**SA WG2 Meeting #161S2-2402545r04**

**Athens, Greece, 26th Feb – 1st Mar 2024**

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **23.273** | **CR** | xxx | **rev** | 04 | **Current version:** | **18.4.0** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network |  | Core Network | **x** |

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| ***Title:*** | Multiple Location Report for Next Generation Emergency Routing | | | | | | | | | |
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| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI19 | | | | |  | ***Date:*** | | | 2024-02-11 |
|  |  | | | |  | |  | | |  |
| ***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)* | |
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| ***Reason for change:*** | | As per regulatory requirements described in the discussion paper - S2-2402544, location-based emergency call routing requires device location to be available on each hop without delaying the normal call set-up process. Therefore, LCS in the operator network shall provide the location to multiple LCS clients (i.e., emergency call routing entities) for the same device, and meet the QoS and delay expected by the sequence of routing entities.  Multiple routing entities can have better and better location results while hop-by-hop routing is performed. More accurate result can be available to more recent LCS request. For example, the initial hop to nation-wide routing entity may be routed based on initial cell-based location. Subsequent hops can be routed based on a more accurate location estimates when more measurements are available afterwards, especially when device is nearby the border of different PSAP serving areas.  Multiple Location Procedure defined in clause 6.1.3 of TS 23.273 serves only a single (PSAP) client. It shall be enhanced to provide a sequent of locations upon to be requested by multiple LCS Clients (emergency call routing entities) within a single LCS session. | | | | | | | | |
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| ***Summary of change:*** | | Adding a new section to enable multiple location procedure for multiple LCS Client (i.e., emergency routing entities) | | | | | | | | |
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| ***Consequences if not approved:*** | | Location result for routing may not meet the regulatory delay and QoS requirements due to limited time of routing hop. | | | | | | | | |
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| ***Clauses affected:*** | | 6.10.x | | | | | | | | |
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|  | | **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 [all new] \* \* \* \*

6.10.x Multiple location procedure for multiple emergency LCS clients

Multiple location procedure for multiple emergency LCS clients (e.g., routing entities including routing proxy or a redirect server in TS 23.167) is an extension procedure of 5GC-MT-LR multiple location procedure without UDM Query defined in clause 6.10.4, with following differences:

1. There are a sequence of requests from a series of external emergency clients’ (e.g. LCS requests from routing entities defined in clause 4.3.4). GMLC identifies the requests and starts the multiple location procedure defined after request received in clause 6.10.4.

2. At step 2.2, GMLC starts responding to the series of the requests from different external emergency clients based on the available INTERMEDIATE result(s) received from LMF. Step 3 and 4 in clause 6.10.4 are executed without any change when GMLC receives and responds to the requests from multiple emergency LCS clients. This could be configurable, e.g., by maximum response timer.

NOTE: It is implementation specific how GMLC identifies the request is from a routing entity or LCS client which requires multiple location procedure.

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