**3GPP TSG- Meeting # *444***

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|  |  | **CR** |  | **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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| ***Source to WG:*** | Kontron Transportation France, Nokia, UIC | | | | | | | | | |
| ***Source to TSG:*** | SA6 | | | | | | | | | |
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| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **C** |  | | | | | ***Release:*** | | |  |
|  | *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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Some information flows of ad hoc group call do not contain all information elements required by FRMCS. In FRMCS the criteria contain for example the type of ad hoc group call and the area in which the call is happening. This Information is essential for railway operation and was also available in the legacy system. This CR adds them to provide the same functionality as available in the legacy . | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Adding criteria to information flows originating from the MCPTT server where necessary. Adding text to procedures to further clarify handling of criteria. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Essential information for FRMCS is missing | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 10.19.2.4, 10.19.2.5, 10.19.2.10, 10.19.2.21, 10.19.3.1.3, 10.19.3.1.6, 10.19.3.2.3, 10.19.3.2.7 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |
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| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* First Change \* \* \* \*

#### 10.19.2.4 Ad hoc group call request (MCPTT server – MCPTT client)

Table 10.19.2.4-1 describes the information flow ad hoc group call request from the MCPTT server to the MCPTT client.

Table 10.19.2.4-1: Ad hoc group call request information elements

|  |  |  |
| --- | --- | --- |
| Information Element | Status | Description |
| MCPTT ID | M | The MCPTT ID of the calling party |
| MCPTT ID | M | The identity of the MCPTT user towards which the request is sent |
| Functional alias | O | The functional alias of the calling party |
| MCPTT ad hoc group ID | M | The MCPTT group ID to be associated with the ad hoc group call |
| SDP offer | M | Offered Media parameters of MCPTT server |
| Broadcast indicator  (see NOTE) | O | Indicates that the ad hoc group call request is for a broadcast ad hoc group call |
| Imminent peril indicator (see NOTE) | O | Indicates that the ad hoc group call request is an MCPTT imminent peril ad hoc group call |
| Emergency Indicator (see NOTE) | O | Indicates that the ad hoc group call request is an MCPTT emergency ad hoc group call |
| Preconfigured MCPTT group ID | O | Group identity whose configuration is to be applied for this ad hoc group call. |
| Resulting criteria for determining the participants | O | Carries the details of criteria or meaningful label identifying the criteria or the combination of both that the MCPTT server used for determining the participants e.g., it can be a location based criteria to invite participants in a particular area |
| NOTE: If used, only one of these information elements is present. | | |

\* \* \* Next Change \* \* \* \*

#### 10.19.2.5 Ad hoc group call response (MCPTT server – MCPTT client)

Table 10.19.2.5-1 describes the information flow ad hoc group call response from the MCPTT server to the MCPTT client.

Table 10.19.2.5-1: Ad hoc group call response information elements

|  |  |  |
| --- | --- | --- |
| Information Element | Status | Description |
| MCPTT ID | M | The MCPTT ID of the calling party |
| Functional alias | O | The functional alias of the calling party |
| MCPTT ad hoc group ID | M | The MCPTT group ID associated with the ad hoc group call |
| SDP answer | O | Media parameters selected and present if the Result is success. |
| Result | M | Result of the group call request (success or failure) |
| Resulting criteria for determining the participants | O | Carries the details of criteria or meaningful label identifying the criteria or the combination of both that the MCPTT server used for determining the participants e.g., it can be a location based criteria to invite participants in a particular area |

\* \* \* Next Change \* \* \* \*

#### 10.19.2.10 Ad hoc group call notify (MCPTT server – MCPTT client)

Table 10.19.2.10-1 describes the information flow ad hoc group call notify from MCPTT server to MCPTT client.

Table 10.19.2.10-1: Ad hoc group call notify

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MCPTT ID | M | The MCPTT ID of ad hoc group call participant |
| Functional alias | O | The associated functional alias of the MCPTT user of the ad hoc group call participant |
| MCPTT ad hoc group ID | M | The MCPTT group ID associated with the ad hoc group call |
| MCPTT ID list | O | The list of the invited MCPTT users who did not acknowledge the ad hoc group call request within a configured time or the list of the invited MCPTT users who acknowledged the ad hoc group call request and joined or the list of the MCPTT users who joined or left the ongoing MCPTT ad hoc group call. |
| Resulting criteria for determining the participants | O | Carries the details of criteria or meaningful label identifying the criteria or the combination of both that the MCPTT server used for determining the participants e.g., it can be a location based criteria to invite participants in a particular area |

\* \* \* Next Change \* \* \* \*

#### 10.19.2.21 Modify ad hoc group call criteria response (MCPTT server – MCPTT client)

Table 10.19.2.21-1 describes the information flow Modify ad hoc group call criteria response from the MCPTT server to the MCPTT client.

Table 10.19.2.21-1: Modify Ad hoc group call criteria response information elements

|  |  |  |
| --- | --- | --- |
| Information Element | Status | Description |
| MCPTT ID | M | The MCPTT ID of the requesting MCPTT user who is authorized to modify the ad hoc group call criteria |
| Functional alias | O | The functional alias of the requesting MCPTT user who is authorized to modify the ad hoc group call criteria |
| MCPTT ad hoc group ID | M | The MCPTT group ID of ad hoc group call whose participants list needs to be modified |
| Result | M | Result of the modify ad hoc group call participants request (success or failure) |
| Resulting criteria for determining the participants | O | Carries the details of criteria or meaningful label identifying the criteria or the combination of both that the MCPTT server used for determining the participants e.g., it can be a location based criteria to invite participants in a particular area |

\* \* \* Next Change \* \* \* \*

##### 10.19.3.1.3 Ad hoc group call setup with MCPTT server determining the participants lists

Figure 10.19.3.1.3-1 below illustrates the ad hoc group call setup procedure initiated by the MCPTT user and MCPTT client 1 wherein the list of participants is determined by the MCPTT server based on the citeria received from the MCPTT client.

Pre-conditions:

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

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



Figure 10.19.3.1.3-1: Ad hoc group call participants determined by MCPTT server

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

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

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

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

2. If the ad hoc group call is supported, the MCPTT server verifies whether the user at MCPTT client 1 is authorized to initiate an ad hoc group call. If not authorized, the MCPTT server rejects the ad hoc group call request as specified in the step 3. The MCPTT server accepts the ad hoc group call request if the ad hoc group call is supported and authorized.

If functional alias is present, the MCPTT 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 MCPTT server checks the privacy policy of the MCPTT user to decide if the location information of MCPTT client 1 can be provided to other users on the call (refer to Annex A.3 "Authorisation to provide location information to other MCPTT users on a call when talking").

If an emergency indicator is present in the received MCPTT ad hoc group call request, the MCPTT 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 MCPTT ad hoc group call request, the MCPTT 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 MCPTT 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 MCPTT server assigns a MCPTT 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 MCPTT server shall send the ad hoc group call request return message to MCPTT client 1 containing the below:

i. The MCPTT ad hoc group ID, either generated by the MCPTT server, if not included in the ad hoc group call request of step 1, or if the provided MCPTT ad hoc group ID is not accepted by the MCPTT 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, the MCPTT server and MCPTT client 1 shall not proceed with the rest of the steps.

4. The MCPTT 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. Depending on the criteria provided and based on local policy, the MCPTT server may modify the criteria received in step 1 to determine the list of participants to the resulting criteria for determining the list of participants.

NOTE 1 The modification of the criteria can be necessary for example if the MCPTT server has to determine a pre-configured area based on the location of the originator, and the list of users to be invited are the ones inside the pre-configured area.

NOTE 2: The content of the Criteria information element, the details of the pre-defined criteria, and the way how the MCPTT server determines the list of participants are left to implementation.

5. The MCPTT server sends the ad hoc group call requests towards the MCPTT clients 2 and 3. While sending the ad hoc group call requests, the MCPTT server shall remove the information elements that are not required to be conveyed to the target MCPTT 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 MCPTT server considers the ad hoc group call participants as implicitly affiliated to the ad hoc group.

6. The receiving MCPTT clients notify their corresponding MCPTT user about the incoming ad hoc group call request with the information of the MCPTT group ID for the ad hoc group.

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

NOTE 2: For emergency ad hoc group calls the receiving MCPTT client shall always accept the request.

8. The MCPTT server sends the ad hoc group call response to MCPTT client 1 through the signalling path to inform about successful call establishment. The ad hoc group call response contains the resulting criteria used by the MCPTT server from step 4 to determine the list of participants to be invited.

9. The MCPTT server may notify the initiating MCPTT user of all MCPTT users who acknowledged the ad hoc group call request and joined the ad hoc group call. This notification may be sent to the initiating MCPTT user by the MCPTT server more than once during the call when MCPTT users join or leave the MCPTT ad hoc group call. The authorized users (not shown in figure), who are configured to receive the participants information of ad hoc group call, are notified to receive the MCPTT IDs of the MCPTT users who acknowledged the ad hoc group call request and joined the ad hoc group call, when the MCPTT users joins late or leave the MCPTT ad hoc group call. All ad hoc group call notify messages contain the resulting criteria used by the MCPTT server from step 4 to determine the list of participants to be invited.

10. MCPTT client 1, MCPTT client 2 and MCPTT client 3 establish media plane and floor control resources.

\* \* \* Next Change \* \* \* \*

##### 10.19.3.1.6 Modification of ad hoc group call criteria by an authorized user

Figure 10.19.3.1.6-1 below illustrates the modification of ad hoc group call criteria procedure by an authorized user.

Pre-conditions:

1. The MCPTT user at the MCPTT client 1 is authorized to modify the criteria.

2. Both the MCPTT server and the MCPTT client 1 are aware of the criteria related to the ongoing ad hoc group call.



Figure 10.19.3.1.6-1: Modification of ad hoc group call criteria by the authorized user

1. The MCPTT user at the MCPTT client 1 is authorized and requests to modify the criteria for determining the list of participants. The MCPTT client 1 sends the modify ad hoc group call criteria request to the MCPTT server which contains an updated criteria to determine the list of participants.

2. The MCPTT server verifies whether the MCPTT client 1 is authorized to modify the criteria which determines the list of participants during on-going ad hoc group voice communication. The MCPTT server determines the list of ad hoc group call participants based on the criteria provided and identifies that MCPTT client 3 is to be removed from and MCPTT client 2 is to be added to the group. Depending on the criteria provided and based on local policy, the MCPTT server may modify the criteria received in step 1 to determine the list of participants to the resulting criteria for determining the list of participants.

NOTE 1 The modification of the criteria can be necessary for example if the MCPTT server has to determine a pre-configured area based on the location of the originator, and the list of users to be invited are the ones inside the pre-configured area.

3. The MCPTT server sends modify ad hoc group call criteria response containing the criteria used by the MCPTT server to determine the list of participants to be invited to MCPTT client 1.

4. The MCPTT server sends the ad hoc group call leave request to the MCPTT client 3 to remove it from the on-going ad hoc group call.

5. The MCPTT client 3 notifies the user of the ad hoc group call leave request.

6. The MCPTT client 3 sends the ad hoc group call leave response to the MCPTT server.

7. The MCPTT server sends the ad hoc group call request towards MCPTT client 2.

NOTE 2: Steps 7 to 9 can occur at any time following step 3.

8. The receiving MCPTT client 2 notifies the user about the incoming ad hoc group call.

9. The MCPTT client 2 accepts the ad hoc group call request and send ad hoc group call responses to the MCPTT server. The response may also contain a functional alias of the responding MCPTT user, which is verified (valid and activated for the user) by the MCPTT server. The MCPTT server considers the MCPTT user as implicitly affiliated to the ad hoc group.

10. The MCPTT server may notify the initiating MCPTT user of all the users who are added to the on-going ad hoc group call. This notification may be sent to the initiating MCPTT user by the MCPTT server more than once during the call when MCPTT users join or leave the ad hoc group call. All ad hoc group call notify messages contain the resulting criteria used by the MCPTT server to determine the list of participants to be invited.

11. The MCPTT server may notify the participants about the change in the participants list of on-going ad hoc group call. All ad hoc group call notify messages contain the resulting criteria used by the MCPTT server to determine the list of participants to be invited.

The MCPTT server continuously checks whether other MCPTT clients meet or if participating MCPTT clients no longer meet the criteria for the ad hoc group emergency call.

NOTE 3: If the ad hoc group call is associated with an ad hoc group emergency alert and the change of criteria caused the modification of ad hoc group call participant list then the ongoing ad hoc group emergency alert is modified accordingly.

\* \* \* Next Change \* \* \* \*

##### 10.19.3.2.3 Ad hoc group call setup – Participants list determined by the MCPTT server

Figure 10.19.3.2.3-1 below illustrates the ad hoc group call setup procedure initiated by an authorized user wherein the list of participants is determined by the MCPTT server based on the criteria received from the MCPTT client and determined MCPTT users are from multiple MCPTT systems.

Pre-conditions:

1. The security aspects of sharing the user information between primary and partner MC systems shall be governed as per the service provider agreement between them. In this case, it is considered that the partner MC system share their users' information to the primary MC system.

2. The authorized MCPTT user/dispatcher belongs to the primary MC system.

3. The MCPTT server 1 of the primary MC system is where the authorized MCPTT user/dispatcher creates the ad hoc group.

4. Some users of the ad hoc group belong to MCPTT server 2 of the partner MC systems.

5. The pre-configured group identity and pre-configured group configuration to be used for an ad hoc group have been preconfigured in MCPTT client and other participants of ad hoc group have also received the relevant security related information to allow them to communicate in an ad hoc group communication.



Figure 10.19.3.2.3-1: Ad hoc group call setup involving multiple MCPTT systems

1-3. Same as described in subclause 10.19.3.1.3.

4. The MCPTT server 1 determines the list of participants from the primary MC system and determines the partner MC system to be involved in the ad hoc group call based on the information present in the information element Criteria for determining the participants. This information element carries the criteria, indicator identifying pre-defined criteria, or a combination of both.

NOTE 1: The content of the Criteria information element, the details of the pre-defined criteria, and the way how the MCPTT server determines the list of participants are left to implementation.

5. If the MCPTT server 1 needs to involve the partner system based on the agreement and based on the criteria for determining the participant list, it sends the ad hoc group call get userlist request to the MCPTT server 2. This request carries the criteria to be used by the partner MC system and is equal or derived from the criteria received in the step 1. Depending on the criteria provided and based on local policy, the MCPTT server may modify the criteria received in step 1 to determine the list of participants to the resulting criteria for determining the list of participants.

NOTE 1 The modification of the criteria can be necessary for example if the MCPTT server has to determine a pre-configured area based on the location of the originator, and the list of users to be invited are the ones inside the pre-configured area.

6. MCPTT server 2 evaluates the criteria and determines the participants satisfying the criteria (i.e., MCPTT client 3 and MCPTT client 4) and sends the response containing the list of MCPTT users satisfying the criteria. The partner MCPTT server may apply local policies if any while determining the participants satisfying the criteria.

7. The MCPTT server 1 compiles the list of participants to be invited for the ad hoc group call including the participants from both primary and partner MC system.

8a-8b. The MCPTT server 1 sends the ad hoc group call request towards the MCPTT client 3 and MCPTT client 4. While sending the ad hoc group call request, the MCPTT server shall remove the information elements that are not required to be conveyed to the target MCPTT 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 MCPTT server 1 considers the ad hoc group call participants as implicitly affiliated to the ad hoc group.

9. The MCPTT server 1 sends the ad hoc group call requests towards the MCPTT client 2. While sending the ad hoc group call request, the MCPTT server shall remove the information elements that are not required to be conveyed to the target MCPTT 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 MCPTT server 1 considers the ad hoc group call participants as implicitly affiliated to the ad hoc group.

10a-10c. The receiving MCPTT clients notify their corresponding MCPTT user about the incoming ad hoc group call request with the information of the MCPTT group ID for the ad hoc group.

11. The MCPTT client 2 may accept or reject the ad hoc group call request and send ad hoc group call response to the MCPTT server 1.

12. The MCPTT client 3 may accept or reject the ad hoc group call request, and sends ad hoc group call response to the MCPTT server 1.

13. The MCPTT client 4 may accept or reject the ad hoc group call request, and sends ad hoc group call response to the MCPTT server 1.

14. The MCPTT server 1 sends the ad hoc group call response to MCPTT client 1 through the signalling path to inform about successful call establishment. The ad hoc group call response contains the resulting criteria used by the MCPTT server to determine the list of participants to be invited.

15. The MCPTT server 1 may notify the initiating MCPTT user of all MCPTT users who acknowledged the ad hoc group call request and joined the ad hoc group call. The MCPTT server 1 more than once during the call may send this notification to the initiating MCPTT user whenever an MCPTT user joins or leaves the MCPTT ad hoc group call. The authorized users (not shown in figure), who are configured to receive the participants information of ad hoc group call, are notified to receive the MCPTT IDs of the MCPTT users who acknowledged the ad hoc group call request and joined the ad hoc group call, when the MCPTT users joins late or leave the MCPTT ad hoc group call. All ad hoc group call notify messages contain the resulting criteria used by the MCPTT server to determine the list of participants to be invited.

16. The MCPTT client 1, MCPTT client 2, MCPTT client 3 and MCPTT client 4 establish media plane and floor control resources.

NOTE 2: The ad hoc group call request and response exchanged between MCPTT server 1 of primary MC system and MCPTT client 3/MCPTT client 4 will always traversal through the MCPTT server 2.

\* \* \* Next Change \* \* \* \*

##### 10.19.3.2.7 Modification of ad hoc group call criteria by an authorized user

Figure 10.19.3.2.7-1 illustrates the modification of ad hoc group call criteria procedure by the initiator of the ad hoc group call between multiple MC systems.

Preconditions:

- The MCPTT user at the MCPTT client 1 is authorized to modify the criteria.

- The MCPTT server A and MCPTT server B are aware of the criteria related to the ongoing ad hoc group call.

- MC system A and MC system B are interconnected.



Figure 10.19.3.2.7-1: Modifying the criteria for determining the participants during an ongoing ad hoc group call between multiple MC systems

1. An ad hoc group call has been established based on criteria sent by an authorized MCPTT client upon initiating the ad hoc group call.

2. The MCPTT user at the MCPTT client 1 is authorized and wishes to modify the criteria for determining the list of ad hoc group call participants.

3a. MCPTT client 1 sends a modify ad hoc group call criteria request to MCPTT server A.

3b. MCPTT server A determines that the modify ad hoc group call criteria request received in step 3a has impact on users in MCPTT server B. Depending on the criteria provided and based on local policy, the MCPTT server may modify the criteria received in step 3a to determine the list of participants to the resulting criteria for determining the list of participants.

3c. MCPTT server A sends a modify ad hoc group call criteria request to MCPTT server B containing the resulting criteria to be used by MCPTT server B. NOTE 1: If MCPTT server A identifies that the criteria require to add participants from another MC system then MCPTT server A sends an ad hoc group call request to the MCPTT server in that MC system.

4a/b. The MCPTT server A receives the ad hoc group call criteria modify response and forwards the response to MCPTT client 1 in MC system A.

5. MCPTT server B detects that MCPTT client 3 meets the criteria for the ongoing ad hoc group call initiated at MC system A.

5a. MCPTT server B sends an ad hoc group call add user notification message towards MCPTT server A.

5b. MCPTT server A sends an ad hoc group call request towards MCPTT client 3.

5c. The MCPTT user 3 is notified of entering an ongoing ad hoc group call.

5d. MCPTT client 3 sends an ad hoc group call response towards MCPTT server A.

5e. MCPTT server B sends an ad hoc group call remove user notification message towards MCPTT server A.

5f. MCPTT server A sends an ad hoc group call leave request towards MCPTT client 4.

5g. The MCPTT user 4 is notified of leaving an ongoing ad hoc group call.

5h. MCPTT client 4 sends an ad hoc group call leave response towards MCPTT server A.

6. The MCPTT server A may notify the authorised MCPTT user of all the users who are added to the on-going ad hoc group call. This notification may be sent to the authorised MCPTT user by the MCPTT server A more than once during the call when MCPTT users join or leave the ad hoc group call. All ad hoc group call notify messages contain the resulting criteria used by the MCPTT servers to determine the list of participants to be invited.

7. The MCPTT server Aadds MCPTT client 3 to the ad hoc group call and removes MCPTT client 4 from the ad hoc group call.

The MCPTT servers continuously check whether other MCPTT clients meet or if participating MCPTT clients no longer meet the criteria for the ad hoc group call.

NOTE 2: If the ad hoc group call is associated with an ad hoc group emergency alert and the change of criteria caused the modification of the ad hoc group call participant list then the ongoing ad hoc group emergency alert is modified accordingly.

\* \* \* Next Change \* \* \* \*