**3GPP TSG-SA WG6 Meeting #39-bis-e S6-201703**

**e-meeting, 12th – 20th October 2020 (revision of S6-xxxxxx)**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** |  | **rev** |  | **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 |  | Radio Access Network |  | Core Network | **X** |

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|  | | | | | | | | | | |
| ***Title:*** | Subscription to Group Location | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Motorola Solutions Inc. | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | enh3MCPTT | | | | |  | ***Date:*** | | | 2020-10-02 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | When LMC needs the location of affiliated members of a very large MC service groups the LMC must first obtain the list of members in the MC service group. In addition, it has to obtain frequent updates of the group member list based on affiliation and de-affiliation. For every such update event, the LMC must send the updated list to the LMS , so that the LMS can send location of the members in updated list.This is very inefficient and not scalable when large number of LMCs are monitoring multiple large groups. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Modify the location subscription / notification information elements to support group location subscription and notification. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Design will continue to be inefficient and will not lend itself to be scalable. | | | | | | | | |
|  | | . | | | | | | | | |
| ***Clauses affected:*** | | 7.5.2.15,10.9.2.5,10.9.2.7,10.9.2.8,10.9.3.5,10.9.3.7 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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

#### 7.5.2.15 Reference point CSC-15 (between the location management server and the MC service server)

The CSC-15 reference point, which exists between the location management server and the MC service server, is used by the MC service server to request and receive location information from location management server. The location management server may also use this reference point to subscribe to MC service group affiliation updates from the MC service server.

The CSC-15 reference point uses SIP-1 and SIP-2 reference points for transport and routing of subscription/notification related signalling. The CSC-15 reference point uses the HTTP-1 and HTTP-2 reference points for transport and routing of non-subscription/notification related signalling.

\* \* \* 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 or location management client to the location management server for location information subscription request.

Table 10.9.2.5-1: Location information subscription request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service ID | M | Identity of the requesting MC service user |
| MC service ID list | O (see NOTE 2) | List of MC service users whose location information is requested. |
| MC service group ID | O (see NOTE 2) | MC service group ID for whose affiliated members location information is requested |
| Time between consecutive reports | M (see NOTE1) | Indicates the interval time between consecutive reports |
| NOTE 1: 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.  NOTE 2: At least one of these elements shall be present | | |

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

#### 10.9.2.7 Location information notification

Table 10.9.2.7-1 describes the information flow from the location management server to the MC service server.

Table 10.9.2.7-1: Location information notification

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service ID list | M | List of the MC service IDs (e.g. MCPTT ID, MCData ID, MCVideo ID) of the MC service users whose location information needs to be notified |
| MC service group ID | O | Identity of the MC service group ID for which location of MC service ID(s) is being notified |
| MC service ID | M | Identity of the MC service user subscribed to location information of another MC service user (see NOTE 1) |
| Triggering event | M | Identity of the event that triggered the sending of the notification |
| Location Information (see NOTE 2) | M | Location information |
| NOTE 1: This is only used when the location management server sends location information notification to the MC service user who has subscribed the location information.  NOTE 2: This may contain multiple sets of elements for the MC service user. The following elements shall accompany the location information elements: time of measurement and optional accuracy. The following location information elements shall be optional (configurable) present: longitude, latitude, speed, bearing, altitude, ECGI, MBMS SAIs, with at least one provided. | | |

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

10.9.2.8 Location information cancel subscription request

Table 10.9.2.8-1 describes the information flow from the MC service server or location management client to the location management server for location information cancel subscription request.

Table 10.9.2.8-1: Location information cancel subscription request

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service ID | M | Identity of the requesting MC service user |
| MC service ID list | O (see NOTE) | List of MC service IDs (e.g. MCPTT ID, MCData ID, MCVideo ID) of the MC service users for whom location information is no longer required. |
| MC service group ID | O (see NOTE) | Identity of the MC service Group ID whose members’ location is no longer needed. |
| NOTE: At least one of these elements shall be present | | |

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

#### 10.9.3.5 Location information subscription procedure

NOTE: 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.



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 MC service server or the location management client is authorized to initiate the location information subscription request.

3. If the location information subscription request is for the location of members of MC service group, then the location management server can also subscribe to the affiliation status of the members of the MC service group.

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

10.9.3.7 Location information cancel subscription procedure

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

Figure 10.9.3.7-1 illustrates the high level procedure of location information cancel subscription request. The same procedure can be applied for location management client and other entities that would like to cancel their subscription to MC service user location information.



Figure 10.9.3.7-1: Location information cancel subscription request procedure

1. MC service server or location management client sends a location information cancel subscription request to the location management server to cancel the subscription for location information of one or more MC service users.
2. If the location information cancel subscription request is for the location of members of an MC service group, then the location management server may also cancel the subscription for the affiliation status of members of the MC service group.

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