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

**Electronic meeting, 19-27 August 2021 (was C1-214132)**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.281** | **CR** | **0126** | **rev** | **1** | **Current version:** | **16.5.0** |  |
|  | | | | | | | | |
| *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:*** | MCVideo service binding – R16 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | FirstNet, Samsung | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | MCProtoc16 | | | | |  | ***Date:*** | | | 19 August 2021 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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 can be 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:*** | | The text of step 9) in subclause 7.3.3 can be improved and aligned with similar text in TS 24.282 and TS 24.379.  Subclause 7.3.3 step 3) a) has a warning code of "qqq" that should be "166".  To distinguish separate bindings, a unique value, such as the client ID, needs to be added to the registration binding.  The <multiple-devices-ind> element is unnecessarily declared to be of "contentType" insread of just "boolean".  Added the SIP REGISTER and SIP PUBLISH requests to the list of SIP messages that use mcvideo-client-id.  All <anyExt> elements need to be declared in the XML schema to ensure that RAN5 and other organizations have exact format specifications for developing testing, etc. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The text of step 9) in subclause 7.3.3 is improved and aligned with similar text in TS 24.282 and TS 24.379.  Subclause 7.3.3 step 3) a) warning code "qqq" is changed to "166".  The <multiple-devices-ind> element is properly declared to be a boolean.  All <anyExt> elements are declared in the XML schema to ensure that RAN5 and other organizations have exact format specifications for developing testing, etc. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Text related to service binding will not be aligned across the MCVideo, MCData and MCPTT services. <anyExt> elements may not be properly formatted in all implementations. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.4.2, 7.3.2, 7.3.3, F.1.2, 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 ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Rev 1:   * Added the mcptt-client-id to the registration binding. * Removed the ' minoccurs="0" ' string from the <mcptt-client-id> element in the schema, since it must be included for registration to succeed. * Added warning text for warning code 166 in subclause 4.4.2 to maintain forward compatibility with the Rel-17 existing warning code. * Added the SIP REGISTER and SIP PUBLISH requests to the list of SIP messages that use mcvideo-client-id. | | | | | | | | |

**\* \* \* \* \* FIRST CHANGE \* \* \* \* \***

### 4.4.2 Warning texts

The text string included in a Warning header field consists of an explanatory text preceded by a 3-digit text code, according to the following format in Table 4.4.2-1.

Table 4.4.2-1 ABNF for the Warning text

warn-text =/ DQUOTE mcvideo-warn-code SP mcvideo-warn-text DQUOTE

mcvideo-warn-code = DIGIT DIGIT DIGIT

mcvideo-warn-text = \*( qdtext | quoted-pair )

Table 4.4.2-2 defines the warning texts that are defined for the Warning header field when a Warning header field is included in a response to a SIP INVITE request as specified in clause 4.4.1.

Table 4.4.2-2: Warning texts defined for the Warning header field

|  |  |  |
| --- | --- | --- |
| Code | Explanatory text | Description |
| 100 | function not allowed due to <detailed reason> | The function is not allowed to this user.  The <detailed reason> will be either "group definition", "access policy", "local policy", or "user authorisation", or can be a free text string. |
| 101 | service authorisation failed | The service authorisation of the MCVideo ID against the IMPU failed at the MCVideo server. |
| 102 | too many simultaneous affiliations | The MCVideo user already has N2 maximum number of simultaneous affiliations. |
| 103 | maximum simultaneous MCVideo group calls reached | The number of maximum simultaneous MCVideo group calls supported for the MCVideo user has been exceeded. |
| 104 | isfocus not assigned | A controlling MCVideo function has not been assigned to the MCVideo session. |
| 105 | subscription not allowed in a broadcast group call | Subscription to the conference event package rejected during a group call initiated as a broadcast group call. |
| 106 | user not authorised to join chat group | The MCVideo user is not authorised to join this chat group. |
| 107 | user not authorised to make private calls | The MCVideo user is not authorised to make private calls. |
| 108 | user not authorised to make chat group calls | The MCVideo user is not authorised to make chat group calls. |
| 109 | user not authorised to make prearranged group calls | The MCVideo user is not authorised to make group calls to a prearranged group. |
| 110 | user declined the call invitation | The MCVideo user declined to accept the call. |
| 111 | group call proceeded without all required group members | The required members of the group did not respond within the acknowledged call time, but the call still went ahead. |
| 112 | group call abandoned due to required group members not part of the group session | The group call was abandoned, as the required members of the group did not respond within the acknowledged call time. |
| 113 | group document does not exist | The group document requested from the group management server does not exist. |
| 114 | unable to retrieve group document | The group document exists on the group management server but the MCVideo server was unable to retrieve it. |
| 115 | group is disabled | The group has the <disabled> element set to "true" in the group management server. |
| 116 | user is not part of the MCVideo group | The group exists on the group management server but the requesting user is not part of this group. |
| 117 | the group identity indicated in the request is a prearranged group | The group id that is indicated in the request is for a prearranged group, but did not match the request from the MCVideo user. |
| 118 | the group identity indicated in the request is a chat group | The group id that is indicated in the request is for a chat group, but did not match the request from the MCVideo user, |
| 119 | user is not authorised to initiate the group call | The MCVideo user identified by the MCVideo ID is not authorised to initiate the group call. |
| 120 | user is not affiliated to this group | The MCVideo user is not affiliated to the group. |
| 121 | user is not authorised to join the group call | The MCVideo user identified by the MCVideo ID is not authorised to join the group call. |
| 122 | too many participants | The group call has reached its maximum number of participants. |
| 123 | MCVideo session already exists | Inform the MCVideo user that the group call is currently ongoing. |
| 124 | maximum number of private calls reached | The maximum number of private calls allowed at the MCVideo server for the MCVideo user has been reached. |
| 125 | user not authorised to make private call with automatic commencement | The MCVideo user is not authorised to make a private call with automatic commencement. |
| 126 | user not authorised to make private call with manual commencement | The MCVideo user is not authorised to make a private call with manual commencement. |
| 127 | user not authorised to be called in private call | The called MCVideo user is not allowed to be part of a private call. |
| 128 | isfocus already assigned | The MCVideo server owning an MCVideo group received a SIP INVITE request destined to the MCVideo group from another MCVideo server already assigned as the controlling MCVideo function and the MCVideo server owning the MCVideo group does not support mutual aid or supports trusted mutual aid but does not authorise trusted mutual aid. |
| 137 | the indicated group call does not exist | The participating MCVideo function cannot find an ongoing group session associated with the received MCVideo session identity. |
| 138 | subscription of conference events not allowed | The controlling MCVideo function could not allow the MCVideo user to subscribe to the conference event package. |
| 139 | integrity protection check failed | The integrity protection of an XML MIME body failed. |
| 140 | unable to decrypt XML content | The XML content cannot be decrypted. |
| 141 | user unknown to the participating function | The participating function is unable to associate the public user identity with an MCVideo ID. |
| 142 | unable to determine the controlling function | The participating function is unable to determine the controlling function for the group call or private call. |
| 143 | not authorised to force auto answer | The calling user is not authorised to force auto answer on the called user. |
| 144 | user not authorised to call this particular user | The calling user is not authorised to call this particular called user. |
| 145 | unable to determine called party | The participating function was unable to determine the called party from the information received in the SIP request. |
| 146 | T-PF unable to determine the service settings for the called user | The service settings have not been uploaded by the terminating client to the terminating participating server. |
| 147 | user is authorized to initiate a temporary group call | The non-controlling MCVideo function has authorized a request from the controlling MCVideo function to authorize a user to initiate an temporary group session. |
| 148 | MCVideo group is regrouped | The MCVideo group hosted by a non-controlling MCVideo function is part of a temporary group session as the result of the group regroup function. |
| 149 | SIP-INFO request pending | The MCVideo client needs to wait for a SIP-INFO request with specific content, before taking further action. |
| 150 | invalid combinations of data received in MIME body | The MCVideo client included invalid combinations of data in the SIP request. |
| 154 | user not authorised to make ambient viewing call | The MCVideo user is not authorised to make an ambient viewing call. |
| 166 | maximum number of service authorizations reached | The number of maximum simultaneous service authorizations for the MCVideo user has been reached. |

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

### 7.3.2 SIP REGISTER request for service authorisation

The MCVideo server shall support obtaining service authorization specific information from the SIP REGISTER request sent from the MCVideo client and included in the body of a third-party SIP REGISTER request.

NOTE 1: 3GPP TS 24.229 [11] defines how based on initial filter criteria the SIP REGISTER request sent from the UE is included in the body of the third-party SIP REGISTER request.

Upon receiving a third party SIP REGISTER request with a message/sip MIME body containing the SIP REGISTER request sent from the MCVideo client containing an application/vnd.3gpp.mcvideo-info+xml MIME body with an <mcvideo-access-token> element and an <mcvideo-client-id> element within a message/sip MIME body of the SIP REGISTER request sent from the MCVideo client, the MCVideo server:

1) shall identify the IMS public user identity from the third-party SIP REGISTER request;

2) shall identify the MCVideo ID from the SIP REGISTER request sent from the MCVideo client and included in the message/sip MIME body of the third-party SIP REGISTER request by following the procedures in clause 7.3.1A;

2a) shall check if the number of maximum simultaneous authorizations supported for the MCVideo user as specified in the <max-simultaneous-authorizations> element of the <anyExt> element contained in the <OnNetwork> element of the MCVideo service configuration document (see the service configuration document in 3GPP TS 24.484 [50]) has been reached. If reached, the MCVideo server shall send a SIP 486 (Busy Here) response towards the MCVideo client with the warning text set to: "164 maximum number of service authorizations reached" in a Warning header field as specified in clause 4.4, and shall not continue with the rest of the steps in this subclause;

3) shall perform service authorization for the identified MCVideo ID as described in 3GPP TS 33.180 [8];

4) if service authorization was successful, shall bind the MCVideo ID and the MCVideo client ID to the IMS public user identity;

4a) if service authorization was successful and if, the service authorization request was from an MCVideo user who is previously MCVideo service authorized on another MCVideo client (as determined by a comparison of the received MCVideo client ID with the MCVideo client ID of existing bindings), keep the current bindings and create a new binding between the MCVideo ID, MCVideo client ID and the IMS public user identity;

NOTE 2: The MCVideo server will store the binding MCVideo ID, MCVideo client ID, IMS public user identity and an identifier addressing the MCVideo server in an external database.

5) if a Resource-Share header field with the value "supported" is contained in the "message/sip" MIME body of the third-party REGISTER request, shall bind the MCVideo ID and the MCVideo client ID to the identity of the MCVideo UE contained in the "+g.3gpp.registration-token" header field parameter in the Contact header field of the incoming third-party REGISTER request; and

6) if more than one binding exists for the MCVideo ID, shall include in the SIP 200 (OK) response an application/vnd.3gpp.mcvideo-info+xml MIME body as specified in annex F.1 with an <multiple-devices-ind> element set to a value of "true".

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

### 7.3.3 SIP PUBLISH request for service authorisation and service settings

The MCVideo server shall support obtaining service authorization specific information from a SIP PUBLISH request for MCVideo server settings.

Upon receiving a SIP PUBLISH request containing:

1) an Event header field set to the "poc-settings" value;

2) an application/poc-settings+xml MIME body; and

3) an application/vnd.3gpp.mcvideo-info+xml MIME body containing an <mcvideo-access-token> element and an <mcvideo-client-id> element;

the MCVideo server:

1) shall identify the IMS public user identity from the P-Asserted-Identity header field;

2) shall perform the procedures in clause 7.3.1A;

3) if the procedures in clause 7.3.1A were not successful shall send a SIP 403 (Forbidden) response towards the MCVideo client with the warning text set to: "140 unable to decrypt XML content " in a Warning header field as specified in clause 4.4, and not continue with the rest of the steps in this clause;

3a) shall check if the number of maximum simultaneous authorizations supported for the MCVideo user as specified in the <max-simultaneous-authorizations> element of the <anyExt> element contained in the <OnNetwork> element of the MCVideo service configuration document (see the service configuration document in 3GPP TS 24.484 [50]) has been reached. If reached, the MCVideo server shall send a SIP 486 (Busy Here) response towards the MCVideo client with the warning text set to: "166 maximum number of service authorizations reached" in a Warning header field as specified in subclause 4.4, and shall not continue with the rest of the steps in this subclause;

4) shall perform service authorization for the identified MCVideo ID as described in 3GPP TS 33.180 [8];

5) if service authorization was successful:

a) shall bind the MCVideo ID and MCVideo client ID to the IMS public user identity;

b) if the service authorization request was from an MCVideo user who is previously MCVideo service authorized on another MCVideo client (as determined by a comparison of the received MCVideo client ID with the MCVideo client ID of existing bindings), keep the current bindings and create a new binding between the MCVideo ID, MCVideo client ID and the IMS public user identity; and

c) if a Resource-Share header field with the value "supported" was included in the "message/sip" MIME body of the third-party REGISTER request, shall bind the MCVideo ID to the identity of the MCVideo UE contained in the "+g.3gpp.registration-token" header field parameter in the Contact header field of the third-party REGISTER request that contained this IMS public user identity;

NOTE 1: The MCVideo server will store the binding MCVideo ID, MCVideo client ID, IMS public user identity and an identifier addressing the MCVideo server in an external database.

6) if service authorization was not successful, shall send a SIP 403 (Forbidden) response towards the MCVideo client with the warning text set to: "101 service authorisation failed" in a Warning header field as specified in clause 4.4, and not continue with the rest of the steps in this clause;

7) shall process the SIP PUBLISH request according to rules and procedures of IETF RFC 3903 [12] and if processing of the SIP request was not successful, do not continue with the rest of the steps;

8) shall cache the received MCVideo service settings until the MCVideo service settings expiration timer expires;

9) shall send a SIP 200 (OK) response according to 3GPP TS 24.229 [11] with:

a) if more than one binding exists for the MCVideo ID, an application/vnd.3gpp.mcvideo-info+xml MIME body as specified in annex F.1 with an <multiple-devices-ind> element set to the value "true";

10) shall use the Answer-Mode Indication setting in the <am-settings> element of the poc-settings event package as the current Answer-Mode Indication of the MCVideo client.

11) shall download the MCVideo user profile from the MCVideo user database as defined in 3GPP TS 29.283 [54] if not already stored at the MCVideo server and use the <selected-user-profile-index> element of the poc-settings event package if included to identify the active MCVideo user profile for the MCVideo client;

NOTE 2: If the <selected-user-profile-index> element of the poc-settings event package is included then only that MCVideo user profile is needed to be downloaded from the MCVideo user database.

12) if there is no <selected-user-profile-index> element included in the poc-settings event package then if multiple MCVideo user profiles are stored at the MCVideo server or downloaded for the MCVideo user from the MCVideo user database, shall determine the pre-selected MCVideo user profile to be used as the active MCVideo user profile by identifying the MCVideo user profile (see the MCVideo user profile document in 3GPP TS 24.484 [25]) in the collection of MCVideo user profiles that contains a <Pre-selected-indication> element; and

NOTE 3: If only one MCVideo user profile is stored at the MCVideo server or only one MCVideo user profile is downloaded from the MCVideo user database, then by default this MCVideo user profile is the pre-selected MCVideo user profile.

13) if an <ImplicitAffiliations> element is contained in the <OnNetwork> element of the MCVideo user profile document with one or more <entry> elements containing an MCVideo group ID (see the MCVideo user profile document in 3GPP TS 24.484 [25]) for the served MCVideo ID, shall perform implicit affiliation as specified in clause 8.2.2.2.15.

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

## F.1.2 XML schema

<?xml version="1.0" encoding="UTF-8"?>

<xs:schema

xmlns:xs="http://www.w3.org/2001/XMLSchema"

targetNamespace="urn:3gpp:ns:mcvideoInfo:1.0"

xmlns:mcvideoinfo="urn:3gpp:ns:mcvideoInfo:1.0"

elementFormDefault="qualified"

attributeFormDefault="unqualified"

xmlns:xenc="[http://www.w3.org/2001/04/xmlenc#](http://www.w3.org/2001/04/xmlenc)"

xmlns:mvgktp="urn:3gpp:ns:mcvideoGKTP:1.0">

<xs:import namespace="http://www.w3.org/2001/04/xmlenc#"/>

<xs:import namespace="urn:3gpp:ns:mcvideoGKTP:1.0"/>

<!-- root XML element -->

<xs:element name="mcvideoinfo" type="mcvideoinfo:mcvideoinfo-Type" id="info"/>

<xs:complexType name="mcvideoinfo-Type">

<xs:sequence>

<xs:element name="mcvideo-Params" type="mcvideoinfo:mcvideo-ParamsType"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoinfo:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="mcvideo-ParamsType">

<xs:sequence>

<xs:element name="mcvideo-access-token" type="mcvideoinfo:contentType" minOccurs="0"/>

<xs:element name="session-type" type="xs:string" minOccurs="0"/>

<xs:element name="mcvideo-request-uri" type="mcvideoinfo:contentType" minOccurs="0"/>

<xs:element name="mcvideo-calling-user-id" type="mcvideoinfo:contentType" minOccurs="0"/>

<xs:element name="mcvideo-called-party-id" type="mcvideoinfo:contentType" minOccurs="0"/>

<xs:element name="mcvideo-calling-group-id" type="mcvideoinfo:contentType" minOccurs="0"/>

<xs:element name="required" type="mcvideoinfo:contentType" minOccurs="0"/>

<xs:element name="emergency-ind" type="mcvideoinfo:contentType" minOccurs="0"/>

<xs:element name="alert-ind" type="mcvideoinfo:contentType" minOccurs="0"/>

<xs:element name="imminentperil-ind" type="mcvideoinfo:contentType" minOccurs="0"/>

<xs:element name="broadcast-ind" type="xs:boolean" minOccurs="0"/>

<xs:element name="mc-org" type="xs:string" minOccurs="0"/>

<xs:element name="associated-group-id" type="xs:string" minOccurs="0"/>

<xs:element name="originated-by" type="mcvideoinfo:contentType" minOccurs="0"/>

<xs:element name="MKFC-GKTPs" type="mvgktp:singleTypeGKTPsType" minOccurs="0"/>

<xs:element name="mcvideo-client-id" type="mcvideoinfo:contentType"/>

<xs:element name="alert-ind-rcvd" type="mcvideoinfo:contentType" minOccurs="0"/>

<xs:element name="multiple-devices-ind" type="xs:boolean" minOccurs="0"/>

<xs:element name="video-pull-url" type="mcvideoinfo:contentType" minOccurs="0"/>

<xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

<xs:element name="anyExt" type="mcvideoinfo:anyExtType" minOccurs="0"/>

</xs:sequence>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<!-- anyExt elements for MCVideo-Params-->

<xs:element name="release-reason" type="mcvideoinfo:releaseReasonType"/>

<xs:simpleType name="releaseReasonType">

<xs:restriction base="xs:string">

<xs:enumeration value="private-call-expiry"/>

<xs:enumeration value="administrator-action"/>

<xs:enumeration value="not selected for call"/>

<xs:enumeration value="call-request-for-viewed-to-client"/>

<xs:enumeration value="call-request-initiated-by-viewed-to-client"/>

<xs:enumeration value="authentication of the MIKEY-SAKE I\_MESSAGE failed"/>

</xs:restriction>

</xs:simpleType>

<xs:element name="request-type" type="mcvideoinfo:requestTypeType"/>

<xs:simpleType name="requestTypeType">

<xs:restriction base="xs:string">

<xs:enumeration value="group-selection-change-request"/>

</xs:restriction>

</xs:simpleType>

<xs:element name="response-type" type="mcvideoinfo:responseTypeType"/>

<xs:simpleType name="responseTypeType">

<xs:restriction base="xs:string">

<xs:enumeration value="group-selection-change-response"/>

</xs:restriction>

</xs:simpleType>

<xs:element name="selected-group-change-outcome" type="mcvideoinfo:selectedGroupChangeOutcomeType"/>

<xs:simpleType name="selectedGroupChangeOutcomeType">

<xs:restriction base="xs:string">

<xs:enumeration value="success"/>

<xs:enumeration value="fail"/>

</xs:restriction>

</xs:simpleType>

<xs:element name="affiliation-required" type="xs:boolean"/>

<xs:element name="ambient-viewing-type" type="mcvideoinfo:ambientViewingType"/>

<xs:simpleType name="ambientViewingType">

<xs:restriction base="xs:string">

<xs:enumeration value="remote-init"/>

<xs:enumeration value="local-init"/>

</xs:restriction>

</xs:simpleType>

<xs:element name="video-push-url" type="xs:anyURI"/>

<xs:simpleType name="protectionType">

<xs:restriction base="xs:string">

<xs:enumeration value="Normal"/>

<xs:enumeration value="Encrypted"/>

</xs:restriction>

</xs:simpleType>

<xs:complexType name="contentType">

<xs:choice>

<xs:element name="mcvideoURI" type="xs:anyURI"/>

<xs:element name="mcvideoString" type="xs:string"/>

<xs:element name="mcvideoBoolean" type="xs:boolean"/>

<xs:any namespace="##other" processContents="lax"/>

<xs:element name="anyExt" type="mcvideoinfo:anyExtType" minOccurs="0"/>

</xs:choice>

<xs:attribute name="type" type="mcvideoinfo:protectionType"/>

<xs:anyAttribute namespace="##any" processContents="lax"/>

</xs:complexType>

<xs:complexType name="anyExtType">

<xs:sequence>

<xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>

</xs:sequence>

</xs:complexType>

</xs:schema>

**\* \* \* \* \* 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> elements 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> element or <mcvideo-client-id> element, then the <mcvideoString> element is included; and

d) if the element is the <emergency-ind> element, the <alert-ind> element or the <imminentperil-ind> element 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> element can be included with the access token received during authentication procedure as described in 3GPP TS 24.482 [52];

2) the <session-type> element can be included and set to:

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

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

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

d) "ambient-viewing" to indicate the MCVideo client wants to make an ambient viewing call;

e) "pull-from-server" to indicate the MCVideo client wants to pull video file from MCVideo server;

f) "pull-from-user" to indicate the MCVideo client wants to to pull video media from another MCVideo client;

g) "push-to-server" to indicate the MCVideo client wants to push video media to MCVideo server, save as a file;

h) "one-to-one video push" to indicate the MCVideo client wants to push video media to another MCVideo client; or

i) "one-to-server video push" to indicate the MCVideo client wants to push video media to a MCVideogroup;

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

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

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

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

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

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

7) the <required> element 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 [31];

8) the <emergency-ind> element can be set to:

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

b) "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> element can be set to:

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

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

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

a) the <imminentperil-ind> element 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> element can be set to:

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

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

12) the <mc-org> element 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) Void;

14) the <associated-group-id> element:

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> element:

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> element:

a) contains a group key transport payload carrying one or more MKFC(s) and MKFC-ID(s) as described in3GPP TS 24.481 [31] clause 7.4, to be used for protection of multicast transmission control signalling when the UE operates on the network;

NOTE 3: A GMS (Group Management Server) compliant to Release 14 of the present document does not send a group key transport payload carrying MKFC and MKFC-ID. A GMC (Group Management Client) can receive MKFC and MKFC-ID from a GMS compliant only to Release 13 of the present document.

17) the <mcvideo-client-id> element:

a) can be included, set to the MCVideo client ID of the MCVideo client that originated a SIP INVITE request, SIP REFER request, SIP REGISTER request, SIP PUBLISH 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;

18a) the <multiple-devices-ind> element:

a) can be set to true and included in a SIP 200 (OK) response to indicate that more than one binding exists for the MCVideo ID; and

18b) the <video-pull-url> element:

a) can be set to the URL of the video file located in the MCVideo server; and

19) the <anyExt> can be included with the following elements:

a) a <release-reason> element set to:

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

ii) "private-call-expiry" when the ambient viewing call is release due to the expiry of the private call timer;

iii) "administrator-action" when the ambient viewing call is released by an MCVideo administrator;

iv) "call-request-for-viewed-to-client" when there is a call request targeted to the viewed-to client; or

v) "call-request-initiated-by-viewed-to-client" when there is a call request initiated by the viewed-to client;

b) a <request-type> element set to:

i) "group-selection-change-request" when a client initiates a group selection change request;

c) a <response-type> element set to:

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

d) a <selected-group-change-outcome> element set to:

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

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

e) an<affiliation-required> element set to:

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

f) an <ambient-viewing-type> element set to:

i) "remote-init" when the viewing MCVideo user of an ambient viewing call initiates the call; or

ii) "local-init" when the viewed-to MCVideo user of an ambient viewing call initiates the call; and

g) an <video-push-url> element:

i) set to the URL of the video file located in the MCVideo server.

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 \* \* \* \* \***