**3GPP TSG-SA WG6 Meeting #63 S6-244408**

**Hyderabad, India, 14th – 18th October 2024 (revision of S6-24293)**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.280** | **CR** | **0609** | **rev** | **1** | **Current version:** | **19.4.0** |  |
|  | | | | | | | | |
| *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:*** | Requesting specific location information of MC service user on-demand or periodic | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Samsung | | | | | | | | | |
| ***Source to TSG:*** | SA6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | enhMC | | | | |  | ***Date:*** | | | 2024-10-08 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***Release:*** | | | Rel-19 |
|  | *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:*** | | An authorized MC service user or an MC service server interested in obtaining the location information of another MC service user uses either an on-demand request or periodic via subscription request. For on-demand request, location information is provided by the location management server by fetching the location information from the targeted MC service user on demand, and for periodic via subscription request, the location management server provides the latest available location information or on receiving the location information based on triggers. The provided location information may not be the desired location information and there is no way that what location information is expected is not indicated in an on-demand or periodic via subscription request. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | 10.9.2.3 and 10.9.2.5: The Location information request and Location information subscription request is updated to indicate what location information is expected for emergency and non-emergency cases.  10.9.3.3: Client-triggered location reporting procedure – Updated for following  1> The pre-condition is added that the location information of the MC service users at location management clients being requested has been provided with the location reporting configuration information. This ensures that all the required initial configurations are available at the targeted location management clients.  2> The step 2 is updated to support for event-triggered location reporting procedure and added NOTE to clarify that the location management server may choose to update the location reporting configuration of targeted location management clients  10.9.3.5: Location information subscription procedure - Updated for following  1> The pre-condition is added that the location information of the MC service users at location management clients being requested has been provided with the location reporting configuration information. This ensures that all the required initial configurations are available at the targeted location management clients.  2> The step 3 is added to support optionally initiation of event-triggered location reporting procedure and added NOTE to clarify that the location management server may choose to update the location reporting configuration of targeted location management clients  10.9.3.6.2: On-demand usage of location information procedure - Updated for following  1> The pre-condition is added that the location information of the MC service users at location management clients being requested has been provided with the location reporting configuration information. This ensures that all the required initial configurations are available at the targeted location management clients.  2> The step 3 is updated to use the requested location information if present in the request while fetching location on demand towards targeted client.  Revision:  1.Clarified the NOTE related to the requested location information.  2.Updated the Figure 10.9.3.5-1 and the steps to clarify that LMS may update the location configuration of the requested client based on the requested location information by the requestor. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | There is no way for MC service user or an MC service server to indicate what desired location information of another MC service user is required either using an on-demand request or periodic via subscription request. Also there is no way for the location management server to determine what desired location information provided from latest available location information or location information fetched on-demand from the targeted MC service user if not already configured | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 10.9.2.3, 10.9.2.5, 10.9.3.3, 10.9.3.5, 10.9.3.6.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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

#### 10.9.2.3 Location information request

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 1) | List of MC service users whose location information is requested |
| Functional alias | O  (see NOTE 1) | Location information of MC service users who have activated this functional alias is requested |
| Requested non-emergency location information | O  (see NOTE 2) | Identifies what location information is requested, except for emergency calls or imminent peril calls or emergency alerts or in emergency state |
| Requested emergency location information | O  (see NOTE 2) | Identifies what location information is requested, for emergency calls or imminent peril calls or emergency alerts or in emergency state |
| NOTE 1: Either the MC service ID list or the functional alias must be present.  NOTE 2: This IE is included to indicate what location information is expected. If not present, LMS sends all the available location information to the requestor. | | |

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) |
| Requested non-emergency location information | O  (see NOTE 1) | Identifies what location information is requested, except for emergency calls or imminent peril calls or emergency alerts or in emergency state |
| Requested emergency location information | O  (see NOTE 1) | Identifies what location information is requested, for emergency calls or imminent peril calls or emergency alerts or in emergency state |
| NOTE 1: This IE is included to indicate what location information is expected. If not present, LMS sends all the available location information to the requestor. | | |

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 |
| 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) |
| Requested non-emergency location information | O  (see NOTE 2) | Identifies what location information is requested, except for emergency calls or imminent peril calls or emergency alerts or in emergency state |
| Requested emergency location information | O  (see NOTE 2) | Identifies what location information is requested, for emergency calls or imminent peril calls or emergency alerts or in emergency state |
| NOTE 1: Either the MC service ID list or the functional alias must be present.  NOTE 2: This IE is included to indicate what location information is expected. If not present, LMS sends all the available location information to the requestor. | | |

Tables 10.9.2.3-4 describe the information flow to support the handling of location information across MC systems.

Table 10.9.2.3-4: Location information request (Location management server to location management server)

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service ID | M (see NOTE 1) | Identity of the requesting authorized MC service user at primary MC system |
| Functional alias | O (see NOTE 1) | Functional alias that corresponds to the requesting MC service user at primary MC system |
| MC service ID list | O (see NOTE 2) | List of identities of those MC service users at partner MC system whose location information are requested |
| Functional alias | O (see NOTE 2) | Functional alias of those MC service users at partner MC system whose location information are requested |
| Requested non-emergency location information | O  (see NOTE 3) | Identifies what location information is requested, except for emergency calls or imminent peril calls or emergency alerts or in emergency state |
| Requested emergency location information | O  (see NOTE 3) | Identifies what location information is requested, for emergency calls or imminent peril calls or emergency alerts or in emergency state |
| NOTE 1: Only present if Location information client has initiated the request.  NOTE 2: Either the MC service ID list or the functional alias must be present.  NOTE 3: This IE is included to indicate what location information is expected. If not present, LMS sends all the available location information to the requestor. | | |

\* \* \* \* 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 1) | 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. |
| Requested non-emergency location information | O  (see NOTE 2) | Identifies what location information is requested, except for emergency calls or imminent peril calls or emergency alerts or in emergency state |
| Requested emergency location information | O  (see NOTE 2) | Identifies what location information is requested, for emergency calls or imminent peril calls or emergency alerts or in emergency state |
| 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: This IE is included to indicate what location information is expected. If not present, LMS sends all the available location information to the requestor. | | |

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 | M | List of MC service users whose location information is requested |
| Time between consecutive reports | M (see NOTE 1) | 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. |
| Requested non-emergency location information | O  (see NOTE 2) | Identifies what location information is requested, except for emergency calls or imminent peril calls or emergency alerts or in emergency state |
| Requested emergency location information | O  (see NOTE 2) | Identifies what location information is requested, for emergency calls or imminent peril calls or emergency alerts or in emergency state |
| 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: This IE is included to indicate what location information is expected. If not present, LMS sends all the available location information to the requestor. | | |

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 |
| Requested non-emergency location information (see NOTE 3) | O | Identifies what location information is requested, except for emergency calls or imminent peril calls or emergency alerts or in emergency state |
| Requested emergency location information (see NOTE 3) | O | Identifies what location information is requested, for emergency calls or imminent peril calls or emergency alerts or in emergency state |
| 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.  NOTE 3: This IE is included to indicate what location information is expected. If not present, LMS sends all the available location information to the requestor. | | |

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

#### 10.9.3.3 Client-triggered location reporting procedure

NOTE 1: 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.

Pre-conditions:

- The location reporting trigger for the location information of the MC service users at location management clients being requested has been provided with the location reporting configuration information.



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 activate a location reporting procedure for obtaining the location information of location management client 1.

2. Location management server checks whether location management client 2 is authorized to send a location reporting trigger for location management client 1's location information. Depending on the information specified by the location reporting trigger, the location management server may initiate an on-demand location reporting procedure or an event-triggered location reporting procedure for the location of location management client 1 as specified in the clause 10.9.3.1.

NOTE 2: Based on the triggers and requested location information (if any) in the location reporting trigger request from the location management client 2, the location management server may choose to update the location reporting configuration of targeted 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.

Pre-conditions:

- The subscription to the location information of the MC service users at location management clients being requested has been provided with the location reporting configuration 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 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. Optionally, based on the requested location information (if any) in the subscription request from the location management client or MC service server, the location management server may choose to update the location reporting configuration of targeted location management clients.

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

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

##### 10.9.3.6.2 On-demand usage of location information procedure

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

The MC service server or the location management client can request location information at any time by sending a location information request to the location management server, which may trigger location management server to send the location information report immediately.

Figure 10.9.3.6.2-1 illustrates the high level procedure of on-demand usage of location information. The same procedure can be applied for other entities that would like to request on-demand location information at the location management server of an MC service user.

Pre-conditions:

- The location information of the MC service users at location management clients being requested has been provided with the location reporting configuration information.



Figure 10.9.3.6.2-1: On-demand usage of location information procedure

1. MC service server or location management client send a location information request to the location management server.

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

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. The location management server acquires the latest location of the location management clients being requested, by triggering an on-demand location report procedure as described in clause 10.9.3.2 depending on the requested location information (if any) in the location information request from the location management client or MC service server, or from PLMN operator (e.g. LCS network).

4. Then, location management server immediately sends the location information report including the latest location information acquired of one MC service user to the MC service server or to the location management client. If the optional MC service UE label is present, the location management server sends it, as part of the location information report, to the MC service user.

NOTE 3: The MC service server does not receive the MC service UE label.

\* \* \* \* End of changes \* \* \* \*