**3GPP TSG-SA WG6 Meeting #37-e S6-200641**

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

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.280** | **CR** | **0253** | **rev** | **-** | **Current version:** | **17.2.0** |  |
|  | | | | | | | | |
| *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:*** | Triggered location history reporting | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | BDBOS, BMWi | | | | | | | | | |
| ***Source to TSG:*** | S6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | enh3MCPTT | | | | |  | ***Date:*** | | | 2020-05-08 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | Currently existing information flows and procedures do not support the automatic transmission of locally stored, but triggered location reports of an MC service user after returning from off-network operation.  [R-5.11-009] in 3GPP TS 22.280 in clause 5.11 for on-network and off-network location reports based on triggered events.  Clause 7.1 in 3GPP TS 22.280 describes in general that MC services available during off-network are functional comparable to MC services during on-network and this includes location management, as an essential feature of MC communication. While triggered location reports are available during on-network operation, the same or modified off-network triggers allow such MC service continuity while off-network operation. The location reports provided after returning to on-network operation.  Use case #5, solutions #6 and #8 discussed in 3GPP TR 23.744. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | New information flow and new procedure for the automatic transmission of locally stored, but triggered location reports after returning to on-network operation. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The operational analysis of location information triggered during off-network operation cannot be included into operative-tactical decisions after returning to on-network operation.. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 10.9.2.13 (new), 10.9.3.9 (new), 10.9.3.9.1 (new), 10.9.3.9.2 (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | | **X** |  | Other core specifications | | | | TS 23.280 CR 0254 | | |
| ***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 \* \* \* \*

#### 10.9.2.13 Location information history report

Table 10.9.2.13-1 describes the information flow from the location management client to the location management server and from location management server to the MC service server or location management client for the location history reporting of location reports locally stored during off-network operation and after returning from off-network operation.

Table 10.9.2.13-1: Location information history report

|  |  |  |
| --- | --- | --- |
| Information element | Status | Description |
| MC service ID list (see NOTE 1) | M | List of identities of the reporting MC service user (e.g. MCPTT ID, MCData ID, MCVideo ID) |
| Triggered event | M | Identity of the event that triggered the storing of the report |
| Location Information (see NOTE 2) | M | Location information |
| Off-network (see NOTE 3) | O | Off-network location information indicator |
| NOTE 1: The MC service server may only require the MC service ID according to the MC service.  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.  NOTE 3: Only present if on-network triggering criteria instead of off-network triggering criteria used. | | |

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

#### 10.9.3.9 Usage of location history reporting procedure

##### 10.9.3.9.1 General

The location management client may get into off-network situation at any time after the initial location reporting configuration was provided by the location management server. Off-network situations can occur while not being connected to a MC system or lost connection to the underlying network. If any location information trigger applies during off-network, the location management client locally stores the corresponding location information report. The conditions in off-network situation may vary from the conditions in on-network situation and may e.g. include off-network distance travelled, off-network elapsed time, off-network call initiation, off-network emergency alert, off-network emergency group call, off-network imminent peril group call and off-network emergency private call.

NOTE: The procedure may also apply in some scenarios of isolated operation. Which conditions are applicable in this case, may depend on the particular isolated operation scenario. They may include all or a subset of the on-network conditions and e.g. in case only one single base station is available, the conditions entering cell and leaving cell may be relevant instead of cell change.

##### 10.9.3.9.2 Event-trigger location history reporting procedure

Figure 10.9.3.9.2-1 illustrates the procedure for the event-trigger based usage of location history reporting.

Pre-conditions:

1. The location management client 1 is configured to locally store off-network location information reports while in off-network operation.

2. The location management client 1 has locally stored off-network location information reports based on triggered events and while in off-network operation.



Figure 10.9.3.9.2-1: Event-trigger based usage of location history procedure

1. The location management client 1 enters on-network operation, establishes connection to the location management server and enters the state to transmit location information reports.

2. The location management client 1 provides the status of the available stored location information reports to the location management server.

NOTE 1: The location management server may forwards the status of location management client 1 at any time after receiving it.

3. The location management server decides whether to request off-network location information reports as described with the status report, or a subset the available off-network location information reports.

4. The location management server requests off-network location information reports.

5. The location management client 1 responds to the location management server with one or several off-network location information reports.

NOTE 2: The transmission of requested off-network location information reports does not interrupt the on-network location information reports

NOTE 3: The last stored off-network location information report is transmitted first.

NOTE 4: The transmission may stopped at any time with the Cancel location history reporting procedure, as described in clause 10.9.3.9.4.

6. The location management server notifies about the available off-network location information reports at the location information server, which may differ from the status report provided by the location management client 1.

7. The location management server updates the available location information with one or several off-network location information reports.

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

\* \* \* End of Change \* \* \* \*