**3GPP TSG-SA WG6 Meeting #62 S6-244456**

**Hyderabad, India, 14th – 18th October 2024 (revision of S6-244283)**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
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|  | **81** | **CR** | **0236** | **rev** | **1** | **Current version:** |  |  |
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| *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:***  | Resolving the ENs in 23.281 |
|  |  |
| ***Source to WG:*** | Huawei, Hisilicon, Nokia |
| ***Source to TSG:*** | SA6 |
|  |  |
| ***Work item code:*** | enh4MCPTT |  | ***Date:*** | 2024-09-26 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | 8 |
|  | *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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | There are still several Editor’s note in the R18 23.281 to be cleanup. |
|  |  |
| ***Summary of change:*** | Resove the editor’s NOTE per discussion paper S6-244305. |
|  |  |
| ***Consequences if not approved:*** | Editor’s Notes in frozen specifications impact the quality of the TS. |
|  |  |
| ***Clauses affected:*** | 6.2.2.3.8, 7.1.2.3.1.1.4, 7.2.3.4.2, 7.2.3.5.2, 7.2.3.5.3, 7.5.2.4, 7.7.2.8, 7.16.3, 7.19.3.1.3 |
|  |  |
|  | **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:*** |  |

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 1st changes \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

##### 6.2.2.3.8 MC gateway server

The MC gateway server provides support for MCVideo interconnection services with a partner MCVideo system in a different trust domain whilst providing topology hiding. It acts as a proxy for one or more MCVideo servers in the partner MCVideo system without needing to expose the MCVideo servers in the primary MCVideo system outside the trusted domain of the primary MCVideo system. It may be a role of the MCVideo server described in subclause 6.2.2.3.2 of the present document.

The MC gateway server is responsible for relaying call control and floor control signalling messages, and media between MCVideo servers within the MCVideo system and the interconnected MCVideo system.

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7.1.2.3.1.1.4 Late entry pre-arranged group call

Procedures in figure 7.1.2.3.1.1.4-1 are the signalling control plane procedures for the MCVideo server requesting a newly affiliated member or a member coming back from out of coverage to join an ongoing MCVideo group call.

Pre-conditions:

1. MCVideo group is previously defined on the group management server with MCVideo users affiliated to that group. All members of the group belong to the same MC system.

2. It is assumed that MCVideo users on MCVideo client 2 to MCVideo client n are on an ongoing call.

3. Optionally, the MCVideo client 1 may have activated functional alias to be used.

4. The MCVideo server may have subscribed to the MCVideo functional alias controlling server within the MC system for functional alias activation/de-activation updates.



Figure 7.1.2.3.1.1.4-1: Late entry pre-arranged group call

1. MCVideo server determines that MCVideo client 1 which is newly affiliated or coming back from out of coverage has to be invited to join an ongoing group call (late entry).

2. MCVideo server generates group call request including the information such as MCVideo service identifier (possible for the SIP core to route the request to the MCVideo server), MC service group ID of the group invited to join, offer one or more media types and sends towards the MCVideo client 1 via SIP core.

3. MCVideo user at MCVideo client 1 is notified about the incoming group call.

4. Upon MCVideo user at MCVideo client 1 accepting the incoming group call request, MCVideo client 1 sends the group call response including the selected media types to the MCVideo server through the signalling path. If the incoming group call request is rejected by the MCVideo client 1, the MCVideo server should not resend the group call request

5. MCVideo client 1 is successfully added to the ongoing group call and MCVideo users at MCVideo client 1 to MCVideo client n may be notified about the MCVIDEO client 1 joining the group call.

6. A notification with the information of media transmissions in the group call is sent to MCVideo client1.

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##### 7.2.3.4.2 Procedure

Figure 7.2.3.4.2-1 describes procedures to establish an off-network automatic commencement private communication between MCVideo user A MCVideo user B.

Pre-conditions:

1. MCVideo user A has initiated automatic commencement private communication with MCVideo user B.

2. MCVideo user B has indicated MCVideo client B as the designated MCVideo client for MCVideo private communications.

3. MCVideo client A and MCVideo client B are members of the same ProSe Discovery group and are ProSe 1:1 direct communication capable.

4. MCVideo client A has discovered MCVideo client B in proximity, associated with MCVideo user B, using ProSe Discovery procedures.

NOTE: How MCVideo client A determines that MCVideo client B is the designated MCVideo client of MCVideo user B for private communications is implementation specific.



Figure 7.2.3.4.2-1: Off-network automatic commencement private communication

1. The MCVideo client A sends the Private communication request towards MCVideo client associated with MCVideo user B. The Private communication request contains an indication for automatic commencement and the SDP offer.

2. On receiving a Private communication request with an indication for automatic commencement, the MCVideo client checks if it is the designated MCVideo client for off-network MCVideo private communications.

3a. The designated MCVideo client B automatically accepts the Private communication request, and sends a Private communication answer response, indicating the successful receipt of communication request to the MCVideo client A. The Private communication answer response contains the SDP answer.

3b. The designated MCVideo client B notifies the MCVideo user B about the incoming Private communication request.

NOTE 1: Step 3a and step 3b can occur in any order.

4. The MCVideo client A and the MCVideo client B establish the media plane for Private Communication.

NOTE 2: If a MCVideo client fails to establish the communication, the MCVideo client should send a Private communication failed response indicating the failure reason to the appropriate MCVideo client.

5. MCVideo media is transmitted from the MCVideo client A to the MCVideo client B and is presented to the MCVideo user B.

NOTE 3: If a Private communication failed response is received by a MCVideo client, before or after establishing the media session, if already established, the session is terminated and the MCVideo user is notified about the failure and its reason, if any.

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##### 7.2.3.5.2 Procedure – Communication accepted

Figure 7.2.3.5.2-1 describes procedures to establish an off-network manual commencement private communication between MCVideo user A MCVideo user B, which is accepted by the MCVideo user B.

Pre-conditions:

1. MCVideo user A has initiated manual commencement private communication with MCVideo user B.

2. MCVideo user B has indicated MCVideo client B as the designated MCVideo client for MCVideo private communications, if the MCVideo user B has signed on to the MCVideo service with multiple MCVideo clients.

3. MCVideo client A and MCVideo client B are members of the same ProSe Discovery group and are ProSe 1:1 direct communication capable.

4. MCVideo client A has discovered MCVideo clients B in proximity, associated with MCVideo user B, using ProSe Discovery procedures.

NOTE: How MCVideo client A determines that MCVideo client B is the designated MCVideo client of MCVideo user B for private communications is implementation specific.



Figure 7.2.3.5.2-1: Off-network manual commencement private communication – Accepted

1. The MCVideo client A sends the Private communication request towards MCVideo client associated with MCVideo user B. The Private communication request contains an indication for manual commencement and the SDP offer.

2. On receiving a Private communication request, the MCVideo client checks if it is the designated MCVideo client for off-network MCVideo private communications.

3a. The designated MCVideo client B presents the incoming Private communication request to the MCVideo user B.

3b. The MCVideo client B sends back a Private communication ringing response to the MCVideo client A.

NOTE 1: Step 3a and step 3b can occur in any order.

4. The MCVideo client A notifies the ringing status to the MCVideo user A.

5. The MCVideo user B accepts the Private communication request.

6. The MCVideo client B sends the Private communication answer response to the MCVideo client A. The Private communication response contains the SDP answer.

7. The MCVideo client A and the MCVideo client B establish the media plane for Private communication.

NOTE 2: If a MCVideo client fails to establish the communication, the MCVideo client should send a Private communication failed response indicating the failure reason to the appropriate MCVideo client.

8. MCVideo media is transmitted from the MCVideo client A to the MCVideo client B and is presented to the MCVideo user B.

NOTE 3: If a Private communication failed response is received by a MCVideo client, before or after establishing the media session, if already established, the session is terminated and the MCVideo user is notified about the failure and its reason, if any.

##### 7.2.3.5.3 Procedure – Communication rejected/ignored

Figure 7.2.3.5.3-1 describes procedures to initiate an off-network manual commencement private communication between MCVideo user A MCVideo user B, which is rejected or ignored by the MCVideo user B.

Pre-conditions:

1. MCVideo user A has initiated manual commencement private communication with MCVideo user B.

2. MCVideo user B has indicated MCVideo client B as the designated MCVideo client for MCVideo Private Communications, if the MCVideo user B has signed on to the MCVideo service with multiple MCVideo clients.

3. MCVideo client A and MCVideo client B are members of the same ProSe Discovery group and are ProSe 1:1 direct communication capable.

4. MCVideo client A has discovered MCVideo clients B in proximity, associated with MCVideo user B, using ProSe Discovery procedures.

NOTE: How MCVideo client A determines that MCVideo client B is the designated MCVideo client of MCVideo user B for private communications is implementation specific.



Figure 7.2.3.5.3-1: Off-network manual commencement private communication – Rejected or Ignored

1. The MCVideo client A sends the private communication request towards MCVideo client associated with MCVideo user B. The private communication request contains an indication for manual commencement and the SDP offer.

2. On receiving a Private communication request, the MCVideo client checks if it is the designated MCVideo client for off-network MCVideo private communications.

3a. The designated MCVideo client B presents the incoming Private communication request to the MCVideo user B.

3b. The MCVideo client B sends back a Private communication ringing response to the MCVideo client A.

NOTE 1: Step 3a and step 3b can occur in any order.

4. The MCVideo client A notifies the ringing status to the MCVideo user A.

5. The MCVideo user B rejects (or ignores) the Private communication request.

NOTE 2: The MCVideo client B determines that the MCVideo user B has ignored the Private communication request, if the MCVideo user B does not respond within a configured time limit.

6. The MCVideo client B sends a Private communication reject response to the MCVideo client A. The Private communication reject response may indicate that the MCVideo user B has ignored the Private communication request.

7. The MCVideo client A notifies the MCVideo user A that the Private communication request was rejected (or ignored).

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#### 7.5.2.4 Retrieve MCVideo capabilities information by the MCVideo client

The procedure for retrieval of MCVideo capabilities information by the MCVideo client is described in figure 7.5.2.4-1.

Pre-conditions:

- The MCVideo server has received MCVideo capabilities information from MCVideo clients and has stored this information;

- The MCVideo user is authorized to access the MCVideo capabilities information from the MCVideo server.

- The requesting MCVideo user is within the same MCVideo system as the requested MCVideo users and the requested MCVideo groups.



Figure 7.5.2.4-1: Retrieve MCVideo capabilities information by the MCVideo client

1. The MCVideo client requests the MCVideo capabilities information by specifying some criteria (e.g. parameters, MCVideo ID).

2. The MCVideo server checks whether the user of the MCVideo client is authorized to retrieve the requested MCVideo capabilities information.

3. If authorized, the MCVideo server provides the requested MCVideo capabilities information to the MCVideo client.

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#### 7.7.2.8 Transmission override (revoke self)

This subclause is applicable in the single arbitrator approach.

NOTE: Transmission override in the self arbitration approach is implementation specific.

Figure 7.7.2.8-1 describes procedures for transmission participants when an MCVideo client authorized to override, requests for transmission permission.

The MCVideo client has detected presence of a transmission arbitrator e.g., by receiving responses to transmission arbitration control message. The MCVideo client sends a transmission request and waits for a response.

Pre-conditions:

1. An off-network group communication has been established.

2. Maximum simultaneous transmissions limit has been reached.



Figure 7.7.2.8-1: Transmission override

1. MCVideo client 2 sends a transmission request message to the MCVideo group.

2. As the configured limit of maximum simultaneous transmissions is already reached, MCVideo client 1, being a transmission arbitrator, checks the override policy.

3. If MCVideo client 2 is authorized to override (based on e.g., transmission priority), MCVideo client 1 may send a transmission revoked message to the MCVideo group. Transmission revoked message indicates the MCVideo client 1, the current arbitrator, whose permission is revoked.

4. MCVideo client 1 stops transmission of video and MCVideo user at MCVideo client 1 may be notified that the transmission permission has been revoked.

5. MCVideo client 1 sends a transmission granted message to the MCVideo group. The transmission granted message indicates MCVideo client 2 as the intended recipient and MCVideo client 2 as the subsequent transmission arbitrator.

6a. MCVideo client 2 sends a transmission arbitration taken message to the MCVideo group.

6b. MCVideo user at MCVideo client 2 may be notified that the video can now be transmitted.

NOTE: Step 6a and step 6b can occur in any order.

7. MCVideo client 1, upon receiving the transmission arbitration taken message releases transmission arbitration.

8. MCVideo client 2 transmits video to the MCVideo group.

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### 7.16.3 MCVideo client query procedure

Figure 7.16.3-1 describes the procedure for MCVideo client query in on-network. This procedure is applicable to query the MCVideo clients belonging to the same MCVideo system as the requesting MCVideo user.

Pre-conditions:

1. The video capabilities have been collected at MCVideo server during the update MCVideo capabilities information at the MCVideo server procedure in subclause 7.5.2.3.



Figure 7.16.3-1: MCVideo client query procedure

1. MCVideo client A sends a MCVideo client query request to the MCVideo server with certain search criteria.

2. MCVideo server checks whether the MCVideo user of MCVideo client A has the authorization to perform MCVideo client query. If success, MCVideo server retrieves the MCVideo clients that fulfils the search criteria. If MCVideo group ID list is included in the MCVideo client query request, MCVideo server retrieves the affiliated group members that fulfil the query criteria in each affiliated MCVideo group in the received MCVideo group ID list.

3. MCVideo server returns the MCVideo client query response to the MCVideo client A with the retrieved MCVideo clients.

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##### 7.19.3.1.3 Ad hoc group call setup with MCVideo server determining the participants lists

Figure 7.19.3.1.3-1 below illustrates the ad hoc group call setup procedure initiated by the MCVideo user and MCVideo client 1 wherein the list of participants is determined by the MCVideo server based on the citeria received from the MCVideo client.

Pre-conditions:

1. The MCVideo user at MCVideo client 1 is authorized to initate ad hoc group call.

2. The MCVideo user at MCVideo client 1 wants to invite MCVideo users who are satisying certain criteria for the ad hoc group call.



Figure 7.19.3.1.3-1: Ad hoc group call participants determined by MCVideo server

1. User at MCVideo client 1 would like to initiate an ad hoc group call in-order to invite the participants satisfying specific criteria. The MCVideo client 1 initiates the ad hoc group call by sending the ad hoc group call request containing the details of the criteria to be applied by the MCVideo server for determining the participants list. If end-to-end encryption is supported, the Encryption supported information element shall be set to true and pre-configured MCVideo group whose configuration is to be applied is included. An SDP offer containing the MCVideo client media parameters is included. If there is a transmission request to transmit, then the ad hoc group call request contains an indication of an implicit transmit media request. If the MCVideo user of MCVideo client 1 has selected a functional alias, then the ad hoc group call request contains that functional alias. If the ad hoc group call request contains an implicit transmit media request it may also include location information.

If the MCVideo user at MCVideo client 1 initiates an MCVideo emergency ad hoc group call or the MCVideo emergency state is already set for the MCVideo client 1 (due to a previously triggered MCVideo emergency alert):

i. the MCVideo ad hoc group call request shall contain an emergency indicator;

ii. if the MCVideo emergency state is not set already, MCVideo client 1 sets its MCVideo emergency state. The MCVideo emergency state of MCVideo client 1 is retained until explicitly cancelled by the user of MCVideo client 1.

2. The MCVideo server accepts the ad hoc group call request if the ad hoc group call is supported and authorized. Otherwise reject the ad hoc group call request and do not continue with the rest of the steps.

 If functional alias is present, the MCVideo server checks whether the provided functional alias is allowed to be used and has been activated for the user.

 If location information was included in the ad hoc group call request, the MCVideo server checks the privacy policy of the MCVideo user to decide if the location information of MCVideo client 1 can be provided to other users on the call (refer to Annex A.3 "Authorisation to provide location information to other MCVideo users on a call when talking").

 If an emergency indicator is present in the received MCVideo ad hoc group call request, the MCVideo ad hoc group is considered to be in the in-progress emergency state until this ad hoc group call is terminated; and

 If an imminent peril indicator is present in the received MCVideo ad hoc group call request, the MCVideo ad hoc group is considered to be in the in-progress imminent peril state until this ad hoc group call is terminated.

If the information received in the request in step 1 does not contain an ad hoc group ID from an ad hoc group emergency alert, the MCVideo server forms the ad hoc group by using received information, and determines the preconfigured group to be used for the configuration of the ad hoc group. The MCVideo server assigns a MCVideo group ID for the newly formed ad hoc group. Further, the ad hoc group participants are included to ad hoc group once determined as specified in the step 4.

3. The MCVideo server shall send the ad hoc group call request return message to MCVideo client 1 containing the below:

 i. The MCVideo ad hoc group ID, either generated by the MCVideo server, if not included in the ad hoc group call request of step 1, or if the provided MCVideo ad hoc group ID is not accepted by the MCVideo server, or provided by the MCVideo client 1 if the ad hoc group ID is from an ad hoc group emergency alert;

 ii. The group ID of the pre-configured group to be used for the ad hoc group communication (only included when the ad hoc group data session is authorized); and

 iii. Result of whether the ad hoc group call is authorized or not

 If the ad hoc group call request is not authorized, MCVideo server and client 1 shall not proceed with the rest of the steps.

4. The MCVideo server determines the list of participants to be invited for the ad hoc group call based on the information present in the information element Criteria for determining the participants. This information element could carry either criteria or indicator identifying pre-defined criteria or a combination of both.

NOTE: The content of the Criteria information element, the details of the pre-defined criteria, and the way how their MCVideo server determines the list of participants are left to implementation.

5. The MCVideo server sends the ad hoc group call requests towards the MCVideo clients 2 and 3. While sending the ad hoc group call requests, the MCVideo server shall remove the information elements that are not required to be conveyed to the target MCVideo clients. This request carries the pre-configured group ID whose configuration is to be applied for this ad hoc group call if end-to-end encryption is requested. The MCVideo server considers the ad hoc group call participants as implicitly affiliated to the ad hoc group.

6. The receiving MCVideo clients are notified about the incoming ad hoc group call.

7. The receiving MCVideo clients accept the ad hoc group call requests and send ad hoc group call responses to the MCVideo server. The response may also contain a functional alias of the responding MCVideo user, which is verified (valid and activated for the user) by the MCVideo server.

8. The MCVideo server sends the ad hoc group call response to MCVideo client 1 through the signalling path to inform about successful call establishment.

9. The MCVideo server may notify the initiating MCVideo user of all MCVideo users who acknowledged the ad hoc group call request and joined the ad hoc group call. This notification may be sent to the initiating MCVideo user by the MCVideo server more than once during the call when MCVideo users join or leave the MCVideo ad hoc group call. If the authorized users (not shown in figure) are configured to receive the participants information of ad hoc group call, the MCVideo server provides ad hoc group call notify about all MCVideo users who acknowledged the ad hoc group call request and joined the ad hoc group call, and when MCVideo users join or leave the MCVideo ad hoc group call.

10. MCVideo client 1, MCVideo client 2 and MCVideo client 3 establish media plane and transmission control resources.