**3GPP TSG- Meeting #61 *S6-242340 (rev of 242021)***

**Jeju, South Korea, -**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** |  | **rev** | 3 | **Current version:** |  |  |
|  | | | | | | | | |
| *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:*** |  | | | | | | | | | |
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| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | SA6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Control Rooms and Dispatchers have requested that group based features are supported for Location in the MC architecture. This document is proposing to include some missing aspects in TS23.280, i.e., MC Group ID(s) for location information request. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | The changes relate to adding optional IEs to the information flow tables and changes to procedures and related text in sections 10.1.5.6, 10.9.2 and 10.9.3 of TS 23.280. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The group based, dynamic location reporting behaviour requested by the Control Rooms and Dispatchers of emergency services cannot be supported. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 10.1.5.6,10.9.2 and 10.9.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **x** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

##### 10.1.5.6.1 Information flows for subscription and notification for dynamic data associated with a group

###### 10.1.5.6.1.1 Subscribe group dynamic data request

Table 10.1.5.6.1.1-1 describes the information flow subscribe group dynamic data request from the MC service client to the MC service server and from the group management server to the MC service server and from the location management server to the MC service server.

Table 10.1.5.6.1-1: Subscribe group dynamic data request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service group ID | M | The MC service group ID for which dynamic data is requested. |
| List of group dynamic data type (see NOTE) | O | The type of group dynamic data requested, e.g., affiliated status, regroup status, emergency status |
| NOTE: If the Group dynamic data type IE is not present, all types of group dynamic data is requested. This IE shall be present from when the request is sent from the group management server and the location management server. | | |

###### 10.1.5.6.1.2 Subscribe group dynamic data response

Table 10.1.5.6.1.2-1 describes the information flow subscribe group dynamic data response from the MC service server to the MC service client and from the MC service server to the group management server and from the MC service server to the group management server. This information flow from the MC service server to the MC service client is sent individually addressed on unicast or multicast.

Table 10.1.5.6.1.2-1: Subscribe group dynamic data response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service group ID | M | The MC service group ID for which dynamic data is requested. |
| Status | M | Success or failure of the request |

###### 10.1.5.6.1.3 Notify group dynamic data request

Table 10.1.5.6.1.3-1 describes the information flow notify group dynamic data request from the MC service server to the MC service client and from the MC service server to the group management server and from the MC service server to the location management server. This information flow from the MC service server to the MC service client may be sent individually addressed or group addressed on unicast or multicast (see subclause 10.7.3.4.1).

Table 10.1.5.6.1.3-1: Notify group dynamic data request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service group ID | M | The MC service group ID for which dynamic data is requested. |
| Group dynamic data | M | Dynamic data associated with the group as per the requested group dynamic data type(s) |

###### 10.1.5.6.1.4 Notify group dynamic data response

Table 10.1.5.6.1.4-1 describes the information flow notify group dynamic data response from the MC service client to the MC service server and from the group management server to the MC service server and from the location management server to the MC service server.

Table 10.1.5.6.1.4-1: Notify group dynamic data response

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service group ID | M | The MC service group ID for which dynamic data was received |

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

##### 10.1.5.6.4 Procedures for subscription and notification for dynamic data associated with a group by the location management server

10.1.5.6.4.1. *“Subscription”*

The procedure for subscription for affiliation status regroup status and emergency status associated with an MC service group by the location management server is described in figure 10.1.5.6.4-1 and is used by the location management server to obtain the affiliation status (implicit and explicit) from the MC service server.

Pre-conditions:

- The MC service server is the MC service server within the MC system where the group is defined.



Location

Figure 10.1.5.6.4-1: Subscription for dynamic data associated with a group

1. The location management server subscribes to the dynamic data associated with a group stored in the MC service server using the subscribe group dynamic data request.

2. The MC service server provides a subscribe group dynamic data response to the location management server indicating success or failure of the request by specifying the list of group dynamic data type. The group dynamic data type indicates the group affiliation status to be subscribed.

10.1.5.6.4.2. *“Notification”*

The procedure for notification of group affiliation status as shown in figure 10.1.5.6.4-2 is used by the MC service server to inform the location management server about the updates to the group affiliation status.

Pre-conditions:

- The location management server has subscribed to the affiliation status in the MC service server.

- The affiliation status associated with a group subscribed to by the location management server has been updated at the MC service server.



Location

Figure 10.1.5.6.4-2: Notification of dynamic data associated with a group

1. The MC service server provides either or all of the affiliation status via a notification to the location management server based on the list of group dynamic data type which has subscribed.

2. The location management server provides a notify group dynamic data response to the MC service server.

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

#### 10.9.2.3 Location information request

*10.9.2.4. and 10.9.2.8 also needs to be included here.*

Tables 10.9.2.3-1, 10.9.2.3-2 and 10.9.2.3-3 describe the information flow from the MC service server to the location management server and from the location management server to the location management client and from location management client to location management server respectively for requesting an immediate location information report.

Table 10.9.2.3-1: Location information request (MC service server to location management server)

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service ID list | O  (see NOTE) | List of MC service users whose location information is requested |
| Functional alias | O  (see NOTE) | Location information of MC service users who have activated this functional alias is requested |
| NOTE: Either the MC service ID list or the functional alias must be present. | | |

Table 10.9.2.3-2: Location information request (Location management server to location management client)

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service ID | M | Identity of MC service user whose location information is requested |
| MC service ID | O | Identity of the requesting MC service user (e.g. MCPTT ID, MCVideo ID, MCData ID) |
| Functional alias | O | Functional alias that corresponds to the requested MC service user (e.g. MCPTT ID, MCVideo ID, MCData ID) |
| Functional alias | O | Functional alias that corresponds to the requesting MC service user (e.g. MCPTT ID, MCVideo ID, MCData ID) |

Table 10.9.2.3-3: Location information request (Location management client to location management server)

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service ID | M | Identity of the requesting authorized MC service user (e.g. MCPTT ID, MCVideo ID, MCData ID) |
| MC service ID list | O  (see NOTE 1) | List of MC service users whose location information is requested |
| MC group ID list | O  (see NOTE 1) | Group ID(s) that correspond to the requested MC service user(s) (e.g. MCPTT ID, MCVideo ID, MCData ID). (see NOTE 2) |
| Functional alias | O | Functional alias that corresponds to the requesting MC service user (e.g. MCPTT ID, MCVideo ID, MCData ID) |
| Functional alias | O  (see NOTE 1) | Functional alias that corresponds to the requested MC service user(s) (e.g. MCPTT ID, MCVideo ID, MCData ID) |
| NOTE 1: Either the MC service ID list or the MC group ID list or the functional alias must be present.  NOTE 2: Location information request is only for the currently affiliated users to the group(s) | | |

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

#### 10.9.2.5 Location information subscription request

Table 10.9.2.5-1 describes the information flow from the MC service server to the location management server for location information subscription request.

Table 10.9.2.5-1: Location information subscription request (MC service server – LMS)

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service ID list | M | List of MC service users whose location information is requested |
| Time between consecutive reports | M (see NOTE) | Indicates the interval time between consecutive reports. The provided time is to be used for all MC service IDs provided in the MC service ID list. |
| NOTE: If the interval time has a value of zero then the location management server will send the Location information notification immediately the location information report is received from the MC service user in the MC service ID list. | | |

Table 10.9.2.5-2 describes the information flow from the location management client to the location management server for location information subscription request.

Table 10.9.2.5-2: Location information subscription request (LMC – LMS)

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service ID | M | Identity of the requesting MC service user |
| MC service ID list | O | List of MC service users whose location information is requested |
| MC group ID list | O  (see NOTE 1) | Group ID(s) that correspond to the requested MC service user(s) (e.g. MCPTT ID, MCVideo ID, MCData ID). (see NOTE 2) |
| Time between consecutive reports | M (see NOTE 3) | Indicates the interval time between consecutive reports. The provided time is to be used for all MC service IDs provided in the MC service ID list or group ID list. |
| NOTE 1: Either the MC service ID list or the MC group ID list or the functional alias must be present.  NOTE 2: Location information request is only for the currently affiliated users to the group(s)  NOTE 3: If the interval time has a value of zero then the location management server will send the Location information notification immediately the location information report is received from the MC service user in the MC service ID list. | | |

Table 10.9.2.5-3 describes the information flow from the location management server in the primary MC system to the location management server in the partner MC system for the location information subscription request.

Table 10.9.2.5-3: Location information subscription request (LMS – LMS)

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service ID (see NOTE 1) | M | Identity of the requesting MC service user in the primary MC system |
| MC service ID list | M | List of the identities of MC service users in the partner MC system whose location information are requested |
| Time between consecutive location notifications (see NOTE 2) | M | Indicates the interval time between consecutive location notifications |
| NOTE 1: This element is only present when the request is originated by an MC service client.  NOTE 2: If the interval time has a value of zero then the location management server will send the location information notification immediately after the location information update is received from the MC service user in the MC service ID list. | | |

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

#### 10.9.3.3 Client-triggered location reporting procedure

NOTE: This procedure is valid for single MC system operation only.

Figure 10.9.3.3-1 illustrates the high level procedure of client-triggered location reporting.22

(This figure will be updated in VISIO in the final version).

Location management server

MC service server

Location management client 1

Location management client 2

1. Location reporting trigger

2. Subscribe/Notify to group dynamic data, as per 10.1.5.6.4.

3. Event triggered location reporting procedure on-demand location reporting procedure

Figure 10.9.3.3-1: Client-triggered location reporting procedure

1. Location management client 2 (authorized MC service user) sends a location reporting trigger to the location management server to start a location reporting procedure for obtaining the location information.

2. If step (1) involves an MC group ID list:

a) The LMS subscribes to group dynamic data request, to obtain group affiliation data from the MC service server. The MC service server notifies group affilation data to LMS, containing client 1’s affilitation to this group.

b) The location management server will execute location reporting or cancelling procedures for any newly affiliated or de-affiliated users as per 10.9.3.3 or 10.9.3.4 respectively, in event triggered reporting procedures. 3. Depending on the information specified by the location reporting trigger, location management server initiates an on-demand location reporting procedure or an event-triggered location reporting procedure for the location of location management client 1.

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

#### 10.9.3.5 Location information subscription procedure

NOTE 1: This procedure is valid for single MC system operation only.

Figure 10.9.3.5-1 illustrates the high level procedure of location information subscription request. The same procedure can be applied for location management client and other entities that would like to subscribe to MC service user location information.

(This figure will be updated in VISIO in the final version).

MC service server

Location management server

Location management client

1. Location information subscription request

2. Authorization check

3. Subscribe/ to group dynamic data, as per 10.1.5.6.4.



4. Location information subscription response



Figure 10.9.3.5-1: Location information subscription request procedure

1. MC service server or location management client sends a location information subscription request to the location management server to subscribe location information of one or more MC service users.

2. The location management server checks if the location management client is authorized to initiate the location information subscription request.

NOTE 2: As the MC service server is implicitly trusted, the Location management server needs not to check the authorization for the MC service server.

3. If step (1) involves an MC group ID list:

a) The LMS subscribes to group dynamic data request *according to 10.1.5.6.4.2*, to obtain group affiliation data from the MC service server..

b) The location management server will *create a list of* target MC service users

4. The location management server replies with a location information subscription response indicating the subscription status.

5. *When affiliation status of group member(s) change 🡪 “Notify dynamic group data request/response”…as described in figure 10.1.5.6.4.2. The location management server will update target MC service user list for this subscription, with any newly affiliated or de-affiliated users*

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

10.9.3.7 Location information cancel subscription procedure

*(this clause also needs to be updated)*

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