**3GPP TSG-SA WG6 Meeting #38-e S6-20xxxx**

**e-meeting, 20th – 31st July 2020 (revision of S6-** **200857, 1151)**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.280** | **CR** | **0258** | **rev** | **3** | **Current version:** | **17.3.0** |  |
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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:*** | | | 2020-07-14 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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)* | |
|  |  | | | | | | | | | |
| ***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 refers 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”. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | (1) Change “user subscription” to “user profile configuration”,  (2) Clarify that “group policy” is part of “group configuration”,  (3) Clarify that “functional alias policy” is part of “functional alias configuration”,  (4) add the procedure and information flow for MC service server to subscribe group configuration from group management server | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Confusion and ambiguity is caused if not approved | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 10.1.2.3, 10.1.2.4, 10.1.2.5, 10.1.2.6, 10.1.2.7, 10.1.2.8, 10.1.5.2a(new), 10.1.5.3, 10.1.5.3a(new),  10.8.3.1, 10.8.3.2.2, 10.8.3.2a.2, 10.8.4.2, 10.8.4.3, 10.8.4.5, 10.8.5.1.1, 10.8.5.1.2, 10.8.5.2.1,  10.13.4, 10.13.5, 10.13.8 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | Rev02: replace the “user subscription” to “user profile configuration”  Update the figures corresponding to “user subscription”, “group policy” and “functional alias policy” | | | | | | | | |

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* 1st change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

#### 10.1.2.3 Get group configuration request

Table 10.1.2.3-1 describes the information flow get group configuration request from the group management client to the group management server, and from the MC service server to the group management server.

Table 10.1.2.3-1: Get group configuration request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service group ID | M | MC service group ID of the group |
| MC service group information reference | M | Reference to configuration data for the MC service group |
| MC services requested (see NOTE) | O | Service(s) for which group configuration is requested; one or more of MCPTT, MCVideo, MCData |
| NOTE: If 'MC services requested' is not present, group configuration is requested for all services defined for the MC service group | | |

#### 10.1.2.4 Get group configuration response

Table 10.1.2.4-1 describes the information flow get configuration response from the group management server to the group management client, and from the group management server to the MC service server.

Table 10.1.2.4-1: Get group configuration response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service group ID | M | MC service group ID of the group |
| MC service group configuration data | M | MC service group configuration data |

#### 10.1.2.5 Subscribe group configuration request

Table 10.1.2.5-1 describes the information flow subscribe group configuration request from the group management client to the group management server, and from the MC service server to the group management server.

Table 10.1.2.5-1: Subscribe group configuration request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service group ID | M | MC service group ID of the group |
| MC services requested  (see NOTE) | O | Service(s) for which group configuration is requested; one or more of MCPTT, MCVideo, MCData |
| NOTE: If 'MC services requested' is not present, group configuration is requested for all services defined for the MC service group | | |

#### 10.1.2.6 Subscribe group configuration response

Table 10.1.2.6-1 describes the information flow subscribe group configuration response from the group management server to the group management client, and from the group management server to the MC service server.

Table 10.1.2.6-1: Subscribe group configuration response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service group ID | M | MC service group ID of the group |
| Result | M | Indicates the success or failure for the result |

#### 10.1.2.7 Notify group configuration request

Table 10.1.2.7-1 describes the information flow notify group configuration request from the group management server to the group management client, and from the group management server to the MC service server.

Table 10.1.2.7-1: Notify group configuration request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service group ID | M | MC service group ID of the group |
| MC service group information reference (see NOTE) | O | Reference to information stored relating to the MC service group |
| Group related key material (see NOTE) | O | Key material for use with the MC service group |
| NOTE: At least one of these information elements shall be present. | | |

#### 10.1.2.8 Notify group configuration response

Table 10.1.2.8-1 describes the information flow notify group configuration response from the group management client to the group management server, and from the MC service server to the group management server.

Table 10.1.2.8-1: Notify group configuration response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service group ID | M | MC service group ID of the group |
| Result | M | Indicates the success or failure for the result |

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Next change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

#### 10.1.5.2a Retrieve group configurations at the MC service server

The procedure for retrieving group configurations at the group management client is described in figure 10.1.5.2a-1. This procedure can be used when the MC service server has received the list of groups and needs to obtain the group configurations, or following a notification from the group management server that new group configuration information is available.

Pre-conditions:

- The group management server has received configuration data for groups, and has stored this configuration data;

- The MC service server needs to download group configuration data applicable for the MC service group ID.



Figure 10.1.5.2a-1: Retrieve group configurations at MC service server

1. The MC service server requests the group configuration data.

2. The group management server provides the group configuration data to the MC service server.

3. The MC service server stores the group configuration information.

#### 10.1.5.3 Subscription and notification for group configuration data at group management client

The procedure for subscription for group configuration data as described in figure 10.1.5.3-1 is used by the group management client to indicate to the group management server that it wishes to receive updates of group configuration data for groups for which it is authorized.

Pre-conditions:

- The group management server has some group configurations stored.



Figure 10.1.5.3-1: Subscription for group configurations at group management client

1. The group management client subscribes to the group configuration information stored at the group management server using the subscribe group configuration request.

2. The group management server provides a subscribe group configuration response to the group management client indicating success or failure of the request.

The procedure for notification of group configuration data as described in figure 10.1.5.3-2 is used by the group management server to inform the group management client that new group configuration data is available. It can also be used by the group management server to provide new group related key material to the group management client.

Pre-conditions:

- The group management client has subscribed to the group configuration information

- The group management server has received and stored new group configuration information, or the group management server has generated and stored new key material, or both of these have occurred.



Figure 10.1.5.3-2: Notification of group configurations to group management client

1. The group management server provides the notification to the group management client, who previously subscribed for the group configuration information. Optionally, the notify group configuration request may contain group related key material for the group management client.

2. The group management client provides a notify group configuration response to the group management server.

3. If the group management server had provided group related key material to the group management client, the group management client stores the key material.

If the group management server has notified the group management client about new group configuration information through this procedure, the group management client may then follow the procedure described in subclause 10.1.5.2 in order to retrieve that group configuration information.

#### 10.1.5.3a Subscription and notification for group configuration data at MC service server

The procedure for subscription for group configuration data as described in figure 10.1.5.3a-1 is used by the MC service server to indicate to the group management server that it wishes to receive updates of group configuration data for groups for which it is authorized.

Pre-conditions:

- The group management server has some group configurations stored.



Figure 10.1.5.3a-1: Subscription for group configurations at MC service server

1. The MC service server subscribes to the group configuration information stored at the group management server using the subscribe group configuration request.

2. The group management server provides a subscribe group configuration response to the MC service server indicating success or failure of the request.

The procedure for notification of group configuration data as described in figure 10.1.5.3a-2 is used by the group management server to inform the MC service server that new group configuration data is available.

Pre-conditions:

- The MC service server has subscribed to the group configuration information

- The group management server has received and stored new group configuration information.



Figure 10.1.5.3a-2: Notification of group configurations to MC service server

1. The group management server provides the notification to the MC service server, who previously subscribed for the group configuration information.

2. The MC service server provides a notify group configuration response to the group management server.

If the group management server has notified the group management client about new group configuration information through this procedure, the MC service server may then follow the procedure described in subclause 10.1.5.2a in order to retrieve that group configuration information.

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#### 10.8.3.1 MC service group affiliation procedure

Procedure for affiliation to MC service group(s) for a single MC service is described in figure 10.8.3.1-1.

Pre-conditions:

1. MC service client has already been provisioned (statically or dynamically) with the group information, or a pointer to the group information, that the MC service client is allowed to be affiliated;

2. MC service server may have retrieved the user profile configuration and group policy from the group configuration e.g. which user(s) are authorized to affiliate to what MC service group(s), priority, and other configuration data;

3. MC service client may have indicated to the group management server that it wishes to receive updates of group configuration data for MC service groups(s) for which it is authorized (as described in subclause 10.1.5.3);

4. The MC service client triggers the affiliation procedure. This is an explicit affiliation caused either by the MC service user or determined by a trigger event such as the MC service UE coming within a permitted geographic operational area of an MC service group; and

5. The group management server has subscribed to the MC service server within the MC system where the group is defined for affiliation status updates.



Figure 10.8.3.1-1: MC service group affiliation procedure

1. MC service client of the MC service user requests the MC service server to affiliate to an MC service group or a set of MC service groups.

2a. MC service server checks if the group policy is locally cached. If the group policy is not locally cached on the MC service server then MC service server requests the group configuration from the group management server.

2b. MC service server receives the group configuration from the group management server.

3. Based on the group policy from the group configuration and user profile, the MC service server checks if the MC service group(s) is enabled and if the MC service client is authorised to affiliate to the requested MC service group(s). The MC service server also performs the check for the maximum limit of the total number (N2) of MC service groups that the user can be affiliated to simultaneously.

4. If the user of the MC service client is authorised to affiliate to the requested MC service group(s) then the MC service server stores the affiliation status of the user for the requested MC service group(s).

5. MC service server confirms to the MC service client the affiliation (5a) and updates the group management server with the affiliation status of the user for the requested MC service group(s) (5b).

NOTE: Steps 5a and 5b can occur in any order or in parallel.

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##### 10.8.3.2.2 Procedure

The procedure for affiliation to MC service group(s) which is defined in a partner MC system where topology hiding is not required for a single MC service is described in figure 10.8.3.2.2-1.

Pre-conditions:

1. The MC service client has already been provisioned (statically or dynamically) with the group information, or a pointer to the group information, that the MC service client is allowed to be affiliated;

2. The MC service server of the primary MC system may have locally cached the MC service group affiliation status of the MC service user;

3. The MC service server of the partner MC system may have retrieved the group related information from the group management server;

4. The MC service client may have indicated to the group management server of the partner MC system that it wishes to receive updates of group configuration data for MC service group(s) for which it is authorized (as described in subclause 10.1.5.3);

5. The MC service user triggers the affiliation procedure. This is an explicit affiliation caused by the MC service user; and

6. The group management server has subscribed to the MC service server within the MC system where the group is defined for affiliation status updates.



Figure 10.8.3.2.2-1: Affiliation for an MC service group defined in partner MC system where topology hiding is not required

1. The MC service client requests the MC service server of the primary MC system to affiliate to an MC service group or a set of MC service groups.

2. The MC service server of the primary MC system checks if the MC service client is authorized to affiliate to the requested MC service group(s) based on the user profile. The MC service server also performs the check for the maximum limit of the total number (N2) of MC service groups that the user can be affiliated to simultaneously.

3. Based on the group information included in the request, the MC service server of the primary MC system, it determines to send group affiliation request to the corresponding MC service server of the partner MC system. The request may be routed through intermediate signalling nodes.

4a. The MC service server of the partner MC system checks if the group policy is locally cached. If the group policy is not locally cached on the MC service server then MC service server subscribes to the group configuration from the group management server.

4b. The MC service server of the partner MC system receives the group configuration from the group management server via notification and locally caches the group policy from the group configuration information.

5. Based on the group policy, the MC service server of the partner MC system checks if the MC service group(s) is not disabled and if the user of the MC service client is authorised to affiliate to the requested MC service group(s).

6. If the user of the MC service client is authorised to affiliate to the requested MC service group(s) then the MC service server of the partner MC system stores the affiliation status of the user for the requested MC service group(s).

7. The MC service server of the partner MC system sends the affiliation status result of requested MC service group(s) to the MC service server of the primary MC system (7a) and updates the group management server with the affiliation status of the user for the requested MC service group(s) (7b).

NOTE: Steps 7a and 7b can occur in any order or in parallel.

8. The MC service server of the primary MC system stores the affiliation status of the user for the requested MC service group(s).

9. The MC service server of the primary MC system sends the group affiliation status result for the requested MC service group(s) to the MC service client.

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

##### 10.8.3.2a.2 Procedure

Figure 10.8.3.2a.2-1 illustrates the group affiliation procedure to an MC service group defined in the partner MC system of the serving MC system of the MC service user, where topology hiding procedures are required.

Editor's note: It is FFS whether the MC system gateway servers shown in this procedure are roles of an MC service server or separate entities.

Pre-conditions:

1. MC service client 1 is service authorized within its serving MC system.

2. The group host MC service server of the MC service group to which the MC service user of MC service client 1 wishes to affiliate is located in the partner MC system of the serving MC system of MC service client 1

3. Topology hiding is required by both MC systems

4. The serving MC system of MC service client 1 and the group home MC system are configured to allow topology hiding to take place.



Figure 10.8.3.2a.2-1: Group affiliation to an MCservice group defined in partner MC system using topology hiding

1. MC service client 1 initiates an MC service group affiliation request to the serving MC service server of MC service client 1 on behalf of its MC service user.

2. The MC service server of the serving MC system checks that the MC service client 1 is authorized to affiliate to the requested MC service group based on the user profile configuration, and that the maximum number of MC service groups that the user can be affiliated to (N2) has not been exceeded.

3. The MC service server determines the group host MC service server of the MC service group. The MC service group is identified to have a different group home MC system, and if topology hiding is required by the serving MC system of MC service client 1, the serving MC system gateway server is determined to act as proxy group host MC service server for the MC service group.

4. The MC service server of the serving MC system forwards the MC service group affiliation request to the gateway server of the serving MC system.

NOTE 1: If the serving MC system of MC service client 1 does not require topology hiding, the serving MC service server of MC service client 1 is able to send the MC service group affiliation request directly to the gateway server of the group home MC system in step 4, omitting steps 5 and 6.

5. The gateway server determines which MC system is the group home system for the MC service group.

6. The gateway server in the serving system of MC service client 1 forwards the MC service group affiliation request to the gateway server of the group home MC system of the MC service group.

NOTE 2: If the group home MC system does not require topology hiding, the request from the serving MC system of MC service client 1 is sent directly to the group host MC service server in either step 4 or step 6, omitting steps 7 and 8.

7. The gateway server of the group home MC system of the MC service group determines which MC service server is the group host MC service server for that MC service group.

8. The gateway server of the group home system of the MC service group forwards the MC service group affiliation request to the group host MC service server of the MC service group.

9. The group host MC service server in the partner MC system checks whether the user of MC service client 1 is authorized to affiliate to the MC service group based on the MC service group configuration. The group host MC service server may optionally subscribe to the GMS containing the group configuration information, and receive notification of group policy from the group configuration. The group host MC service server shall update the GMS with the affiliation status of the user for the requested MC service group by sending the notify group dynamic data request (not shown in the figure).

10. The group host MC service server sends an MC service group affiliation response to the gateway server in the group home MC system of the MC service group.

NOTE 3: If the group home MC system does not require topology hiding, the MC service group affiliation response is sent directly to the gateway server of the serving MC system of MC service client 1.

11. The gateway server in the group home MC system forwards the MC service group affiliation response to the gateway server in the serving MC system of MC service client 1.

NOTE 4: If the serving MC system of MC service client 1 does not require topology hiding, the MC service group affiliation response is sent directly to the serving MC service server of MC service client 1.

12. The gateway server in the serving MC system of MC service client 1 forwards the MC service group affiliation response to the serving MC service server of MC service client 1.

13. The serving MC service server of MC service client 1 forwards the MC service group affiliation response to MC service client 1.

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

#### 10.8.4.2 MC service group de-affiliation procedure

The procedure for revoking the affiliation with an MC service group for a single MC service is described in figure 10.8.4.2-1.

Pre-conditions:

1. MC service server has already subscribed to the MC service group information from group management server and has stored the data of MC service group(s) to which the MC service user is affiliated to;

2. The MC service client triggers the de-affiliation procedure. This is an explicit de-affiliation requested either by the MC service user or determined by a trigger event such as the MC service UE moving outside a permitted geographic operational area of an MC service group; and

NOTE: The geographical operational area beyond which de-affiliation occurs may be larger than the geographical operational area within which affiliation is permitted, to avoid repeated affiliation and de-affiliation by a user on the edge of an operational area.

3. The group management server has subscribed to the MC service server within the MC system where the group is defined for affiliation status updates.

4. The MC service server has subscribed to the MC service functional alias controlling server within the MC system for functional alias activation/de-activation updates.



Figure 10.8.4.2-1: MC service group de-affiliation procedure

1. MC service client requests the MC service server to de-affiliate from an MC service group or a set of MC service groups.

2. Based on the user profile and stored group policy from the group configuration, the MC service server checks if the user of the MC service client is authorized to de-affiliate from the requested MC service group(s) and if the user of the MC service client has affiliated to the requested MC service group(s). The authorisation check includes whether the MC service user has activated a certain functional alias which prevents de-affiliating or whether the MC service user is the last user who has bound a certain functional alias to the group which also prevents de-affiliating.

3. If the user of the MC service client has affiliated to the requested MC service group(s), is authorized to de-affiliate from the requested MC service group(s) then the MC service server removes the affiliation status of the user for the requested MC service group(s).

4. MC service server provides to the MC service client the group de-affiliation response (4a) and updates the group management server with the de-affiliation status of the user for the requested MC service group(s) (4b).

NOTE: Steps 4a and 4b can occur in any order or in parallel.

#### 10.8.4.3 De-affiliation from MC service group(s) defined in partner MC service system

The procedure for de-affiliation from affiliated MC service group(s) which is defined in partner MC service system for a single MC service is described in figure 10.8.4.3-1.

Pre-conditions:

1. The primary/partner MC service servers have already subscribed to the group information from group management server and stored the data of MC service group(s) to which the MC service user intends to de-affiliate; and

2. The group management server has subscribed to the MC service server within the MC system where the group is defined for affiliation status updates.



Figure 10.8.4.3-1: De-affiliation from an MC service group defined in partner MC service system

1. The MC service client requests the primary MC service server to de-affiliate from an MC service group or a set of MC service groups.

2. The primary MC service server checks if the MC service client is authorized to de-affiliate from the requested MC service group(s) based on the user profile. The primary MC service server performs the check if the user has affiliated to the MC service groups.

3. Based on the MC service group information included in the request, the primary MC service server determines to send MC service group de-affiliation request to the corresponding partner MC service server. The request may be routed through some intermediate signalling nodes.

4. Based on the stored group policy from the group configuration, the partner MC service server checks if the MC service group is not disabled and if the user of the MC service client has affiliated to the requested MC service group(s) and is authorized to de-affiliate from the requested MC service group(s).

5. If the user of the MC service client has affiliated to the requested MC service group(s) and is authorized to de-affiliate to the requested MC service group(s), then the partner MC service server removes the affiliation status of the user for the requested MC service group(s).

6. The partner MC service server sends the MC service group de-affiliation response to primary MC service server (6a) and updates the group management server with the de-affiliation status of the user for the requested MC service group(s) (6b).

NOTE: Steps 6a and 6b can occur in any order or in parallel.

7. The primary MC service server will remove any information stored about the user's affiliation with requested MC service group(s) of partner MC service system.

8. The primary MC service server sends the MC service group de-affiliation response to the MC service client.

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

#### 10.8.4.5 MC server initiated group de-affiliation from group defined in partner MC service system

The procedure for the MC service server to trigger a de-affiliation from an MC service group which is defined in partner MC service system is described in figure 10.8.4.5-1.

Pre-conditions:

1. The MC service user has previously affiliated to the group, and the MC service server has stored the status of MC service group affiliation;

2. Following a relevant trigger condition (e.g. the user moving outside the permitted geographical operational area of the MC service group, or the permitted geographical operational area is modified), the de-affiliation for the MC service user is initiated by the MC service server from the MC service group;

3. The primary/partner MC service servers have already subscribed to the group information from group management server and stored the data of MC service group(s) to which the MC service user intends to de-affiliate; and

4. The group management server has subscribed to the MC service server within the MC system where the group is defined for affiliation status updates.



Figure 10.8.4.5-1: MC service server initiated group de-affiliation from group in partner system procedure

1. The MC service server determines the MC service client could be de-affiliated to the group due to the trigger event, e.g. the permitted geographical operational area is modified, causing the user outside of the permitted geographical operational area of the MC service group, the MC service server needs to de-affiliate the MC Service user from the group.

2. Based on the stored MC service group information, the primary MC service server determines to send MC service group de-affiliation request to the corresponding partner MC service server. The request may be routed through some intermediate signalling nodes.

3. Based on the stored group policy from the group configuration, the partner MC service server checks if the MC service group is not disabled and if the user of the MC service client has affiliated to the requested MC service group(s) and is authorized to de-affiliate from the requested MC service group(s).

4. If the user of the MC service client has affiliated to the requested MC service group(s) and is authorized to de-affiliate to the requested MC service group(s), then the partner MC service server removes the affiliation status of the user for the requested MC service group(s).

5. The partner MC service server sends the MC service group de-affiliation response to primary MC service server (5a) and updates the group management server with the de-affiliation status of the user for the requested MC service group(s) (5b).

NOTE: Steps 5a and 5b can occur in any order or in parallel.

6. The primary MC service server changes the affiliation status of the user.

7. The MC service server provides a de-affiliation notification with the group information to the MC service client.

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

##### 10.8.5.1.1 Authorized user remotely changes another MC service user's affiliated MC service group(s) – mandatory mode

The procedure for an authorized user to remotely change another MC service user's affiliated MC service group(s) for a single MC service without requiring the target user's approval is described in figure 10.8.5.1.1-1.

Pre-conditions:

1. The MC service client 1 (authorized user 1) has already been provisioned (statically or dynamically) with the target MC service user's information and its group information, that target MC service user 2 is allowed to be affiliated or de-affiliated;

2. The primary MC service server may have retrieved the user/group configuration e.g. information regarding user(s) authorization to affiliate or to de-affiliate to MC service group(s), priority, and other related configuration data; and

3. The group management server has subscribed to the MC service server within the MC system where the group is defined for affiliation status updates.



Figure 10.8.5.1.1-1: Remotely change MC service group affiliation – mandatory mode

1. When an authorized user requires one or more MC service users to change the affiliation to an MC service group or set of MC service groups, the MC service client 1 of the authorized user 1 sends MC service group affiliation change request with the indication of mandatory mode to the primary MC service server. The information used to indicate the change of the affiliation relationship between the target MC service user 2 and the MC service group(s) shall be included.

2. The primary MC service server shall check if the MC service user 1 is authorized to initiate the change of the affiliation relationship between the target user 2 and the MC service group(s). The primary MC service server shall check if the target MC service user(s) are authorized for the requested affiliation relationship based on the user profile. The primary MC service server also performs the check for the maximum limit on the total number (N2) of MC service groups that the user can be affiliated to simultaneously.

3a. The primary MC service server checks if the group policy is locally cached. If the group policy is not locally cached on the MC service server, then, the MC service server subscribes to the group configuration from the group management server.

3b. The primary MC service server receives the group configuration from the group management server via notification and locally caches the group policy from the group configuration information.

4. Based on the group policy, the primary MC service server checks if the target MC service user 2 is authorized to affiliate or de-affiliate to the MC service group(s).

5. If the target MC service user 2 is authorized to affiliate or de-affiliate to the MC service group(s) then the primary MC service server stores the new requested affiliation status of the target MC service user 2 for the MC service group(s).

6. If the requested affiliation status is a change from the current affiliation status, then the primary MC service server updates the group management server with the affiliation status of the MC service user 2 for the MC service group(s).

7a. If the requested affiliation status is a change the primary MC service server sends the MC service group affiliation change request with the indication of mandatory mode to MC service client 2 of the target MC service user 2. The target MC service user 2 receives the latest information about the affiliated MC service groups. The MC service client 2 may subscribe to the affiliated MC service groups information with the group management server.

7b. The MC service user 2 provides a response to the primary MC service server by sending an MC service group affiliation change response.

8. The primary MC service server sends the MC service group affiliation change response to MC service client 1. If the requested affiliation status was not changed (see 7a), then the MC service server creates an appropriate (accept) MC service group affiliation change response to send to MC service client 1.

NOTE: Steps 6, 7a, 7b and 8 can occur in any order or in parallel, with the restriction that step 7b can only occur after step 7a occurred.

##### 10.8.5.1.2 Authorized user remotely changes another MC service user's affiliated MC service group(s) – negotiated mode

The procedure for the authorized user to remotely change another MC service user's affiliated MC service group(s) for a single MC service with the target MC service user's approval is described in figure 10.8.5.1.2-1.

Pre-conditions:

- The MC service client 1 (authorized user 1) has already been provisioned (statically or dynamically) with target MC service user's information and its group information, that target MC service user 2 is allowed to be affiliated or de-affiliated;

- The primary MC service server may have retrieved the user/group configuration e.g. information regarding user(s) authorization to affiliate or to de-affiliate to MC service group(s), priority, and other related configuration data.



Figure 10.8.5.1.2-1: Remotely change MC service group affiliation – negotiated mode

1. When an authorized user requires one or more MC service users to change the affiliation to an MC service group or set of MC service groups, the MC service client 1 of the authorized user 1 sends MC service group affiliation change request to the primary MC service server. The information (i.e. target MC service user(s) ID, MC service group(s) ID, requested affiliation status) used to indicate the change of the affiliation relationship between the target MC service user 2 and the MC service group(s) shall be included.

2. The primary MC service server checks if the MC service user 1 is authorized to initiate the change of the affiliation relationship between the target user 2 and the MC service group(s). The primary MC service server checks if the target MC service user(s) are authorized for the requested affiliation relationship based on the user profile and the group policy from the group configuration (i.e. if not available, the primary MC service server obtains the group configuration from the group management server). The primary MC service server also performs the check for the maximum limit on the total number (N2) of MC service groups that the user can be affiliated to simultaneously.

3. If the target MC service user 2 is authorized to accept the changes to its affiliated MC service group(s), then the primary MC service server sends the MC service group affiliation change request to the MC service client 2 of the target MC service user 2.

4. If the requested affiliation status is different from the current affiliation status, then the MC service client 2 notifies the MC service group affiliation change request to the target MC service user 2 to receive the approval from the user on the proposed changes to the affiliated MC service group(s).

NOTE 1: The procedure is aborted if the target MC service user 2 does not respond to the notification within an implementation dependent time.

5. If the target MC service user 2 provides a response (accept or reject) to the notification, then the MC service client 2 sends an MC service group affiliation change response to the primary MC service server. A response indicating target user 2's acceptance to the requested affiliation change by authorized user 1, triggers the affiliation or de-affiliation procedures at the primary MC service server (see subclause 10.8.3.1 or subclause 10.8.4.2) as per the MC service user 1's requested changes to the target user 2's affiliated group(s).

NOTE 2: In the case where the affiliation changes for target user 2 includes MC service groups defined in partner MC systems, the primary MC service server performs the affiliation or de-affiliation procedures by interacting with the partner MC systems (see subclause 10.8.3.2 or subclause 10.8.4.3).

6. The primary MC service server sends the MC service group affiliation change response to the MC service client 1. If the requested affiliation status was not changed (see 4), then the MC service server creates an appropriate (accept) MC service group affiliation change response to send to MC service client 1.

NOTE 3: If multiple MC service groups are included in step 1, and these MC service groups belong to different partner MC systems, the primary MC service server can wait until all the partner MC systems provides the MC service group affiliation change response messages.

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

##### 10.8.5.2.1 Authorized user remotely changes another MC service user's affiliated MC service group(s) defined in partner MC system – mandatory mode

The procedure for the authorized user to remotely change another MC service user's affiliated MC service group(s) defined in partner MC systems for a single MC service without requiring the target user's approval is described in figure 10.8.5.2.1-1.

Pre-conditions:

1. The MC service client 1 (authorized user) has already been provisioned (statically or dynamically) with the target MC service user 2's information and group information, that the target MC service user 2 is allowed to be affiliated or de-affiliated;

2. The MC service client 1 (authorized user 1), MC service client 2 (target MC service user 2), and the primary MC service server belong to the same MC system;

3. The partner MC service server may have retrieved the group related information from the group management server;

4. The primary MC service server may have retrieved the user policy e.g. user related information regarding user(s) authorization to affiliate or to de-affiliate to MC service group(s), priority, and other related configuration data; and

5. The partner group management server has subscribed to the MC service server within the MC system where the group is defined for affiliation status updates.



Figure 10.8.5.2.1-1: Remote change MC service group affiliation defined in partner MC system – mandatory mode

1. When an authorized user requires one or more MC service users to change the affiliation to an MC service group or set of MC service groups, the MC service client 1 of the authorized user 1 sends MC service group affiliation change request with the indication of mandatory mode to the primary MC service server. The information (i.e. target MC service user(s) ID, MC service group(s) ID, requested affiliation status) used to indicate the change of the affiliation relationship between the target MC service user 2 and the MC service group(s) shall be included.

2. The primary MC service server shall check if the MC service user 1 is authorized to initiate the change of the affiliation relationship between the target user 2 and the MC service group(s). The primary MC service server shall check if the target MC service user(s) are authorized for the requested affiliation relationship based on the user profile. The primary MC service server also performs the check for the maximum limit on the total number (N2) of MC service groups that the user can be affiliated to simultaneously.

3. Based on the MC service group information included in the request, the primary MC service server determines to send MC service group affiliation change request to the corresponding partner MC service server (group host server).

4a. The partner MC service server checks if the group policy is locally cached. If the group policy is not locally cached on the partner MC service server then the partner MC service server subscribes to the group configuration from the group management server.

4b. The partner MC service server receives the group configuration from the group management server via notification and locally caches the group policy from the group configuration information.

5. Based on the group policy, the partner MC service server checks if the target MC service user 2 is authorized to affiliate to the MC service group(s). It is possible that the target MC service user 2 affiliates to one or more MC service groups and also de-affiliates from one or more MC service groups.

6. If the target MC service user 2 is authorized to affiliate or de-affiliate to the MC service group(s) and if the requested affiliation status is different to the current affiliation status, then the partner MC service server stores the new affiliation status of the target MC service user 2 for the MC service group(s).

7. The partner MC service server sends the MC service group affiliation change response to the primary MC service server.

8. The partner MC service server updates the group management server with the affiliation status of the target MC service user 2 for the MC service group(s).

NOTE: Steps 7 and 8 can occur in any order or in parallel.

9. If the requested affiliation status is different to the current affiliation status, then the primary MC service server stores the new affiliation status of the target MC service user 2 for the MC service group(s).

10a. If the requested affiliation status is different to the current affiliation status, then the primary MC service server sends the MC service group affiliation change request with the indication of mandatory mode to MC service client 2 of the target MC service user 2. The target MC service user 2 receives the latest information about the affiliated MC service groups. Further the MC service client 2 may subscribe for the affiliated MC service groups information with the group management server.

10b. The target MC service client 2 provides an MC service group affiliation change response to the MC service server.

11. The primary MC service server sends the MC service group affiliation change response to MC service client 1 (authorized user). If the requested affiliation status was not changed (see 10a), then the MC service server creates an appropriate (accept) MC service group affiliation change response to send to MC service client 1.

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

### 10.13.4 MC service user activates functional alias(es) within an MC system

The procedure for MC service user activates functional alias(es) within an MC system is illustrated in figure 10.13.4-1.

Pre-conditions:

1. MC service client has already been provisioned (statically or dynamically) with the functional alias(es) information that the MC service client is allowed to activate.

2. MC service server may have retrieved the user profile and functional alias policy from the functional alias configuration e.g. which user(s) are authorized to activate to what functional alias, priority, and other configuration data.

3. MC service client may have indicated to the functional alias management server that it wishes to receive updates of functional alias data for the functional aliases for which it is authorized.

4. The MC service client triggers the functional alias activation procedure. This is an explicit activation caused either by the MC service user or determined by a trigger event such as the MC service UE coming within a permitted geographic operational area of a functional alias.



Figure 10.13.4-1: Functional alias activation procedure within an MC system

1. MC service client of the MC service user requests the MC service server to activate a functional alias or a set of functional aliases.

NOTE 1: If the MC service server is not the one that performs the functional alias controlling role, the MC service server will forward the request to the MC service server that performs the functional alias controlling role.

2. The MC service server checks if there are any conflicts with active functional alias(es).

3. If the user of the MC service client is authorised to activate the requested functional alias(es) then the MC service server stores the functional alias(es) status of the requested functional alias(es).

If a certain functional alias(es) can be simultaneously active for multiple MC service users and the upper limit of number of simultaneous MC service users is not reached, the MC service shall activate the functional alias(es) for the MC service user and inform all other MC service user(s) with sharing the same functional alias(es) (step 5). If the limit of number of simultaneous MC service users is reached or the functional alias is not allowed to be shared, the request is rejected and the MC service user is notified (step 4).

If the functional alias(es) is (are) already used by another MC service user(s), an authorized MC service user gets an offer to take over the functional alias from the MC service user currently using the functional alias(es).

NOTE 2: The functional alias status is notified to other servers (e.g. MC service servers) within the MC system that have subscribed to functional alias status.

4. MC service server sends a functional alias(es) activation response to the MC service client.

5. The MC service server informs all other MC service user(s) sharing the same functional alias(es).

### 10.13.5 MC service user de-activates functional alias(es) within an MC system

The procedure for MC service user de-activates functional alias(es) within an MC system is illustrated in figure 10.13.5-1.

When an MC service user does not want to use a functional alias(es) anymore, then the MC service user can de-activate functional alias(es).

Pre-conditions:

1. MC service server has already subscribed to the functional alias(es) information from the functional alias management server and has stored the data of the functional alias(es) a MC service user has activated.

2. The MC service client triggers the functional alias(es) de-activation procedure. This is an explicit de-activation request either by the MC service user or determined by a trigger event such as the MC service UE moving outside a permitted geographic operational area of a functional alias.



Figure 10.13.5-1: Functional alias de-activation procedure within an MC system

1. MC service client requests the MC service server to de-activate a functional alias or a set of functional aliases.

NOTE 1: If the MC service server is not the one that performs the functional alias controlling role, the MC service server will forward the request to the MC service server that performs the functional alias controlling role.

2. Based on the MC service user profile and stored functional alias policy from the functional alias configuration, the MC service server checks if the MC service user of the MC service client is authorized to de-activate from the requested functional alias(es) and if the MC service user of the MC service client has activated to the requested functional alias(es).

3. If the MC service user is authorized to de-activate from the requested functional alias(es) then the MC service server updates the functional alias activation status of the MC service user.

NOTE 2: The functional alias status is notified to other servers (e.g. MC service servers) within the MC system that have subscribed to functional alias status.

4. MC service server provides to the MC service client the functional alias de-activation response.

5. The MC service server informs all other MC service user(s) sharing the same functional alias(es).

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

10.13.8 Automatic activation of functional alias(es) within an MC system

The MC Service Server can automatically activate functional aliases that can be specified by internal or external triggers such as location dependency, schedule, or timer.

The procedure for automatic activation of functional alias(es) within an MC system is illustrated in figure 10.13.8-1. The MC service client(s) get(s) notified by the MC service server at the time when a functional alias has been activated by the MC service server.

Pre-conditions:

1. MC service server may have retrieved the MC service user profile and functional alias policy from the functional alias configuration, for example, which MC service user(s) are authorized to activate which functional alias(es), to use corresponding priorities and other configuration data associated with the functional alias.

2. MC service server has already been provisioned with the functional alias(es) information that the MC service client is allowed to activate.



Figure 10.13.8-1: Automatic functional alias activation within an MC system

1. The condition e.g. timer or current location of the MC service user for automatic functional alias(es) activation is met.

2. The MC service server checks if there are any conflicts with current active functional alias(es).

a.) If a certain functional alias(es) can be simultaneously active for multiple MC service users and the upper limit of simultaneous MC service users is not reached, the MC service server shall activate the functional alias(es) for the corresponding MC service user and inform all other MC service user(s) that are sharing the same functional alias(es) (step 5).

b.) If the limit of simultaneous MC service users is reached or the functional alias is not allowed to be shared then the MC service server does not proceed with the functional alias(es) activation procedure or the MC service server can reassign the functional alias, i.e. takeover, from the MC service user currently using the functional alias(es) to the new MC service client.

3. MC service server notifies the MC service client about the activation of the functional alias(es).

4. The MC service server stores the functional alias(es) status for the functional alias(es), including date and time of activation.

5. The MC service server informs all other MC service user(s) sharing the same functional alias(es).

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End Changes \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*