedures of IETF RFC 3605 [3], if the media steam uses other than the default IP address;

4) shall include the media-level clause for media-transmission control entity consisting of:

a) an "m=" line, with the <media> portion set to "application", the <port> portion set to a port number for media-transmission control entity of the MCVideo group, the <proto> field set to "udp" and <fmt> portion set to "MCVideo"; and

b) the "a=fmtp:MCVideo" attribute indicating the parameters of the media-transmission control entity as specified 3GPP TS 24.581 [5]; and

5) shall include the MIKEY-SAKKE I\_MESSAGE, if generated by the MCVideo client, in an "a=key-mgmt" attribute as a "mikey" attribute value in the SDP offer as specified in IETF RFC 4567 [6].

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

###### 10.3.2.4.2.1 Initiating a private call

When in the "P0: start-stop" state or "P1: ignoring same call id", upon an indication from MCVideo User to initiate a private call and the value of "/<x>/<x>/Common/PrivateCall/Authorised" leaf node present in the user profile as specified in 3GPP TS 24.483 [4] is set to "true", the MCVideo client:

1) shall generate and store the call identifier as a random number uniformly distributed between (0, 65536);

2) shall store own MCVideo user ID as caller ID;

3) shall store MCVideo user ID of the callee as callee ID;

4) shall store "AUTOMATIC COMMENCEMENT MODE" as commencement mode, if requested and the value of "/<x>/<x>/Common/PrivateCall/AutoCommence" leaf node present in the user profile as specified in 3GPP TS 24.483 [4] is set to "true". Otherwise if the value of "/<x>/<x>/Common/PrivateCall/ManualCommence" leaf node present in the user profile as specified in 3GPP TS 24.483 [4] is set to "true", store "MANUAL COMMENCEMENT MODE" as commencement mode;

5) shall store "PRIVATE CALL" as the current call type;;

6) if an end-to-end security context needs to be established then:

a) shall use keying material provided by the key management server to generate a PCK as described in 3GPP TS 33.180 [8];

b) shall use the PCK to generate a PCK-ID with the four most significant bits set to "0001" to indicate that the purpose of the PCK is to protect private call communications and with the remaining twenty eight bits being randomly generated as described in 3GPP TS 33.180 [8];

c) shall encrypt the PCK to a UID associated to the MCVideo client using the MCVideo ID of the invited user and a time related parameter as described in 3GPP TS 33.180 [8];

d) shall generate a MIKEY-SAKKE I\_MESSAGE using the encapsulated PCK and PCK-ID as specified in 3GPP TS 33.180 [8];

e) shall add the MCVideo ID of the originating MCVideo to the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [8];

f) shall sign the MIKEY-SAKKE I\_MESSAGE using the originating MCVideo user's signing key provided in the keying material together with a time related parameter, and add this to the MIKEY-SAKKE payload, as described in 3GPP TS 33.180 [8] and;

g) shall store the MIKEY-SAKKE I\_MESSAGE for later inclusion in an SDP body;

7) may store current user location as user location;

8) shall set the stored current ProSe per-packet priority to value corresponding to MCVideo off-network private call as described in 3GPP TS 24.483 [4].

9) shall generate and store offer SDP, as defined in clause 10.3.1.1.2;

10) shall generate a PRIVATE CALL SETUP REQUEST message as specified in clause 17.1.5. In the PRIVATE CALL SETUP REQUEST message, the MCVideo client:

a) shall set the Call identifier IE with the stored call identifier;

b) shall set the MCVideo user ID of the caller IE with the stored caller ID;

c) shall set the MCVideo user ID of the callee IE with the stored callee ID;

d) shall set the Commencement mode IE with the stored commencement mode;

e) shall set the Call type IE with the stored current call type;

f) shall set the SDP offer IE with the stored offer SDP; and

g) may set the User location IE with the stored user location.

11) shall send the PRIVATE CALL SETUP REQUEST message towards other MCVideo client according to rules and procedures as specified in clause 10.3.1.1.1;

12) shall initialize the counter CFP1 (private call request retransmission) with the value set to 1;

13) shall start timer TFP1 (private call request retransmission); and

14) shall enter the "P2: waiting for call response" state.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

###### 10.3.2.4.3.2 Responding to private call setup request when not participating in the ongoing call

When in the "P0: start-stop" or "P1: ignoring same call id" state, upon receiving a PRIVATE CALL SETUP REQUEST message with Commencement mode IE set to "AUTOMATIC COMMENCEMENT MODE" and Call identifier IE different than stored call identifier and media session declared in SDP body of PRIVATE CALL SETUP REQUEST message can be established, the MCVideo client:

1) shall store the Call identifier IE in the received message as call identifier;

2) shall set the stored current call type to "PRIVATE CALL";

3) shall set the stored current ProSe per-packet priority to value corresponding to MCVideo off-network private call as described in 3GPP TS 24.483 [4].

4) shall store the MCVideo user ID of the caller IE in the received PRIVATE CALL SETUP REQUEST message as caller ID;

5) shall store own MCVideo user ID as callee ID;

6) if the SDP offer contains an "a=key-mgmt" attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I\_MESSAGE:

a) shall extract the MCVideo ID of the originating MCVideo user from the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [8];

b) shall convert the MCVideo ID to a UID as described in 3GPP TS 33.180 [8];

c) shall use the UID to validate the signature of the MIKEY-SAKKE I\_MESSAGE as described in 3GPP TS 33.180 [8];

d) if the validation of the signature failed, shall generate a PRIVATE CALL REJECT message as specified in clause 17.1.8. In the PRIVATE CALL REJECT message, the MCVideo client:

i) shall set the call identifier IE to the stored call identifier;

ii) shall set the MCVideo user ID of the caller IE with the stored caller ID;

iii) shall set the MCVideo user ID of the callee IE with the stored callee ID;

iv) shall set the Reason IE as "FAILED", if requested to restrict notification of call failure and the value of "/*<x>*/*<x>*/Common/PrivateCall/FailRestrict" leaf node present in the user profile as specified in 3GPP TS 24.483 [4] is set to "true". Otherwise, shall set the reason IE as "E2E SECURITY CONTEXT FAILURE";

v) shall send the PRIVATE CALL REJECT message in response to the request message according to rules and procedures as specified in clause 10.3.1.1.1; and

vi) shall remain in the current state;

e) if the validation of the signature was successful:

i) shall extract and decrypt the encapsulated PCK using the terminating user's (KMS provisioned) UID key as described in 3GPP TS 33.180 [8];

ii) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.180 [8];

iii) shall generate and store answer SDP based on received SDP offer IE in PRIVATE CALL SETUP REQUEST message, as defined in clause 10.3.1.1.2;

iv) shall generate a PRIVATE CALL ACCEPT message as specified in clause 17.1.7. In the PRIVATE CALL ACCEPT message, the MCVideo client:

A) shall set the Call identifier IE to the stored call identifier; and

B) shall set the MCVideo user ID of the caller IE with stored caller ID.

C) shall set the MCVideo user ID of the callee IE with stored callee ID; and

D) shall set the SDP answer IE with the stored answer SDP;

v) shall send PRIVATE CALL ACCEPT message in response to the request message according to rules and procedures as specified in clause 10.3.1.1.1;

vi) shall establish a media session based on the SDP body of the stored answer SDP;

vii) shall initialize the counter CFP4 with value set to 1;

viii) shall start timer TFP4 (private call accept retransmission); and

ix) shall enter the "P5: pending" state; and

NOTE: With the PCK successfully shared between the originating MCVideo client and the terminating MCVideo client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

7) if the SDP offer does not contain an "a=key-mgmt" attribute, the MCVideo client:

a) shall generate and store answer SDP based on received SDP offer IE in PRIVATE CALL SETUP REQUEST message, as defined in clause 10.3.1.1.2;

b) shall generate a PRIVATE CALL ACCEPT message as specified in clause 17.1.7:

i) shall set the Call identifier IE to the stored call identifier;

ii) shall set the MCVideo user ID of the caller IE with stored caller ID.

iii) shall set the MCVideo user ID of the callee IE with stored callee ID; and

iv) shall set the SDP answer IE with the stored answer SDP;

c) shall send PRIVATE CALL ACCEPT message in response to the request message according to rules and procedures as specified in clause 10.3.1.1.1;

d) shall establish a media session based on the SDP body of the stored answer SDP;

e) shall initialize the counter CFP4 with value set to 1;

f) shall start timer TFP4 (private call accept retransmission); and

g) shall enter the "P5: pending" state.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

###### 10.3.2.4.4.1 Incoming private call

When in the "P0: start-stop" or "P1: ignoring same call id" state, upon receiving a PRIVATE CALL SETUP REQUEST message with Commencement mode IE set to "MANUAL COMMENCEMENT MODE" and Call identifier IE different from stored call identifier, the MCVideo client:

1) shall store the Call identifier IE in the received message as call identifier;

2) shall set the stored current call type to "PRIVATE CALL";

3) shall set the stored current ProSe per-packet priority to value corresponding to MCVideo off-network private call as described in 3GPP TS 24.483 [4].

4) shall store the MCVideo user ID of the caller IE as received in the PRIVATE CALL SETUP REQUEST as caller ID;

5) shall store own MCVideo user ID as callee ID;

6) shall generate a PRIVATE CALL RINGING message as specified in clause 17.1.6;

a) shall set the Call identifier IE to the stored call identifier;

b) shall set the MCVideo user ID of the caller IE with the stored caller ID; and

c) shall set the MCVideo user ID of the callee IE with the stored callee ID;

7) shall send PRIVATE CALL RINGING message in response to the request message according to rules and procedures as specified in clause 10.3.1.1.1;

8) shall start timer TFP2 (waiting for call response message); and

9) shall enter the "P5: pending" state.

**\* \* \* \* \* NEXT CHANGE \* \* \* \* \***

## F.1.3 Semantic

The <mcvideoinfo> element is the root element of the XML document. The <mcvideoinfo> element can contain subelements.

NOTE 1: The subelements of the <mcvideo-info> are validated by the <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/> particle of the <mcvideo-info> element

If the <mcvideoinfo> contains the <mcvideo-Params> element then:

1) the <mcvideo-access-token>, <mcvideo-request-uri>, <mcvideo-calling-user-id>, <mcvideo-called-party-id>, <mcvideo-calling-group-id>, <emergency-ind>, <alert-ind>, <imminentperil-ind>, <originated-by> and <mcvideo-client-id> can be included with encrypted content;

2) for each element in 1) that is included with content that is not encrypted:

a) the element has the "type" attribute set to "Normal";

b) if the element is the <mcvideo-request-uri>, <mcvideo-calling-user-id>, <mcvideo-called-party-id> or <mcvideo-calling-group-id> or <originated-by> then the <mcvideoURI> element is included;

c) if the element is the <mcvideo-access-token> or <mcvideo-client-id>, then the <mcvideoString> element is included; and

d) if the element is <emergency-ind>, <alert-ind> or <imminentperil-ind> elements then the <mcvideoBoolean> element is included;

3) for each element in 1) that is included with content that is encrypted:

a) the element has the "type" attribute set to "Encrypted";

b) the <xenc:EncryptedData> element from the "[http://www.w3.org/2001/04/xmlenc#](http://www.w3.org/2001/04/xmlenc)" namespace is included and:

i) can have a "Type" attribute can be included with a value of "<http://www.w3.org/2001/04/xmlenc#Content>";

ii) can include an <EncryptionMethod> element with the "Algorithm" attribute set to value of "http://www.w3.org/2009/xmlenc11#aes128-gcm";

iii) can include a <KeyInfo> element with a <KeyName> element containing the base 64 encoded XPK-ID; and

iv) includes a <CipherData> element with a <CipherValue> element containing the encrypted data.

NOTE 2: When the optional attributes and elements are not included within the <xenc:EncryptedData> element, the information they contain is known to sender and the receiver by other means.

If the <mcvideoinfo> contains the <mcvideo-Params> element then:

1) the <mcvideo-access-token> can be included with the access token received during authentication procedure as described in 3GPP TS 24.482 [52];

2) the <session-type> can be included with:

a) a value of "chat" to indicate that the MCVideo client wants to join a chat group call

b) a value of "prearranged" to indicate the MCVideo client wants to make a prearranged group call; or

c) a value of "private" to indicate the MCVideo client wants to make a private call;

3) the <mcvideo-request-uri> can be included with:

a) a value set to an MCVideo group ID or temporary MCVideo group ID when the <session-type> is set to a value of "prearranged" or "chat"; and

b) a value set to the MCVideo ID of the called MCVideo user when the <session-type> is set to a value of "private";

4) the <mcvideo-calling-user-id> can be included, set to MCVideo ID of the originating user;

5) the <mcvideo-called-party-id> can be included, set to the MCVideo ID of the terminating user;

6) the <mcvideo-calling-group-id> can be included to indicate the MCVideo group identity to the terminating user;

7) the <required> can be included in a SIP 183 (Session Progress) from a non-controlling MCVideo function of an MCVideo group to inform the controlling MCVideo function that the group on the non-controlling MCVideo function has group members in the group document which are marked as <on-network-required>, as specified in 3GPP TS 24.481 [24];

8) the <emergency-ind> can be:

a) set to "true" to indicate that the call that the MCVideo client is initiating is an emergency MCVideo call; or

b) set to "false" to indicate that the MCVideo client is cancelling an emergency MCVideo call (i.e. converting it back to a non-emergency call)

9) the <alert-ind> can be:

a) set to "true" in an emergency call initiation to indicate that an alert to be sent; or

b) set to "false" when cancelling an emergency call which requires an alert to be cancelled also

10) if the <session-type> is set to "chat" or "prearranged":

a) the <imminentperil-ind> can be set to "true" to indicate that the call that the MCVideo client is initiating is an imminent peril group MCVideo call;

11) the <broadcast-ind> can be:

a) set to "true" indicates that the MCVideo client is initiating a broadcast group call; or

b) set to "false" indicates that the MCVideo client is initiating a non-broadcast group call;

12) the <mc-org> can be:

a) set to the MCVideo user's Mission Critical Organization in an emergency alert sent by the MCVideo server to terminating MCVideo clients;

13) the <transmission-state> can be:

a) set to "transmit-idle", if the transmission is idle in a non-controlling MCVideo function; or

b) set to "transmit-taken" if the transmission state in a non-controlling MCVideo function is taken;

14) the <associated-group-id>:

a) 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;

15) the <originated-by>:

a) can be included, set to the MCVideo ID of the originating user of an MCVideo emergency alert when being cancelled by another authorised MCVideo user;

16) the <MKFC-GKTPs>:

a) contains a group key transport payload carrying one or more MKFC(s) and MKFC-ID(s) as described in3GPP TS 24.481 [24] clause 7.4, to be used for protection of multicast transmission control signalling when the UE operates on the network;

17) the <mcvideo-client-id>:

a) can be included, set to the MCVideo client ID of the MCVideo client that originated a SIP INVITE request, SIP REFER request or SIP MESSAGE request.

18) the <alert-ind-rcvd>

a) can be set to true and included in a SIP MESSAGE to indicate that the emergency alert or cancellation was received successfully; and

19) the <anyExt> can be included with the following elements not declared in the XML schema:

a) a <release-reason> of type "xs:string":

i) set to a value of "authentication of the MIKEY-SAKE I\_MESSAGE failed" by a MCVideo client when the signature of the cannot be verified;

b) a <request-type> of type "xs:string":

i) set to a value of "group-selection-change-request" when a client initiates a group selection change request;

c) a <response-type> of type "xs:string":

i) set to a value of "group-selection-change-response" when a client responds to a group selection change request;

d) a <selected-group-change-outcome> of type "xs:string":

i) set to a value of "success" when a client reports that it has successfully changed its selected group as requested by a received group selection change request; or

ii) set to a value of "fail" when a client reports that it has failed to change its selected group as requested by a received group selection change request; and

e) an<affiliation-required> of type "xs:Boolean":

i) set to a value of "true" when received by a client in a group-selection-change-request indicates that the client needs to affiliate to the specified group.

Absence of the <emergency-ind>, <alert-ind> and <imminentperil-ind> in a SIP INVITE request indicates that the MCVideo client is initiating a non-emergency private call or non-emergency group call.

Absence of the <broadcast-ind> in a SIP INVITE request indicates that the MCVideo client is initiating a non-broadcast group call.

The recipient of the XML ignores any unknown element and any unknown attribute.

**\* \* \* \* \* END CHANGES \* \* \* \* \***