**3GPP TSG-SA WG6 Meeting #37-e S6-200798**

**e-meeting, 14th – 26th May 2020 (revision of S6-xxxxxx)**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.379** | **CR** | **0260** | **rev** | **-** | **Current version:** | **17.2.0** |  |
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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:*** | Clarification on user subscription, group policy and functional alias policy | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei, Hisilicon | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | enh3MCPTT | | | | |  | ***Date:*** | | | 2020-04-30 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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)* | |
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| ***Reason for change:*** | | The “user subscription”, “group policy” and “functional alias policy” used in TS 23.280 are not clear. From the context around the terms, they actually refer to the corresponding items “user configuration”, “group configuration” and “functional alias configuration” which are also used in the specification.  It is proposed to update the descriptions about “user subscription”, “group policy” and “functional alias policy”. | | | | | | | | |
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| ***Summary of change:*** | | (1) Change “user subscription” to “user configuration”,  (2) Change “group policy” to “group configuration”,  (3) Change “functional alias policy” to “functional alias configuration” | | | | | | | | |
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| ***Consequences if not approved:*** | | Confussion and ambiguity is caused if not approved | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7.4.2.3.2, 10.6.2.3.1.1.2, 10.6.2.4.3.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

##### 7.4.2.3.2 MCPTT server

The MCPTT server functional entity provides centralised support for MCPTT services.

All the MCPTT clients supporting users belonging to a single group are required to use the same MCPTT server for that group. An MCPTT client supporting a user involved in multiple groups can have relationships with multiple MCPTT servers.

NOTE 1: Possible requirements for handling multiple distinct media on different MCPTT servers are not covered in this version of the document.

The MCPTT server functional entity represents a specific instantiation of the GCS AS described in 3GPP TS 23.468 [9] to control multicast and unicast operations for group communications.

The MCPTT server functional entity is supported by the SIP AS, HTTP client and HTTP server functional entities of the signalling control plane.

By assuming the role of a GCS AS, the MCPTT server functional entity is responsible for:

- requesting the allocation of multicast resources utilizing the media distribution function;

- announcing the association of multicast resources to calls to MCPTT UEs;

- determining for each MCPTT UE involved in a given call whether to use unicast or multicast transport;

- announcing the assignment of multicast transport for specific calls to MCPTT UEs; and

- informing the media distribution function of the media streams requiring support for a given call.

The MCPTT server shall support the controlling role and the participating role. The MCPTT server may perform the controlling role for private calls and group calls. The MCPTT server performing the controlling role for a private call or group call may also perform a participating role for the same private call or group call. For each private call and group call, there shall be only one MCPTT server assuming the controlling role, while one or more MCPTT servers in participating role may be involved.

The MCPTT server performing the controlling roles is responsible for:

- call control (e.g. policy enforcement for participation in the MCPTT group calls) towards all the MCPTT users of the group call and private call;

- interfacing with the group management server for group policy and affiliation status information of this MCPTT server's served affiliated users;

- enforcing functional alias priority handling;

- managing floor control entity in a group call and private call; and

- managing media handling entity in call i.e. conferencing, transcoding.

The MCPTT server performing the functional alias controlling role is responsible for:

- interfacing with the functional alias management server for functional alias configuration;

- functional alias activation, deactivation, take over and interrogation support for MCPTT user.

The controlling roles for group call, private call and functional alias are independent with each other.

The MCPTT server performing the participating roles is responsible for:

- call control (e.g. authorization for participation in the MCPTT group calls) to its MCPTT users for group call and private call;

- group affiliation support for MCPTT user, including enforcement of maximum N2 number of simultaneous group affiliations by a user;

- enforcing functional alias priority handling;

- relaying the call control and floor control messages between the MCPTT client and the MCPTT server performing the controlling role; and

- media handling in call for its MCPTT users, i.e. transcoding, recording, lawful interception for both unicast and multicast media.

NOTE 2: The MCPTT server in the controlling role and the MCPTT server in the participating role can belong to the same MCPTT system or to different MCPTT systems.

For group regrouping involving multiple groups from primary and partner MCPTT systems,

- the group host MCPTT server of the temporary group performs the controlling role and is responsible for the centralized floor control, and for arbitration according to the temporary group or user policies (e.g., priority);

- the group host MCPTT server of the constituent MCPTT group is responsible for providing call invitations to their group members, and for filtering between constituent group members' floor control requests according to the constituent group or user policies (e.g., priority); and

- the MCPTT server responsible for the constituent MCPTT group members performs the participating role.

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10.6.2.3.1.1.2 Pre-arranged group call setup

The procedure focuses on the case where an MCPTT client is initiating an MCPTT group call with unicast signalling for communicating with the affiliated MCPTT members of that group.

Procedures in figure 10.6.2.3.1.1.2-1 are the signalling control plane procedures for the MCPTT client initiating establishment of an MCPTT group call with a pre-arranged group i.e., MCPTT users on client 1, client 2 and client 3 belong to the same group which is defined in the MCPTT group management server.

Pre-conditions:

1. A pre-arranged group is an MCPTT group that is pre-defined with MCPTT group ID and member list in the group management server. All members of the group belong to the same MCPTT system.

2. It is assumed that MCPTT users on MCPTT client 1, MCPTT client 2 and MCPTT client 3 are already registered for receiving MCPTT service and affiliated. Optionally, they may have an activated functional alias to be used during the group communication.

3. Optionally the MCPTT server has subscribed to the MCPTT functional alias controlling server within the MC system for functional alias activation/de-activation updates.

4. Optionally the MCPTT user on MCPTT client 1 has bound a functional alias to the MCPTT group ID.



Figure 10.6.2.3.1.1.2-1: Pre-arranged group call setup

1. User at MCPTT client 1 would like to initiate an MCPTT group call with a selected group (identified by MCPTT group ID). The MC service user may select a functional alias.

NOTE 1: MCPTT client 1 need not be aware of the affiliation status of other MCPTT clients to the group while initiating the group call.

NOTE 2: The selected functional alias is not changed during the group call, i.e. a MCPTT client uses the same functional alias until the group call is released or the MCPTT client has left the group call.

2. MCPTT client 1 sends a group call request towards the MCPTT server via the SIP core, which hosts the group selected by the user and identified by MCPTT group ID. The group call request also contains the MCPTT group ID and an SDP offer containing the MCPTT client media parameters. If there is a floor request to transmit, then the group call request contains an indication of an implicit floor request. If the MC service user of MCPTT client 1 has selected a functional alias, then the group call request contains that functional alias. If the group call request contains an implicit floor request it may also include location information.

3. The MCPTT server checks whether the user of MCPTT client 1 is authorized to initiate a group call for the selected group. If authorized and the group call is ongoing for that MCPTT group ID, the MCPTT server adds the requesting MCPTT client 1 to the existing MCPTT group call and notifies the MCPTT client 1 that the MCPTT group call is already in progress. Otherwise, MCPTT server resolves the MCPTT group ID to determine the members of that group and their affiliation status, based on the information from the group management server. The MCPTT server evaluates the applicable group call start criteria defined for this group (e.g. minimum number of affiliated members, specific members affiliated) and determines whether the group call setup can proceed.

If the functional alias is provided only in the group call request, or via binding, the MCPTT server proceeds with the value that is provided. If the functional alias is provided in both the group call request and via binding, it is up to the MCPTT server implementation to determine a value for the functional alias to be used.

If 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 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").

NOTE 3: MCPTT server can have already retrieved the user/group configuration data and locally cached. If the user/group configuration data is not locally cached on the MCPTT server then MCPTT server requests the user/group configuration data from the MCPTT user database/group management server.

4. MCPTT server includes information that it communicates using MCPTT service, offers the same media parameters or a subset of the media parameters contained in the initial received request and sends the corresponding group call request via the SIP core towards the MCPTT clients of each of those affiliated group members. MCPTT users are notified about the incoming group call and the functional alias of the group call initiating user is displayed if present. The MCPTT server indicates whether acknowledgement is required for the call and the functional alias of the group call initiating MC service user may be displayed.

5. The receiving MCPTT clients accept the group call request, and a group call response is sent to the group host MCPTT server. This response may contain an acknowledgement. The conditions for sending acknowledgement may be based on configuration. The response may also contain a functional alias of the responding MC service user, which is verified (valid and activated for the user) by the MCPTT server.

6. MCPTT server sends the group call response including the selected media parameters to the MCPTT client 1 through the signalling path to inform about successful call establishment. The response may contain the functional alias, which may be displayed.

NOTE 4: Step 6 can occur at any time following step 4b, and prior to step 7 depending on the conditions to proceed with the call.

7. If the initiating MCPTT user requires the acknowledgement from affiliated MCPTT group members, and the required MCPTT group members do not acknowledge the call setup within a configured time (the "acknowledged call setup timeout"), then the MCPTT server may proceed with or abandon the call and then notify the initiating MCPTT user that the acknowledgements did not include all required members according to group configuration. The MCPTT server may notify the initiating MCPTT user of all MCPTT group members who did not acknowledge the group call request within the configured time. 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 group call.

8. MCPTT client 1, client 2 and client 3 have successfully established media plane for communication. MCPTT floor participant 1, floor participant 2 and floor participant 3 exchange floor control information e.g., MCPTT client 1 receives the floor granted information over the established media plane assuming implicit floor control request from MCPTT client 1 while at the same time floor participants at other MCPTT client's receive floor taken information. MCPTT client 1 indicates to the MCPTT user that the floor is available to send media, while the other MCPTT clients in the group call will be receiving that media. If audio cut-in policy is enabled for the MCPTT group, floor arbitration follows the logic defined in subclause 10.9.1.5.

NOTE 5: The clients use the same functional alias within floor control procedures as used during group call setup.

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###### 10.6.2.4.3.2 Pre-arranged group call setup – terminating side

The procedure described in figure 10.6.2.4.3.2-1 is used for pre-arranged group call setup when acknowledgement is required from at least some of the call recipients.



Figure 10.6.2.4.3.2-1: Pre-arranged group call setup for an MCPTT group defined in partner MCPTT system (terminating)

1. MCPTT server of the partner MCPTT system sends the group call request message towards the MCPTT server of the primary MCPTT system of the MCPTT client.

2. The MCPTT server of the primary MCPTT system determines whether to forward the group call request message to the MCPTT client based on the user configuration.

3. The MCPTT server of the primary MCPTT system forwards the group call request message to MCPTT client. The MCPTT server indicates whether acknowledgement is required for the call.

4. MCPTT user is notified about the incoming group call.

5. The receiving MCPTT client accepts the group call and a response message is sent to the MCPTT server of the primary MCPTT system. This response may contain an acknowledgement. The conditions for sending acknowledgement may be based on configuration.

6. The MCPTT server of the primary MCPTT system forwards the response message to the MCPTT server of the partner MCPTT system (i.e. group hosting MCPTT server).

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